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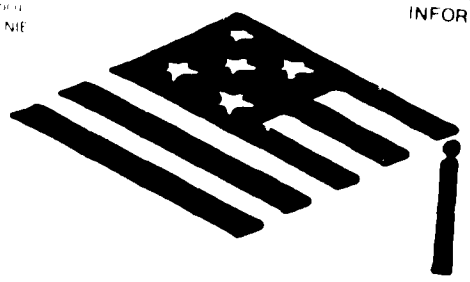
ABSTRACT

The current state of postsecondary education is reviewed for the following sectors: undergraduate, graduate, and professional schools; proprietary and vocational schools; corporate education and training; labor and union education programs; and the educational efforts of the federal government. Population trends and the effects of ethnicity, region, and age on the population pool are reviewed to provide estimates for future postsecondary education enrollments. In addition, the need for education and training investment in America's human resources is examined by looking at current labor force profiles, the structure of employment, and technology trends and their implications for workers and worker education. The federal role in providing access to postsecondary education from the post-World War II era until current times is also traced. Information for the postsecondary sectors covers enrollments; revenues; resource allocation; tuition; federal financial aid; sources of financial support; academic departments offering degrees by level; distribution of financial assistance by selected financial assistance programs for proprietary vocational schools; courses in adult education by type and provider; civilian federal training costs, courses, and participation; and military training loads and expenditures. (SW)

National Commission on Student Financial Assistance

THE TERRAIN OF POSTSECONDARY EDUCATION



April 1983

NATIONAL COMMISSION ON STUDENT FINANCIAL ASSISTANCE

The National Commission on Student Financial Assistance was created by Public Law 96-374, the Education Amendments of 1980. During the congressional deliberations on those amendments, the Congress realized there was a general lack of reliable information and well-informed policy recommendations on many of the most fundamental and important federal student assistance policy issues in postsecondary education. The National Commission was established to correct this situation and to serve as a reliable policy agent for the President and the Congress.

Established in 1981, the National Commission is a bipartisan panel of members of Congress, leaders in the higher education community and representatives of the public. The panel is composed of twelve members, four appointed by the President of the United States, four by the House of Representatives and four by the United States Senate.

The final report of the National Commission is due on July 1, 1983.

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*Replaced the Honorable Wendell Bailey on February 24, 1983.

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FOREWORD

In the past decades, the variety and diversity of post-high school education activities have expanded tremendously. "Postsecondary" education has evolved from traditional colleges and universities into a much more complex array of institutions offering a broad range of services. Postsecondary education is now an activity of people from age 18 up to age 70, and older in some cases; it is an activity for Americans who are likely to change careers five times within their working life. The present volume portrays the current state of the postsecondary education industry across the various sectors: undergraduate and graduate schools, proprietary and vocational schools, corporate, and labor and union education programs, and educational efforts of the federal government. This report aims to provide a base for the discussion of future postsecondary education needs.

The Terrain of Postsecondary Education provides a context for looking at the total educational needs of Americans in terms of the economy and other national priorities, and provides a framework for discussing education policy. Much of the research deals with particular segments of postsecondary education, but not with the whole enterprise. The volume was conceived to assist the Commissioners of the National Commission on Student Financial Assistance in placing these segments within a whole context, to aid the Commission's work of making specific recommendations.

Experts in various aspects of postsecondary education were invited by the Commission to assist in developing a research design and agenda to facilitate the work of the Commission. This Technical Advisory Group consists of: David Breneman, Brookings Institution; Denis Doyle, American Enterprise Institute; Roberta Dunn, Heritage Foundation; Michael O'Keefe of the Carnegie Foundation for the Advancement of Teaching; William Stallkamp of the Mellon Bank; Virginia Hodgkinson, Independent Sector; Patricia Smith, American Council on Education; and Thomas Butts, University of Michigan. At the advisory group's suggestion, the Commission authorized, on September 23, 1982, the preparation of this volume.

In fulfillment of its legislative mandate (P.L. 96-374) to examine and answer specific questions relating to student financial assistance, the Commission needed to better understand the problems and the options relating to postsecondary student financial assistance programs. The present volume, which is based on expert research, attempts to provide that factual background. Because each chapter was

written independently, there may be some overlap (for example, in the papers on undergraduate and proprietary education) and data on the same topics may vary slightly when different sources are cited.

The following people contributed research findings in the subject areas specified: Harold Hodgkinson, National Training Laboratories Institute, and Harriet Fishlow, University of California, Berkeley (demography); Douglas N. Ross, National Commission on Student Financial Assistance (labor force education and training); Virginia A. Hodgkinson, Independent Sector, and Donna Lumia, National Commission on Student Financial Assistance (federal role); Barbara Lee, Rutgers University (undergraduate education); Michael S. Garet, Paul Butler-Nalin and Scott Bassage, all of Stanford University (graduate education); Wellford Wilms, University of California at Los Angeles (proprietary education); Marsha Levine, American Enterprise Institute (corporate sector education and training); John MacKenzie, University of the District of Columbia (labor/union education and training); Patricia Hamilton, education and training consultant, and Steven Leifman, National Commission on Student Financial Assistance (federal government education and training). This volume was edited by Virginia A. Hodgkinson, Douglas N. Ross and Barbara S. Kraft.

CHAPTER ONE: OVERVIEW

A DEMOGRAPHIC CONTEXT

In 1973, the National Commission on the Financing of Postsecondary Education in the United States used the term "postsecondary" in an effort to encompass and describe the diversity of schools and training programs that served as educational choices of many high school graduates. Since that time, the program balance in postsecondary education has altered, in large part caused by the nation's changing demographic scene.

Since the early 1970s, the U.S. population has changed, and will continue to change markedly during the next 20 years. These anticipated changes are, of course, challenges to policy makers and public alike.

The high birth-rate years 1946 to 1964 marked the post-Second World War baby boom. From 1965 through the late-1970s, the birth rate declined for white middle-class Americans and increased among minority groups.

In the past few years, we have been experiencing an "echo"--an increase in births from the baby boom generation. This echo is not as large as the original baby boom cohort because many women have postponed having children, had no children, or have had fewer children than their parents. During the 1980s, the baby boom generation, entering the 35-to-44 age group, will increase over 40 percent. Using this demographic early warning system, it is possible to assist with planning for future generations of postsecondary students.

To illustrate, the baby boom made tremendous demands on different elements of society as it passed through each age level. The first expansion began with hospital maternity wards, followed by Levittown-like suburbs, elementary schools, secondary schools, colleges, entry-level jobs and so on. As the number of births decreased, demand for each of the recently increased services dropped sharply as each age level passed by.

Rapid growth in college enrollments in the 1960s was caused by the entrance of the baby-boom generation into the prime college-going ages and by higher-than-average percentages of their contemporaries going to college. This age group reached a twentieth-century peak in 1981 of 29.5 million persons. However, until the oldest members of the second baby boom graduate from high school in about 1998, the postsecondary education industry segment, traditionally drawing upon the 18-to-24-year-old age group, can look forward to a general decrease in the size of high school graduating classes.

VARIATIONS IN POPULATION SEGMENTS

The effects of differential fertility--all people not having the same number of children--by ethnicity, region and age are key indicators in postsecondary education's future over the next two decades:

Ethnicity

The major decline in births after the Baby Boom was almost completely a Caucasian phenomenon, while birth rates for minorities remained even during those years. Thus, minority births were an increased percentage and white births were a smaller percentage of the entire birth cohort. Rapidly increasing numbers of minority students are attending public elementary and secondary schools. Most populous states have a very high percentage of these students enrolled in public schools, notably 32 percent in New York State and 43 percent in California (see Table 1). The percentages are generally higher in elementary schools than they are in secondary schools, suggesting that there will be an increasing number of high school students from minority backgrounds. Several recent studies have suggested that, in terms of overall population, California will have a "minority majority" by the end of the century.

By 1990, minorities of all ages will constitute from 20 percent to 25 percent of our total population, and about 30 percent of the nation's youth. In Texas and California, and some other states, traditional minorities will be over 45 percent of the state birth cohort.

TABLE 1

MINORITY PUBLIC SCHOOL ENROLLMENT, FALL 1980

State and Region	% of Total Enrollment	State and Region	% of Total Enrollment
United States	26.7	Southeast	
		Alabama	33.6
New England		Arkansas	23.5
Connecticut	17.0	Florida	32.2
Maine	0.9	Georgia	34.3
Massachusetts	10.7	Kentucky	9.1
New Hampshire	1.3	Louisiana	43.4
Rhode Island	8.2	Mississippi	51.0
Vermont	1.0	North Carolina	31.9
		South Carolina	43.5
Middle Atlantic		Tennessee	24.5
Delaware	28.8	Virginia	27.5
District of Columbia	96.4	West Virginia	4.3
Maryland	33.5		
New Jersey	28.4	Southwest	
New York	32.0	Arizona	33.7
Pennsylvania	14.9	New Mexico	57.0
		Oklahoma	20.8
Great Lakes		Texas	45.9
Illinois	23.6		
Indiana	12.0	Rocky Mountain	
Michigan	21.3	Colorado	22.1
Ohio	14.7	Idaho	8.2
Wisconsin	9.3	Montana	12.1
		Utah	7.3
Plains		Wyoming	7.0
Iowa	4.1		
Kansas	12.7	Far West	
Minnesota	5.9	California	42.9
Missouri	14.8	Nevada	18.9
Nebraska	10.5	Oregon	8.5
North Dakota	3.5	Washington	14.1
South Dakota	7.9	Alaska	28.4
		Hawaii	75.2

SOURCE: High School Graduates: Projections for the Fifty States. Western Interstate Commission on Higher Education, National Institute of Independent Colleges and Universities, Teachers Insurance and Annuity Association. Boulder, Colorado: Western Interstate Commission on Higher Education, 1979; and Stephen Dresch, "A Demographic-Economic Perspective on the Future of Higher Education." Mimeographed. New Haven: Institute for Demographic and Economic Studies, 1979.

At present, there is no difference between white and black participation rates in higher education among dependent high school graduates within the same family income groups. The overall difference results from the concentration of blacks in the lowest income groups, since college attendance is positively related to family income.

Regionalism

Fertility-rate variations affect various regions. In the Sun Belt, both total births and birth rates are up, while in the Frost Belt, they are holding even or still declining. More educational facilities and services for youth will be needed. Within a decade, the number of high school graduates will increase in most Sun Belt states, a high percentage of whom will be minority group members, especially Hispanics. This group represents the largest sector of those homes in which a language other than English is spoken--36 percent in Miami and 40 percent in San Antonio. Among 5- to 17-year-olds of Hispanic descent, 65 percent speak Spanish, and all but 16 percent speak English.

Private education is likely to be affected more than public, because it is concentrated in the areas of greatest demographic decline, the Northeast and North Central states.

By 1990, 50 percent of the U.S. population will live in the Sun Belt--19 percent in the West and 31 percent in the South.

Older-student population

Rapid growth is occurring in the number of people over age 65--to 30 million by 1990, up from 7.5 million in 1970 and 10 million in 1980. The number of people over age 75 will also begin to increase dramatically--to 12 million by 1990.

Women

Although in the past, all women have been underrepresented in college enrollments, today 52 percent of undergraduate enrollments are female. Access to graduate education for women has also increased dramatically, particularly in law and medicine. These increases have produced proportional decreases in the number of women who enter schools of teacher education, once the major stepping stone for women into professional work. Today no more than 3 percent of school superintendents are female.

THE CURRENT STATUS OF POSTSECONDARY EDUCATION

The difficulty of accurately describing the amount of postsecondary education activities--the number of adults and the national education investment from public and private sources--has been a major challenge.

COSTS

In 1979-1980, $181.3 billion was spent on education from preprimary through higher education, according to estimates in the Digest of Education Statistics (1981). However, only $54 billion was included for higher education institutions. The costs of other postsecondary education activities and much of federal student assistance were not included in these figures. Federal investment in postsecondary education is quite small when viewed against the investment of the total private sector, state governments and individuals (see Table 2). About $17.1 billion came from federal government expenditures or approximately 14 percent of the total estimated investment in postsecondary education and training activities for 1980.

ENROLLMENTS

Although there is no uniform, reliable data on how many people enroll in some organized postsecondary educational activity, and how many education and training programs they may be attending at the same time, we can make fairly accurate overall estimates. We do know, for instance, that one of every two adults participates in some kind of organized educational activity, either at a school or college, or at a workplace (see Table 3 and Figure 1). From the statistical data presented in the papers in this volume, we may conclude that about 94 million adults share in an industry with annual revenues of approximately $114 billion.

TABLE 2

ESTIMATED TOTAL INVESTMENT IN POSTSECONDARY EDUCATION AND TRAINING FROM ALL SOURCES, 1980
(in billions of dollars)

State and private revenues to higher education institutions*	$ 56.0
Corporate	$ 35.0
Federal government--student aid, institutional assistance, research and development	$ 14.8
Federal Work Training Acts--postsecondary share	$ 2.3
State and local government--vocational education	$ 2.0
Proprietary schools†	$ 1.6
Labor unions	$ 1.0
State governments	$ .8
Federal government internation education and training‡	$ .6
Total	$114.1

*$4 billion of the total $60 billion higher education revenues are estimated as federal revenues from various sources going directly to institutions.

†Based on mean charges of $958 per student in 1978.

‡This estimate is probably very low as several agencies, offering training and education, do not separate the costs from their operating budgets.

SOURCES: All costs are estimated and are based on Lawrence E. Gladieux, Janet S. Hansen with Charles R. Byce, "Budget of the United States Government," in The Federal Government, the States and Higher Education: Issues for the 1980s ed. by College Board (New York: College Entrance Examinaton Board), pp.7-8; U.S. Department of Education, National Center for Education Statistics, Financial Statistics of Higher Education (Fall 1980) and Digest of Education Statistics (1980, p. 166) and (1981, p. 168); U.S. Bureau of the Census, Statistical Abstract of the United States, 1981 (Washington, D.C.: U.S. Government Printing Office, 1981); and on the papers in this book.

TABLE 3

ESTIMATED PARTICIPANT HEADCOUNT IN POSTSECONDARY EDUCATION AND TRAINING AMONG U.S. POPULATION 17 YEARS OLD AND OLDER, BY PROVIDER, 1980
(in millions)

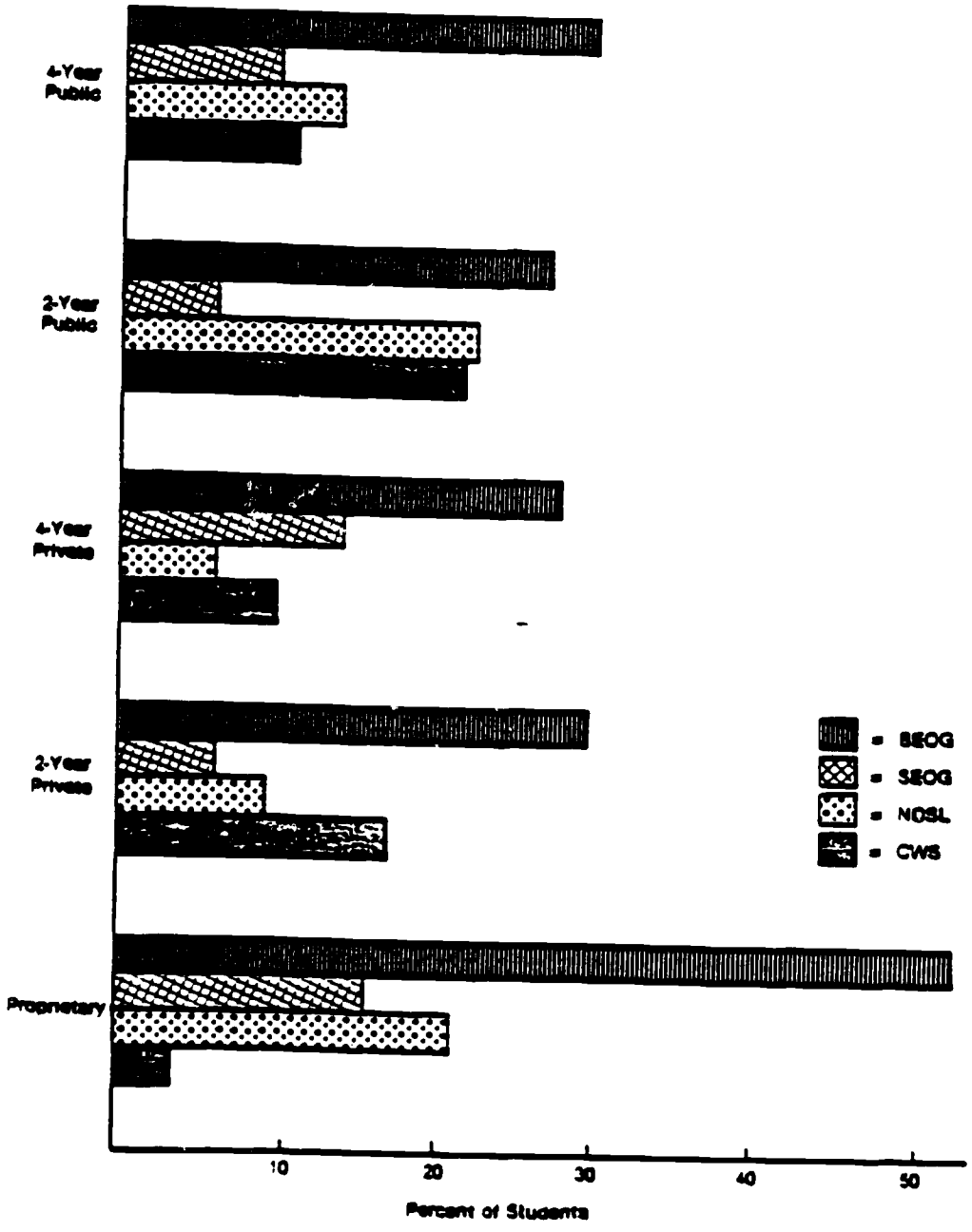
Corporate (in-house)	53.0
Agriculture extension	12.3
Colleges and universities	12.2
Corporate at colleges and university extension	11.0
Federal government	2.5
Noncollegiate postsecondary institutions (public and proprietary)	1.6
Unions (noncollegiate)	1.0
Total	93.6*

*This estimate is probably high as students may participate in more than one educational activity concurrently.

SOURCES: U.S. Department of Education, National Center of Education Statistics; U.S. Bureau of Census, Current Population Reports; Series P-25 and Statistical Abstract of the United States, 1981, p. 27; and the papers in this book.

FIGURE 1

PERCENTAGE OF POSTSECONDARY UNDERGRADUATE STUDENTS RECEIVING FEDERAL FINANCIAL ASSISTANCE BY TYPE OF AID AND LEVEL AND CONTROL OF INSTITUTION: ACADEMIC YEAR 1978-79



SOURCE: Applied Management Sciences, Study of Program Management Procedures in the Basic Grant and Campus Based Programs, Summary Final Report, prepared for the U.S. Department of Health, Education and Welfare, Office of Program Evaluation, Washington, D.C. 1980.

POSTSECONDARY TERRAIN CHAPTER SUMMARIES

This volume, which is summarized by chapter below, was developed by the National Commission on Student Financial Assistance in order to further public understanding of the size, components, scope and cost of postsecondary education and training in the United States.

EDUCATION AND TRAINING IN THE FUTURE LABOR FORCE

This chapter suggests that pressures from foreign competition and demands for adaptation to technological advance require significant new investments in human capital. Past experience has shown a close link between education and employment, therefore, it becomes a national imperative to expand educational opportunity. Technical literacy is a necessity. The structure of employment has shifted from manufacturing to services, but more specifically the lion's share of the service sector is in the "information" field--about 60 percent of the U.S. work force now processes information. Policy makers face a genuine challenge: just as the need for reading, writing and computational skills becomes a necessity for employment, functional illiteracy is rising.

THE FEDERAL ROLE IN POSTSECONDARY EDUCATION

This background piece traces the federal role in providing access to postsecondary education from the post-Second World War era until current times. It addresses the additional groups that have been provided access, the policy reasons for doing so, and the impact of federal policy upon access to various groups of citizens to postsecondary education.

POSTSECONDARY EDUCATION COMPONENTS

The postsecondary education industry is comprised of a number of overlapping sectors. The "terrain" includes:

- undergraduate higher education, including extension and noncredit continuing education;
- graduate education;
- proprietary education;

- corporate education and training;
- labor union education and training; and
- education provided by federal government agencies.

Each of the chapters on these educational sectors discusses size (number of institutions) and enrollment and overall financing by source of funds, and attempts to determine student financing needs.

The chapter on Undergraduate Postsecondary Education reports:

- As of 1980, nearly 11,000 institutions provi some form of undergraduate postsecondary education: 3,270 of them were colleges and universities, while 7,700 were noncollegiate postsecondary schools (such as vocational or proprietary schools).

- Enrollments in noncollegiate schools reached 1.6 million in 1980, 9.5 million undergraduates were enrolled in colleges and universities in 1981.

- Federal student aid appropriations were slightly more than $200 million in 1965 and nearly $9 billion in 1980.

- In 1979, approximately one-half of all federal student aid recipients were minority group members: blacks received 30 percent of all student aid and Hispanics received 14 percent.

- Revenues to all colleges and universities totaled just over $58 billion in 1980. Private institutions depend heavily upon tuition for their revenue (36 percent); by way of comparison, a state-supported public college received 13 percent of its revenue from tuition in 1980, and 46 percent of its revenue from state funds.

The chapter on Graduate Education reports that, of the 3,000-plus institutions of higher education in the United States, about 1,000 offer graduate and professional programs and of these about 300 are doctorate-granting institutions. Of the 1,000 institutions offering graduate and professional education, more than 600 have graduate programs in education, 500 in business, 175 in law, and 100 in medicine. The authors note:

- About 32,000 doctorates and 303,000 Master's degrees are awarded annually; 1,300,000 students are currently enrolled in graduate programs, and another 250,000 in professional programs; and of these students, about 60 percent are women, and 6 percent are black.

- Federal outlays for graduate student support declined from an early 1970s' level of $1.3 billion to a late-1970s' level of approximately $800 million.

- In fiscal year 1981, about 500,000 graduate students received slightly more than $1 billion.

The chapter on Proprietary Schools notes that about 6,000 schools provide most postsecondary vocational training in the United States, and reports that:

- the top ten companies operating about 60 vocational schools in 1979 produced revenues of approximately $225 million;

- in 1980, enrollments totaled about 1,160,500 students ranging from business (423,000), cosmetology (132,000), flight (63,000), and trade schools (116,000) to correspondence schools (322,000); and

- about one-third of the students (nearly 400,000) attending proprietary schools received grants in 1979, at a cost to the federal government of $277 million.

The Corporate Education and Training chapter reports that corporate-based education and training serve the needs of youth and entry-level workers, dislocated and retrained workers, and employees at all levels of management. Employee participation rates are estimated at as high as 13 percent in primarily job-related training, costing corporations an estimated $35 billion. Other factors include:

- about 11 million corporate employees are in traditional postsecondary education institutions;

- business and industry in 1981 offered some 14 percent of all adult education courses;

- in 1977, about 35 percent of large companies provided remedial education for employees; and

- information on training and education in small businesses is almost nonexistent, yet these businesses create an estimat 70 percent of new jobs.

The Labor Union Education and Training chapter reports that the topic has been the subject of occasional and largely nonsystematic study and, as a result, data are very limited. The chapter examines the structure and function of unions, now with a membership of 24.4 million, discusses areas of educational programming, such as the George Meany Center for Labor Studies which in 1981 offered courses to over 4,000 labor leaders, and gives program examples.

The chapter on Federal Government Education and Training reports:

- 522,000 civilian federal employees in 1980 were enrolled in nearly 200 different education and training programs.
- the cost to the federal government is estimated at $327 million.

To summarize, in spite of the fact that the data on the current status of postsecondary education are subject to numerous caveats and are generally incomplete, it is clear that postsecondary education is a huge and diverse enterprise serving at any one time about half of the adult population. We can no longer confine our thinking about education to youths from ages 18 to 24, but rather must think in terms of national educational needs during each person's life span. It is also clear that much more attention should be paid in the future to estimating the number of people engaged in postsecondary education in order to assist policy makers of all types to get a firmer grasp on the relation and need of education to the economic growth and vitality of our nation.

CHAPTER TWO: EDUCATION AND TRAINING IN THE FUTURE LABOR FORCE

EXECUTIVE SUMMARY

Whether or not the postsecondary education industry in America is producing the necessary educated and trained people for the work force of the future cannot be answered until that future arrives. However, identified here are several findings that could have major qualitative effects on the labor force of the future:

First, based upon a 1975 study, some twenty percent of adult Americans are functionally illiterate--unable to fill out job applications for example. The total number of illiterate people, including youth and adults is unknown.

Second, in general persons with higher levels of education and more training have lower levels of unemployment.

Third, as socioeconomic needs change, continuing education and job retraining become increasingly necessary, just to keep current with technical advancement.

BACKGROUND

The economic future for American workers is uncertain. The employment outlook has been and continues to be altered by new technologies and foreign competition. Education and training requirements for new jobs are forging ahead of workers' training and experience. During the post-Second World War era, profound socioeconomic changes occurred in the United States and much of the industrialized world which altered the basis for education and economic policy making:

- The number of education/jobs mismatches is increasing. In 1980 the U.S. Department of Education, with the National Science Foundation, found that America is becoming scientifically and technically illiterate. The Carnegie Commission on Higher Education (which later merged with the Carnegie Commission for the Advancement of Teaching) in its early 1970s studies suggested that nearly one-third of our youth are ill-educated and ill-equipped to make their way in American society. The high school dropout rate is also increasing. However, some bright spots exist--the number of systems analysts, programmers and service technician occupations must double to meet the demand of this decade.

- Twenty percent of American adults are functionally illiterate--unable to read a job notice or to fill out a job application.[1]

- Newsweek magazine estimates that "from 50 to 75 percent of all U.S. factory workers could be displaced by smart robots before the end of the century."[2] (But, the American Robotics Association claims that robots could create two more skilled jobs for every one displaced). With the rise of office automation, the French government has estimated that banking and insurance could lose some 30 percent of its workers in the next decade.

- At the turn of the century, farmers constituted more than one-third of the labor force; today, more people are employed full time in our universities than in agriculture.

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[1]Norvell Norcutt, "Adult Functional Competency," Industrial and Business Training Bureau, University of Texas, Austin, 1975.

[2]Newsweek, June 30, 1980.

Some 60 percent of America's work force is now employed in "information" occupations. They are teachers, clerks, secretaries, programmers, accountants, stockbrokers, managers, bankers and bureaucrats.[3]

- Of the 19 million jobs created in the 1970s, nearly 90 percent were in the service/information sector, with about 5 percent in manufacturing and about 6 percent in other goods-producing areas.[4]

- In the post-Second World War era, U.S. productivity growth--that is, the production of more goods and services with fewer resources--has declined in dramatic steps, from 3 percent per year to a negative in the last years of "malaise." Productivity growth, the linchpin of progress, engenders change and dislocation.

From now until the end of the century, we must make optimum use of human resources along with long-term investment in physical resources if we are to meet the challenges of international competition and domestic economic change.

This paper examines the need for education and training investment in America's human resources by looking at current labor force profiles, the so-called structure of employment (or how people earn their living) and technology trends and their implications for workers and worker education.

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[3]John Naisbitt, Megatrends: Ten New Directions Transforming Our Lives (New York, Warner Books, 1982); and U.S. Department of Commerce, Office of Telecommunications, Information Economy: Definition and Measurement (Washington, D.C.: OT Special Publications, 1977) pp. 77-112.

[4]Ibid.

CHARACTERISTICS OF THE LABOR FORCE[5]

The Bureau of Labor Statistics (BLS) in the U.S. Department of Labor publishes three different projections of the labor force for the years 1985 and 1990 (See Table 1).

Despite these divergencies, all of the projections suggest important changes in the age structure of the population and a continuation of the growth trend in women's participation in the workplace. In general, all three sets of projections show:

- a large labor force increase in the central age groups 25 to 34;
- a decline in the size of the youth labor force; and
- a significant increase in the number and relative importance of women in the labor force.

By 1985, BLS intermediate growth projection calls for a labor force of about 113.1 million, or about 2.5 million above the current level of 111.6 million persons.

The civilian labor force grew nearly 2.5 percent a year during the 1970s compared to a 1.7 percent rate in the 1960s. Thus, both the labor and employment rate grew more during the 1970s than did the total United States population, with women and young people capturing most of the employment growth. Labor force growth rates are likely to be in the range of 1.25 percent to 1.5 percent for the 1980s and to decrease to about 1 percent in the 1990s. Much of the employment growth for the 1980s is expected to be in the so-called service industries.

[5]All figures cited in this section are based on Bureau of Labor Statistics data.

TABLE 1

CIVILIAN LABOR FORCE PROJECTIONS

	Actual	High	Intermediate	Low
Labor force (millions)				
1978	100.4			
1985		117.0	113.0	108.9
1990		125.6	119.4	113.5
Annual labor force growth rates: (percent)				
1973-78	2.5%			
1977-85		2.3%	1.9%	1.4%
1985-90		1.4	1.1	.8
Labor force participation rate:				
1978	63.2%			
1985		67.7%	65.3%	63.0%
1990		69.7	66.2	63.0
Women's participation rate:				
1978	50.0%			
1985		57.1%	54.8%	52.4%
1990		60.4	57.1	53.8

SOURCE: U.S. Bureau of Labor Statistics

YOUNG WORKERS

During the 1970s youth unemployment rates (ages 16 to 24) grew tremendously as the baby boom children exerted their first impact on the labor force. Particularly affected were minority youths.

Some regions, such as the Northeast and Midwest, have special problems. The Midwest, for example, is experiencing something of a braindrain--only 19 percent of the 1980-81 Michigan State University graduates took jobs in Michigan, compared to more than one-half in 1973 (see Tables 2 and 3).

The lower fertility rate of the 1970s will result in a decline in young workers in the 1980s. This should affect employment rates on lesser-skilled and entry-level jobs, both classifications generally being reserved for younger workers. Military recruiting could become increasingly difficult as the services will face greater competition with civilian demands. However, in 1981, the nation's youth labor force was underutilized.

The slowdown in labor force growth will be most prominent in the youth labor force, ages 16 to 24 (see table 1). Already growing at a slower pace than previously, the youth labor force is projected to decline from 25 million in 1980 to 22.4 million in 1990 and to 20.4 million in 2000.

PRIME-AGE WORKERS

Prime-age workers, ages 25-to-44, will make up half the labor force by 1990. This demographic fact should greatly improve the economic growth rate during the 1980s as well as strengthen the ability of the economy to provide for its nonworking population. The annual rate of change in the total labor force is projected to be 1.6 percent in the first half of the 1980s and 1.1 percent from 1985 to 1990. Underlying this slowdown is the reduced number of younger workers reaching working age in the 1980s due to the sharp decline of the birth rate that began in the early 1960s (see Table 3).

OLDER WORKERS

The age-65-plus population in the United States is currently growing at twice the rate of the general popula. After 2010, which is the year the baby boom generation will begin to retire, the growing number of elderly people will cause the worker-to-nonworker ratio (or the "dependency" ratio) to worsen, if present trends in retirement pensions and health care continue. With fewer workers entering the labor force, new patterns for work and retirement for older people are likely to develop during the twenty-first century as employers become more motivated to retain older workers.

TABLE 2

RATES OF YOUTH UNEMPLOYMENT BY STATE

(numbers rounded to thousands)

Region	Youth Labor Force	Youth Unemployment	Rate
Northeast	2,083	416	20.0%
Midwest	2,096	436	20.8
Northeast and Midwest	4,179	852	20.4
South	2,662	529	19.9
West	2,136	380	17.8
South and West	4,798	909	18.9
U.S. TOTAL	8,977	1,761	19.7

SOURCE: U.S. Bureau of Labor Statistics, unpublished data from the Current Population Survey, 1980.

TABLE 3

DISTRIBUTION OF LABOR FORCE, INTERMEDIATE GROWTH ASSUMPTIONS
(in percent)

	Actual distribution		Projected distribution	
	1970	1977	1985	1990
Total:				
16 and over	100.0%	100.0%	100.0%	100.0%
16 to 24	21.5	24.3	21.6	18.7
25 to 54	60.9	61.0	65.7	70.0
55 to 64	13.8	11.7	10.2	8.9
65 and over	3.9	3.0	2.5	2.4
Men:				
16 and over	61.9	59.0	55.8	54.6
16 to 24	11.7	13.2	11.0	9.3
25 to 54	38.9	36.7	37.0	38.4
55 to 64	8.6	7.2	6.2	5.3
65 and over	2.6	1.9	1.6	1.5
Women:				
16 and Over	38.1	41.0	44.2	45.5
16 to 24	9.8	11.1	10.6	9.4
25 to 54	22.0	24.3	28.7	31.6
55 to 64	5.0	4.5	4.0	3.6
65 and over	1.3	1.1	.9	.9

SOURCE: Paul Flaim and Howard Fullerton, "Labor Force Projections to 1990: Three Possible Paths," Monthly Labor Review, December 1978, pp. 25-35.

WOMEN

Nearly three of every five persons entering the labor force during the 1970s were women. Women are expected to enter the labor force at a rate of one million a year and the female participation rate is likely to reach about 60 percent by 1990. Numerous factors account for women's increased labor force participation among them being economic factors, the growth of service industries, increased education and equal employment opportunities.

MINORITIES

The dependence of middle-class white Americans on the success of minority youth in school and at work is just beginning. For example, we are moving rapidly from a period of worker abundance to a period of worker shortages, particularly as the number of entry-level workers declines. Businesses seeking new employees (which they will do with great intensity by 1990) will be increasingly dependent on minority workers and on the educational system that taught them, from kindergarten through postsecondary schools. This is the major reason businesses are more interested in schools and colleges today than previously--the job structure demands increasingly high levels of higher order skills in workers, and it is vital to business that these skills are possessed by entry-level workers.

Inadequate basic education, poor or nonexistent job skills, location in economically depressed areas and discrimination contribute to minority unemployment. In late 1979, almost 37 percent of all black teenagers were unemployed compared to about 14 percent of white teenagers. Although incomes are generally lower for employed minorities, the labor market for college-educated minorities improved considerably over the past two decades.

What is apparent is that educational disadvantages, including illiteracy and deficiencies in basic skills, pose insurmountable barriers to employment for many people. In the years ahead, new links must be forged between educational institutions, training programs and private employers to improved the transition from school to labor market. The difficulties of this transition suggest a strong need for close examination of the relationship between education at all levels and work at all levels.

In fact the incidence of hardship has declined significantly with increased educational attainment. High school dropouts were 2.6 times more likely than college

graduates to experience unemployment after leaving school. Further, black work force participants were 1.7 times more likely than whites to experience unemployment.[6]

The minority population as a result of higher birth rates and immigration is expected to increase much more rapidly than the total population. Thus, on the demographic averages, minorities are likely to continue high unemployment levels.

[6]Robert Taggart, unpublished study, Center for Social Policy Studies, George Washington University, 1982.

QUALITATIVE CHARACTERISTICS OF THE WORK FORCE

Qualitative aspects of the work force are important because they determine to a large degree an individual's employability, productivity on the job and ability to adapt to changing work circumstances.

EDUCATION

General levels of education of workers have risen since the Second World War. An increasing proportion of young people have completed high school, enrolled in college and joined the work force. During the 1950s and 1960s and into the early 1970s, college enrollment tripled and the number of graduates nearly doubled. Yet the numbers mask severe qualitative problems.

One in five adults in America is unable to understand concepts necessary to their daily lives such as insurance or banking, and are unable to fill out a job application (see Table 4).

The demographic pressure from the baby boom has shifted from the educational system to the labor market. During the 1970s the earnings of college graduates fell relative to those of high school graduates, thus raising questions as to the economic value of a college education. In the 1980s, as relatively fewer workers vie with each other for entry level positions, the returns to investment in education could improve. Job market imbalances, however, are likely because it is difficult to forecast specific demands for specific skills.

As societal needs change, continuing education will be necessary to keep pace with developments in various fields. The future employment market will require not only competency in the basic skills but also an understanding of specific skills that will enable adaptation to changing technologies and changing employment patterns. In other words, a degree will increasingly signify that the recipient is able to learn, and less that a person is "certified knowledgeable."

TABLE 4

ADULT FUNCTIONAL LITERACY*

(in percent)

Skill or Knowledge Area	Functional Literacy Levels†		
	Level I	Level II	Level III
Skill:			
Reading	22%	32%	46%
Writing	16	26	58
Computation	33	26	41
Problem solving	28	23	49
Knowledge Area:			
Occupational knowledge	19	32	49
Consumer economics	29	33	38
Government and law	26	26	48
Health	21	30	48
Community resources	23	26	51
Overall competency	20	34	46

*Adult functional literacy is the ability to apply skills that are essential to an adult's functioning effectively in modern society.

†Level I adults can function only with great difficulty because of inadequate mastery of the requirements for functional literacy; Level II adults are functionally literate but not proficient; and Level III adults are proficient.

SOURCE: Northcutt, Adult Functional Competency.

As education comes to be understood as a lifelong pursuit new institutional accommodations are likely to occur.[7] In addition, new demands from existing jobs are likely to create a continous circulation through the education industry; some professions have already begun to adopt "continuing education" requirements in some regions.

WORKER ATTITUDES

The workplace in America has undergone shifts in employment from manufacturing and manual occupations to service, technical and professional occupations, and, most recently, to the so-called information occupations. Theoretically, American industry has available to it the best-educated work force in the world. That work force appears to be committed to work and its importance. A general profile emerges of the most- and least-satisfied sectors of the labor force:[8]

Most Satisfied	Least Satisfied
Middle-aged or older	Under 30 years old
White	Black
Graduate education	Some high school through college degree, especially if overeducated for jobs
Professional/managers/ administrators	Unskilled laborers or operatives.
	Low income (under $10,000)

A large number of individuals who are motivated to work are dissatisfied with employment that blocks their strivings for self-fulfillment, and which does not fit their work ethic. The evidence from studies indicates, however, that unfulfilling work stimulates escapist leisure, rather than self-developing priorities. Just how to bring out the best performance in the

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[7]Richard E. Peterson and Associates, Life Long Learning in America, Washington, D.C.: Jossey-Bass Publishers, 1979.

[8]Joint Economic Committee, Human Resources and Demographics, November 1980.

American worker is a present and future challenge. Hand-in-hand with changing technology then are changing needs to deal with worker attitudes, such as greater worker participation, and a shift toward greater labor and management cooperation.

OTHER DEMOGRAPHIC QUALITIES

Alcoholism, a disease of significant proportions affecting the work force, affects nearly 6 percent of the civilian work force.[9] The cost to the economy in lost production has been estimated at nearly $28 billion, of which two-thirds is attributed to absenteeism. In addition, health and medical costs are increased an estimated $18 billion annually.

[9] "The Alcoholism Report", J S Reports, Vol. X no. 8, February 1982, Washington, D.C.

THE STRUCTURE OF EMPLOYMENT

Nine out of ten new jobs created during the 1970s were in the service and trade sectors. Today, services account for more than two-thirds of all jobs in the economy compared to 60 percent in 1969 and less than 55 percent in 1959. The share of employment in the goods-producing industries is the inverse, or slightly less than one-third. In 1969, manufacturing employment accounted for 40 percent of the total and in 1959 slightly more than 45 percent. During the 1970s, the rapidly expanding industries, such as retail trade insurance and professional services, attracted generally higher proportions of women and young employees.

The established trend towards services and the "information" economy requires a better-trained and increasingly productive work force (see Table 5).

During this period, consumer spending patterns shifted from nondurable goods to services and durable goods, which contributed to service industry growth. Unlike the service sector, however, employment in durable goods manufacturing did not increase as sharply in response to consumer demand, largely due to productivity improvements and less expensive, higher quality imported goods.

A HIGH-TECHNOLOGY ECONOMY

Two major factors are likely to aid the shift towards a high technological economy. First, robotization and gradual adaption of flexible manufacturing systems, and, second, office automation. The former will alter the the present content and types of manufacturing jobs available while the second will greatly affect the white collar, middle-management worker.

According to the National Bureau of Standards, the industrial robot population in the United States could be as high as 30 times that of the 3,000-plus units in use in 1979.[10] Today Japan is the world's leader with nearly five times the number of robots on line as the United States. It becomes more and more apparent that the adaptation of flexible robotics will do for manufacturing during the next 20 years what mechanization did for agriculture in the past 80.

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[10]National Bureau of Standards "An Overview of Artificial Intelligence and Robotics V.II-Robotics. Washington, D.C. U.S. Department of Commerce March 1982 [NBSIR 82-2479].

TABLE 5

A SAMPLE OF THE CHANGED COMPOSITION OF AMERICA'S WORK FORCE

:tor	1940	1980	Percent Change
Agriculture	9,540,000	3,310,000	-65.3%
Construction	1,311,000	4,399,000	235.5
Finance*	1,485,000	5,168,000	248.0
Government			
Federal	996,000	2,866,000	187.7
State, local	3,206,000	13,383,000	317.4
TOTAL	4,202,000	16,249,000	286.7
Manufacturing	10,985,000	20,300,000	84.8
Mining	925,000	1,020,000	10.3
Services/	3,665,000	17,901,000	388.4
Transportation, public utilities	3,038,000	5,143,000	69.3
Wholesale, retail trade	6,750,000	20,386,000	202.0
Nonagriculture: TOTAL	32,361,000	90,564,000	235.5

*Includes insurance and real estate.
/Includes personal and business.

SOURCE: U.S. Department of Labor, Bureau of Labor Statistics, Washington, D.C.; calculated in the New York Times, May 1982.

Automation will spread beyond manufacturing to service industries--communications, banking, insurance--and will affect information pushers and handlers at both clerical and managerial levels.

Demographic factors suggest industry directions. During the 1980s there will be approximately 33 percent more family heads in the 24-to-44 age bracket, so that by 1990 it is projected that there will be 87 million households, a 16 percent increase over 1980. As the older population increases in size, the demand for health care and related services will expand.

Tec[illegible]al changes particularly in telecommunications suggest mas[illegible] growth in new employment in new types [illegible] industries. The information society [illegible]th its core ir[illegible] computer industry will affect all aspects of industr[illegible]l lif[illegible] The interconnection between computers and telecommunication as well as the interconnection between computers and machines, suggests a radical change ahead for both service and manufacturing industries.

Based upon productivity improvements in U.S. agriculture, America is now the leading producer of agricultural goods in the world, with the lowest proportion of its work force of any major industrialized country occupied in agriculture. The advent of automated manufacturing systems can herald the same state of affairs for U.S. manufacturing, if economic and technological change is not hampered by an ill-trained, insufficiently educated work force.

The growth rate in the ten most rapidly growing job categories between 1978-1990 are noted below:[11]

	Growth Rate
Data processing machine mechanics	147%
Paralegal personnel	132
Computer systems analysts	107
Computer operators	88
Office machine services	80
Computer programmers	74
Aero-astronautic engineers	70
Food preparation (fast food)	69
Employment counselors (interviewers)	67
Tax preparers	65

[11]Max Casey, "Occupational Employment Growth Through 1990," Monthly Labor Review, August 1981, p. 48.

A POSITIVE RESPONSE TO STRUCTURAL SHIFTS AND OCCUPATIONAL CHANGES

The broad changes in the industrial structure of the United States from agriculture to manufacturing and from manufacturing to services tell only part of the story. Patterns of employment in specific occupations have changed, making the growth industries of yesterday the declining industries of today. Obviously, forecasts of the larger changes are more likely to be valid than are attempts to identify coming changes in detail or for specific occupations.

In a June 1982 hearing of the Joint Economic Committee, it was claimed that the need in the United States for skilled employees is urgent today and not being met. Estimates are that:

- more than 250,000 will be needed for jobs in electronics;
- about 240,000 openings exist for machinists who "make" machines;
- about 200,000 robots used by 1990 will generate millions of jobs;
- fibre optics will revolutionize information transmission; and
- genetic engineering will grow in drugs, farming and medicine.

Yet there is a paramount need to minimize the hardship of displacement for workers in declining industries. There is strong debate over whether these displacements should be handled by government programs, which in any event are ill-equipped to handle large-scale dislocations involving tens of thousands of workers, or whether to focus efforts on maintaining a strong, overall rate of economic growth.

In many European countries, particularly France, governments worry that if they fail to "manage" and anticipate the coming changes caused by the technology, millions will be jobless, resulting in social and political chaos.

New technology makes many industrial labor skills obsolete. In the automotive industry, for example, many laid-off workers in all levels of production from steel fabrication to car makers will not get their old jobs back. Further, tomorrow's hi-tech work force must bring special training to jobs.

The pace of technological change and pressures from foreign competitors, suggest a need for a systematic review of national and state policies relating to education and the work force. For example, government tax incentives now strongly favor "capital" over "labor" as a means of encouraging productivity growth--in 1981, training expenditures of U.S. firms amounted to about $300 per worker as compared with $3,300 per worker in capital investment.[12] A positive response is needed, across five basic categories:

- new entrants to the work force;
- remedial training for the disadvantaged;
- retraining for displaced workers;
- retraining and upgrading education of existing workers; and
- advanced education and training for critical technical skills.

New entrants to the work force

For the United States, a present problem and future crisis is the decline in technical education and the failure of many students to acquire basic "scientific literacy." Half of all high school graduates do not study math or science after the tenth grade, thus disqualifying themselves for computer and other hi-tech jobs.[13]

Remedial training

A first step for the education industry is the reduction of "functional illiterates" in the work force (or potential work force). The Education Commission of the States has found that the number of students lacking computational and writing

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[12]If the work force is 110,000,000 (October 1982) and gross domestic investment is $330 billion, then capital expenditure per worker is $3,300. Annual training expenditures, as estimated by the American Society for Housing and Development, amounts to about $30 billion. See: Pat Choate, "Retooling the American Workforce," Northeast-Midwest Institute, Washington, D.C., 1982.

[13]Roy Forbes et al., "The Information Society: Will our High School Graduates be Ready?" Denver: Education Commission of the States, 1982.

skills could increase to the point where in 1990 from 40 percent to 80 percent of high school graduates will not have skills essential to employment in the labor force. And, as noted earlier, one in five adults is functionally illiterate.

Retraining for displaced workers

Numerous federal programs have been created to assist workers, the largest of which is the $1.6 billion Trade Adjustment Assistance program created in 1980. Yet only a small fraction of that amount was devoted to retraining.

Upgrading worker education levels

Current expenditures by industry for corporate education and training are about $35 billion annually, spent almost entirely by large firms. Union expenditures have not been accurately measured. A so-called "human" investment tax credit is being proposed as one means of encouraging both large and small firms to upgrade worker skills.

Training for critical technical skills

In many technical areas, the shortage of trained workers is a barrier to meeting both national defense needs and domestic economic requirements. A major commitment to investment in human capital through education and training is needed if America is to build an adequately trained work force for the jobs of tomorrow.

CHAPTER THREE: THE FEDERAL ROLE IN POSTSECONDARY EDUCATION

BACKGROUND

The federal government has had a long history of interest and involvement in higher education, but, until 1965 with the enactment of the first Higher Education Act, it had no specific policy or role in relation to higher education. And, in fact, many analysts would say that the Higher Education Act of 1965 was not created to formalize a federal role toward higher education per se, but to meet other national priorities.

Since the Founding Fathers debated whether to give the federal government the responsibility for founding a national university in the Constitution and finally decided against it, the role of the federal government in higher education has been a topic for debate. The first six presidents of this country favored the founding of a national university, and several bills were sent to Congress, but never passed.[1] Interest in a national university waxed and waned until the 1930s, but never came to fruition. The only national universities that were ever formed were the military service academies,

[1]John S. Brubacker and Willis Rudy, Higher Education In Transition. Revised and enlarged edition. (New York: Harper & Row, 1968), p. 225.

starting with the founding of West Point in 1802 and culminating with the establishment of the Air Force Academy in 1955. However, when the Military Academy at West Point and the Naval Academy at Annapolis were founded, they were little more than secondary schools, and it was not until the twentieth century that they were able to achieve college-level accreditation.[2] Even the founding of the early military academies was strongly debated, and legislation was passed only because these academies were established to train military officers, thus serving the federal responsibility of providing national defense.

[2] Ibid., pp. 227-29.

FEDERAL INFLUENCE IN HIGHER EDUCATION

Until 1965, the federal government did not have a specific role in higher education; instead it influenced the growth of higher education through its growing responsibilities in other areas. Thus, the primary federal role toward higher education was indirect, focusing on specific issues of national defense and security, agricultural development, and social welfare issues, including unemployment. Many of these activities were interpreted as the responsibility of the federal government under the "general welfare" provision of the Constitution. In most cases, higher education and later postsecondary education were the instruments, but not the fundamental purpose, of federal policy.[3]

The first major grants in higher education came from the sale and distribution of federal lands in the territories, beginning with the Northwest Ordinance in 1787 endowing public lands for public institutions of higher learning. In 1802, the Ohio Enabling Act established provisions of lands for higher education to new states. However, it was not until 1862 that a new form of federal financing came into being. This was legislation designed to improve training in the agricultural and mechanical arts--the first Morrill Act. In this Act, and in legislation which followed, the federal government used grants of money (categorical aid) to stimulate certain types of education to serve the national interest.

In the first case, grants-in-aid were given for agricultural training, agricultural research and agricultural extension through various pieces of legislation, starting with the first Morrill Act (1862), then the Hatch Act (1887), the second Morrill Act (1890), the Smith-Lever Act (1914) and the Bankhead-Jones Act (1935) (see "Federal Programs for Higher Education and Related Activities, 1787-1980," pp. 48-50.).

This series of federal legislation focused on agricultural development and nutrition (home economics) by stimulating and supporting the development of certain curricula. It also tied legislation concerned with land grant colleges to other national interests, mainly national defense (by requiring military training at all land-grant colleges) and certain types of educational activities.[4]

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[3]Advisory Commission on Intergovernmental Relations (ACIR), The Federal Role in the Federal System: The Dynamics of Growth (Washington, D.C.: ACIR, 1981), pp. 17-23.

[4]Brubacker and Rudy, Higher Education, pp. 230-33.

Other than the provision of public lands and growing appropriations for land-grant college, agricultural research and extension courses, the primary federal involvement in education until the Second World War was related to its concerns with national defense. It started with stipulations providing for military training at institutions supported through the provisions of the Morrill Act.

These training activities were formalized in the National Defense Act of 1920, which established a Reserve Officers Training Corps (R.O.T.C.) at schools, colleges and universities. The R.O.T.C. and similar corps of other military branches have been responsible for the training of hundreds of thousands of officers since these programs began.[5]

During the First World War, in order to avoid further drops in college enrollment in technical and medical education, college deferments were established. This practice grew into the Student Army Training Corps which enabled officers to continue their college education until drafted. During the Second World War, special contracts with hundreds of colleges and universities, both public and private, were made by setting up agreements with the Army and Navy for specialized training programs. Concurrent with training programs came a federal interest in research and development which accounted for a growing federal influence at colleges and universities across the country.[6]

One new expansion of the federal involvement in higher education grew out of the Great Depression, when payments were made to students that helped them remain in college. With the growth of social legislation during the New Deal era, the National Youth Administration (NYA) program provided a model for further federal involvement in education, exemplified by student aid payments today. The purpose of the NYA program was to provide work-employment assistance to students at colleges and universities during a period of national emergency. It set a precedent: instead of grants-in-aid made for specific programs, payments were given to individuals.[7] From 1936 to 1943, $93 million was spent on 620,000 students in colleges and universities. The money was dispersed through the institutions to the students, and then returned to the institutions by students paying for college expenses, much the same way as the major disbursements for the Basic Educational Opportunity Grants are made today.[8]

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[5]Ibid., pp. 231-33.

[6]Ibid., p. 232.

[7]ACIR, Federal Role, p. 17.

[8]Brubacker and Rudy, Higher Education, p. 235.

The NYA legislation primarily served national purposes other than higher education. In fact, the next major legislation to serve individuals, the Serviceman's Readjustment Act of 1944, (the G.I. Bill), although as responsible as the Morrill Act for changing the terrain of postsecondary education, also was not enacted as higher education legislation. The major purpose of the Act was to help the economy adjust to the influx of veterans returning from the war and to thank veterans for their service. Although other G.I. Bills have been passed since 1944, they have not been as comprehensive as this original legislation, which by 1960, had assisted 3.5 million veterans to gain some form of postsecondary education.[9]

One of the outgrowths of the G.I. Bill was the loans provision to construct college dormitories under the Housing Act of 1950 facilitating the housing of the many students that resulted from increased enrollments. By 1955, the interest on these loans was federally subsidized. Several bills for construction of classroom and instruction facilities at colleges and universities did not pass during the 1950s because many members of Congress were opposed to direct aid for higher education.[10]

During this same period, the federal government became heavily involved in funding research at universities. Because of the need for military research during the Second World War, the federal govenment had increased its investment in research and development (R & D) activities, primarily at colleges and universities. Again the purpose for research was in the interest of national security, not to strengthen the nation's colleges and universities.

Before the Second World War, the federal government supported research in agriculture and some health programs which accounted for 15 percent of the national research investment at universities. Massive federal investments of approximately $3 billion during the war, especially in military research, accounted for 80 percent of the nation's R & D investment.[11]

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[9]Alice Rivlin, The Role of the Federal Government in Financing Higher Education (Washington, D.C.: Brookings Institution, 1961), p. 61.

[10]ACIR, Federal Role, p. 14.

[11]Ibid., p. 14.

Following the war, the federal government continued to invest in basic research, particularly in the sciences. Several institutes were created, such as the National Institutes of Health and the National Science Foundation, to move the emphasis from military and defense-related areas to basic research. By 1960, the federal government still funded about two-thirds ($750 million) of the research and development activities at colleges and universities.[12] By 1979, although the proportion of federal support of research at colleges and universities remained about the same, the bill was approximately $3.6 billion. R & D slowed down from 1968 to 1974, and then grew slowly throughout the rest of the 1970s, at an average rate of 4 percent per year.[13]

Although research and development activities were funded to meet national priorities in various areas and not to provide direct support to colleges and universities, with two-thirds of the research activities at the nation's universities coming from federal funding, many institutions have become dependent in these fields, particularly in medical and scientific programs. Many observers of the federal scene agree that such federal investments have affected whole areas of scientific inquiry as well as "the balance of power and resources within institutions of higher learning."[14]

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[12]Rivlin, Role of Federal Government, p. 24.

[13]National Science Foundation, Science Indicators 1980.

[14]ACIR, Federal Role, p. 15.

FEDERALLY FINANCED PROGRAMS

It was not until the end of the 1950s that the federal government became interested in education itself. During the 1940s there was a growing interest in expanding the federal role to education itself, caused by the growing costs of education and the increased G.I. enrollments. Furthermore, by this time, both elementary and secondary education had been accepted as a right for all citizens. By 1950, 50 percent of students entering high school were graduating, and increasingly larger numbers of students wanted a postsecondary education. In 1946, in response to these concerns, President Harry S. Truman appointed a commission, chaired by George F. Zook, president of the American Council on Education. The Commission's report, Higher Education for American Democracy (1947), stated that every American ought to be permitted to pursue a postsecondary education up to his capacity. The Commission recommended that enrollment in higher education should be doubled by 1960, that the public community college system should be expanded to provide universal accessibilit to higher education, and that federally funded college scholarship programs and federal aid for the construction of facilities should be provided.[15] The Commission's report resulted in much discussion and controversy, particularly in the areas of public versus private institutions, and denominational and racially segregated colleges--but no action.

In 1956, President Eisenhower appointed a Committee on Educaton Beyond High School whose recommendations were not as far reaching as the Truman Commission's. In 1957, after the Soviet Union launched its space program with Sputnik, higher education again became a national priority for national security reasons. This led to the passage of the National Defense Education Act (NDEA) in 1958 which included some of the recommendations of the Eisenhower Committee, and set the stage for further education legislation. NDEA established the National Defense Student Loan (NDSL) program which provided low-interest loans to needy students. This was landmark legislation because it provided aid to nonveterans on the basis of need. It also provided for graduate fellowships in science, mathematics and foreign languages. During the Kennedy Administration, this legislation was followed by the Health Professions Educational Assistance Act (1963) and the Higher Education Facilities Act (1963). In 1964, in the Amendments to the Higher Education Act, more subjects qualified for graduate fellowships, and that year the College Work-Study program was

[15]Brubacker and Rudy, Higher Education, p. 241.

started under the Economic Opportunity Act. Although NDEA was passed as a temporary measure, it set the stage for federal policy in providing assistance directly to students to complete their postsecondary education, and led directly to further landmark legislation, the first Higher Education Act of 1965. Two movements were at work: the long tradition of federal grants-in-aid to higher education institutions to meet national priorities in research and national security, and, with civil rights legislation, the growing realization that opportunity was unequal throughout the states. Much federal legislation throughout the 1960s was designed to break down the barriers to equal opportunity.

Throughout this period, most education legislation still was passed with the special purpose of national defense. The first bill that was passed for "national defense reasons" was the Higher Education Facilities Act of 1963. The expansion of special-purpose aid provided opportunity for the move toward more general purpose aid to achieve the goal of equal opportunity.[16]

HIGHER EDUCATION ACT OF 1965

Most observers agree that the major piece of legislation in higher education is the Higher Education Act of 1965. President Kennedy had proposed an omnibus education package in 1963 combining a variety of categorical programs including scholarships for undergraduates, a work-study program and aid to libraries. However, these programs were separated by Congress, and some were passed as individual pieces of legislation. It was not until the Johnson administration proposed a combination of separately legislated programs, including some additional programs, that the first higher education omnibus legislation was passed.

Discussing the political aspects of policy making, education analysts Thomas Wolanin and Lawrence Gladieux noted, "The basic legislative charter of higher education policy is the Higher Education Act of 1965. The 1965 act is clearly distinguished by the breadth of the programs it initiated and by the size of the federal commitment it represents."[17] When

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[16]Lawrence E. Gladieux and Thomas Wolanin. Congress and the Colleges (Lexington, Mass.: D.C. Heath and Co., 1976), p. 11.

[17]Thomas Wolanin and Lawrence Gladieux, "The Political Culture of a Policy Arena: Higher Education," in Matthew Holden, Jr., and Dennis L. Dresang, eds. What Government Does (Beverly Hills: Sage, 1975), p. 180.

the Act was passed, its centerpiece was grants to students with exceptional financial need called Educational Opportunity Grants, "the first scholarships for undergraduates." All in all, the consolidated programs, which included the National Direct Student Loan, the College Work-Study Loan, teacher fellowships, library grants, the Title III program for developing institutions, and several others, truly "represented a milestone in the history of American higher education."[18] The total of eight titles authorized federal appropriations of $840 millior to higher education institutions and students.[19]

Following the tradition set by the National Youth Service and the G.I. Bill, the Higher Education Act put into place a series of student assistance programs that were to become the focus of continuing federal policy throughout the 1970s. National priorities during this period focused on providing equal opportunities to citizens who experienced disadvantages because of race, disability or low income. A principal aim was to provide opportunity for all citizens to participate fully in national life.

1972 AMENDMENTS

The 1972 Amendments to the Higher Education Act of 1965 was another turning point in terms of federal grants-in-aid to education. The debate focused on whether to give aid to institutions or students, with Congress deciding that the clear federal role was to provide need-based assistance programs for students to attend the postsecondary institutions of their choice. The major piece of legislation in that Act created the Basic Educational Opportunity Grants (BEOGs). Although most of the categorical aid programs for institutions were retained in the amendments, Congress decided in its debates that institutional finances were primarily the responsibilities of the states. The federal responsibility was to support equal opportunity for all citizens.

Therefore, the Basic Educational Opportunity Grants (BEOGs) provided base funding to low-income students to assure them access to postsecondary education institutions along with other grant, work and loan programs already established. Categorical programs to institutions were regarded as ways in which the federal government could fulfill certain national needs. "Congress decided on a program that would help institutions only in such a way as to advance the purpose . . .

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[18]Brubacker and Rudy, Higher Education, pp. 241-42.

[19]ACIR, Federal Role, p. 23.

of the act, equal opportunity for higher education. The responsibility for general support of institutions, it was decided, should continue to rest with this states."[20]

Throughout the 1970s, the expansion of need-based student assistance remained the emphasis of federal legislation and federal appropriations. Three other new programs, added in the 1972 Amendments, deserve mention: the State Student Incentive Grant Program (SSIG) which provided matching federal and state funds for student assistance grants; the National Institute of Education (NIE) to provide for basic and applied research in education; and the Fund for the Improvement of Postsecondary Education (FIPSE), to provide funds for innovation in postsecondary education.

1976 AMENDMENTS AND MIDDLE INCOME STUDENT ASSISTANCE ACT

The 1976 Amendments reaffirmed the BEOGs and other student aid programs, and provided legislation to assure better consumer information for students.

In 1978, another major piece of postsecondary education legislation was passed. In response to massive pressure to pass tuition tax credits for middle-income families, Congress developed and President Carter supported, the Middle Income Student Assistance Act (MISAA), which expanded eligibility of middle-income families to the Basic Educational Opportunity Program and significantly expanded its funding. It also lifted all income requirements from the Guaranteed Student Loan (GSL) program, and opened access to this program for all students regardless of need.

1980 AMENDMENTS

The 1980 Amendments to the Higher Education Act continued the expansion of federal student assistance to assure access to postsecondary education. The Middle Income Student Assistance legislation was reaffirmed, a parent loan program was added, and the Basic Grant Program (renamed Pell Grants after Senator Claiborne Pell of Rhode Island) was expanded. For the first time since 1972, the stipulation that the Pell grant could only fund up to half the cost of attendance was changed to increase the appropriations of Pell Grants and other grant, work and loan programs to the point that the Pell Grants could cover up to 70 percent of the cost of postsecondary education.

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[20]Gladieux and Wolanin, Congress and the Colleges, pp. 225-26.

During the consideration of the 1980 Amendments, inflation was increasing, and the cost of the GSL program was rising precipitously because of interest payments to lenders. In order to address the issues of federal student aid and its increasing costs, the National Commission on Student Financial Assistance was created by the 1980 Amendments to study student loan programs, the financing of graduate education and other questions concerning the balance among the many postsecondary student assistance programs.

President Reagan's proposed New Federalism called for a consolidation of the federal role in education. The Administration would rely on self-help in the form of family contributions, student savings, work, loans and grants to determine levels of responsibility in providing for student financial need. In terms of postsecondary education, this meant a consolidation of the grant programs--the Pell grant program contains proposals for additional funding; however, neither the State Student Incentive program nor the Supplemental Educational Opportunity Grants (SEOG) program would be funded--and on net balance the consolidated grant funds would be greater.

Further, as part of the 1983 budget proposals, the College Work-Study programs are increased significantly. In any event, the question of what is or should be the federal role in postsecondary education has been reopened for the first time since the 1972 Amendments.

From 1972 to 1980, federal outlays to students in postsecondary education increased about 128 percent (see Table 1). The major part of this increase came from federal student assistance programs administered by the U.S. Office of Education (now the Department of Education). Appropriations for these programs grew from $943 million in 1972 to $5.5 billion in 1980. However, the average grants to individual students only rose 50 percent during this period, when the Consumer Price Index rose by 98 percent. During this same period direct expenditures to institutions decreased in real terms by 34 percent, while research and development expenditures increased in real terms by 32 percent.

Although the federal government continued its role in research and development, and expanded its role in providing access to postsecondary education, the primary financing of postsecondary education still came from the states, mainly through their maintenance of the public system of colleges and universities (see Table 2 and Figure 1).

TABLE 1

FEDERAL OUTLAYS TO POSTSECONDARY EDUCATION, FISCAL YEARS 1975 and 1980 (millions of dollars)

Program	1975	1980 (est.)	% Change 1972-80 (1980 dollars)	% Change 1972-80 (1972 dollars)
DIRECT EXPENDITURES TO STUDENTS				
U.S. Department of Education Student Aid Programs (BEOG, SEOG, SSIG, NDSL, CWS and GSL)	$ 943	$ 1,587	$ 5,505	
Social Security Education Benefits	521	840	1,565	
Veterans Benefits	1,436	3,479	1,757	
Other Student Assistance	102	65	45	
SUBTOTAL	$3,002	$ 5,971	$ 8,872	196%	50%
DIRECT EXPENDITURES TO INSTITUTIONS				
Programs for disadvantaged students and developing institutions	$ 94	$ 180	$ 261	
Occupational and Vocational	132	137	226	
Military Academies	208	239	326	
Special Institutions	56	89	193	
Construction and Facilities	265	29	131	
Health Resources	456	662	370	
Scientific Training Programs	328	298	266	
Other Institutional Assistance	253	481	275	
SUBTOTAL	$1,792	$ 2,115	$ 2,048	13	-34
RESEARCH AND DEVELOPMENT	$1,671	$ 2,228	$ 3,827	129	32
TOTAL	$6,465	$10,314	$14,747	128	18

Note: Between 1972 and 1980, the Consumer Price Index increased 98 percent and the Higher Education Price Index, a special measure of the behavior of costs of higher education institutions developed by the National Institute of Education, increased 73 percent. In order to adjust for inflation and calculate the change in real terms, the CPI was used in the case of direct expenditures to students and tax expenditures and the Higher Education Price Index in the case of expenditures to institutions and for research and development.

Note: Based on data analysis derived from the Budget of the United States Government and the Special Analyses of the Budget, 1974-1980, as well as analysis by the Economic and Finance Unit, American Council on Education.

SOURCE: Reprinted from Lawrence E. Gladieux, Janet S. Hansen with Charles R. Byce, The Federal Government, the States, and Higher Education: Issues for the 1980s (New York: The College Board, 1981) p. 7.

TABLE 2

SOURCES OF CURRENT FUNDS REVENUES FOR INSTITUTIONS OF HIGHER EDUCATION, BY LEVEL AND CONTROL OF INSTITUTION, FISCAL YEARS 1970 and 1980

Fiscal Year and Source	Public Institutions			Private Institutions		
	Universities	Other 4-Year	2-Year	Universities	Other 4-Year	2-Year
	Amounts, in Thousands					
1970						
Total	$ 8,217,088	$ 3,891,288	$1,868,257	$3,968,873	$3,848,982	$223,757
Government	5,124,088	2,397,883	1,450,529	1,333,178	538,767	14,820
Federal	1,972,228	428,174	104,538	1,253,768	475,722	12,008
State	3,133,323	1,808,481	795,803	78,249	44,496	2,175
Local	18,517	108,208	580,090	41,161	18,548	637
Private sources	253,088	48,987	7,883	337,045	427,156	28,493
Students	2,002,583	1,092,074	383,887	1,398,884	2,283,918	176,919
Tuition and fees	977,282	511,518	246,228	1,008,588	1,563,572	114,717
Auxiliary enterprises	1,025,301	580,558	121,688	390,326	720,338	62,202
Institutional[2]	832,408	151,346	33,747	732,771	387,151	8,524
1980						
Total	18,453,881	15,390,982	7,078,586	9,258,004	9,913,572	487,198
Government	9,488,808	9,707,425	5,276,763	2,768,188	1,572,486	43,234
Federal	2,587,183	1,987,058	488,295	2,514,887	1,288,817	27,848
State	6,829,588	7,520,942	3,623,330	178,223	214,808	11,308
Local	72,585	198,424	1,164,185	76,088	70,808	4,220
Private sources	534,182	314,518	30,817	778,488	1,083,782	49,127
Students	4,122,137	3,370,881	1,455,888	3,353,182	5,474,717	362,233
Tuition and fees	2,028,767	1,805,886	1,024,708	2,531,348	4,282,012	276,826
Auxiliary enterprises	2,082,370	1,564,965	431,190	821,822	1,485,706	85,407
Institutional[2]	2,197,783	1,358,388	258,386	2,358,192	1,588,587	32,606
	Percentage Distribution					
1970						
Total	100.0	100.0	100.0	100.0	100.0	100.0
Government	62.4	65.8	78.8	33.7	14.8	6.5
Federal	24.0	11.6	5.6	32.7	13.8	5.2
State	38.1	50.4	48.6	2.0	1.2	.9
Local	.2	3.0	31.7	1.1	.5	.3
Private sources	3.1	4.4	.4	8.2	11.7	12.8
Students	24.4	28.6	19.6	35.1	62.6	77.9
Tuition and fees	11.9	13.3	13.2	25.0	42.9	49.9
Auxiliary enterprises	12.5	15.7	6.5	10.1	19.8	27.1
Institutional[2]	10.1	4.3	1.8	18.9	10.9	3.7
1980						
Total	100.0	100.0	100.0	100.0	100.0	100.0
Government	57.7	63.2	75.2	29.8	15.9	8.9
Federal	15.8	12.9	7.0	27.1	12.8	5.8
State	41.6	48.8	51.6	1.9	2.2	2.3
Local	.4	1.3	16.6	.8	.7	.9
Private sources	2.9	2.0	.4	8.4	10.1	10.1
Students	25.1	22.0	20.7	36.1	55.0	74.4
Tuition and fees	12.3	11.8	14.6	27.2	43.0	56.8
Auxiliary enterprises	12.7	10.2	6.1	8.8	15.0	17.5
Institutional[2]	13.4	12.8	3.7	25.8	16.6	6.7

[1] Categories of current funds revenues were different in 1970 than they were in 1980. To develop comparable statistics for these two fiscal years, revenue categories were consolidated.

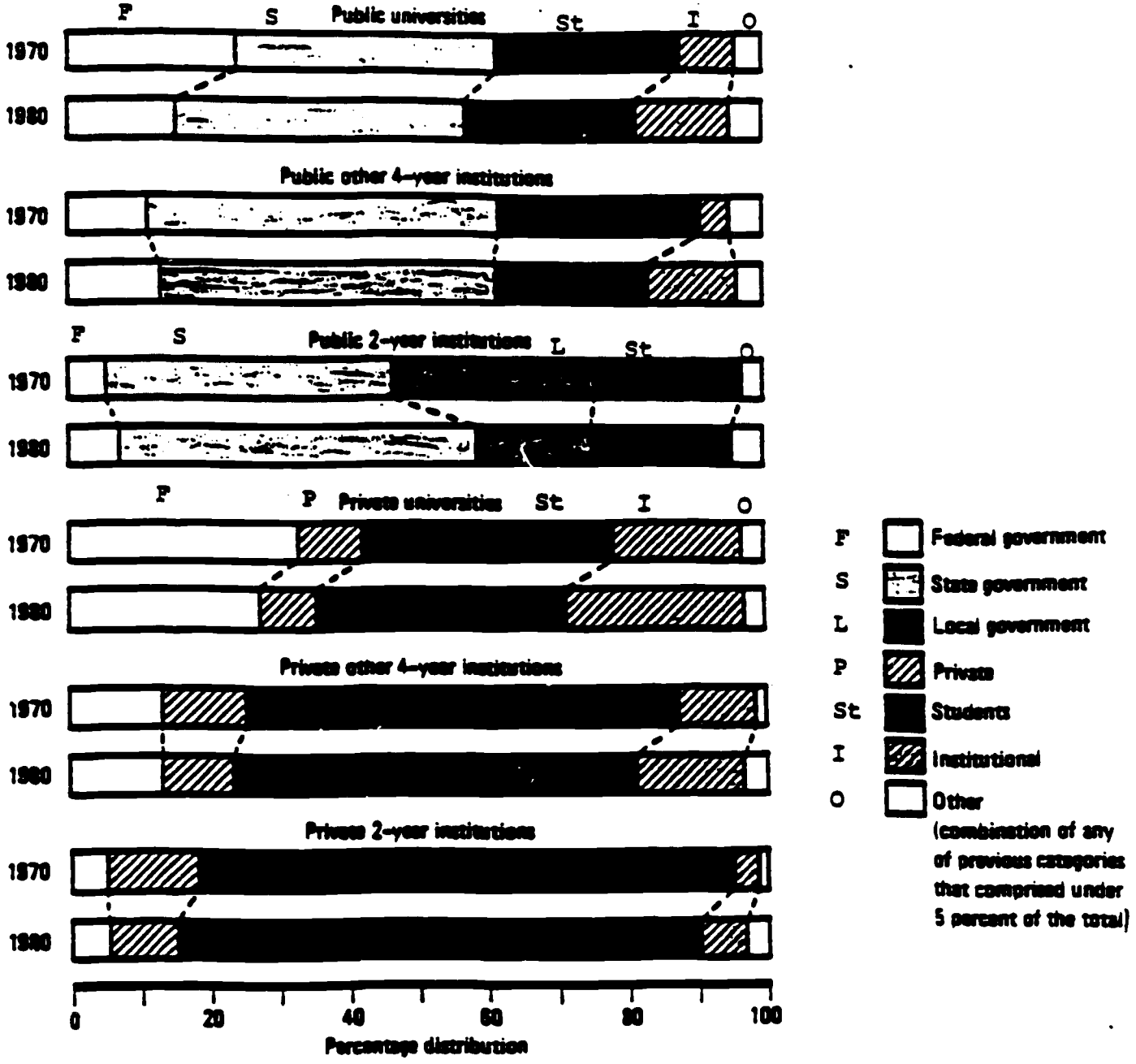
[2] Includes endowment income, sales and services of educational activities, sales and services of hospitals, and other sources.

Note: Details may not add to totals because of rounding.

SOURCE: Reprinted from U.S. Department of Education, National Center for Education Statistics (NCES), The Condition of Education, (Washington, D.C.: U.S. Government Printing Office, 1982).

FIGURE 1

DISTRIBUTION OF SOURCES OF CURRENT FUNDS REVENUES FOR INSTITUTIONS OF HIGHER EDUCATION



SOURCE: Reprinted from U.S. Department of Education, NCES, The Condition of Education, 1982, p. 149.

According to Gladieux and Hansen, in spite of broad federal support for students and certain types of institutions--the "developing institutions" which educate a high percentage of low-income and minority students--federal aid accounts for slightly more than a quarter (27 percent) of total public support of higher education. States put up 65 percent and local governments 8 percent of total public support. As Gladieux and Hansen observe:

> The broad historical delineation of federal and state roles persists in the early 1980s: The states are still primarily responsible for maintaining the structure of higher education, mainly through the maintenance of systems of public colleges and universities. The federal government provides particular kinds of support to meet perceived national objectives, without distinguishing for th most part between public and nonpublic recipients or this support. The federal government purchases services (research), fills gaps (whether in college library support, foreign language and area studies, health professions development, or undergraduate science curricula), and channels the bulk of its aid directly to students rather than to institutions, with the aim of removing financial barriers facing individuals who aspire to higher education.[21]

Thus the federal role in postsecondary education as it has evolved from the time of the Founding Fathers, still retains certain early characteristics: it is supplemental to the states, and federal policy is concerned with the support of education insofar as such support serves to meet national priorities. Historically the federal role has been to provide:

- for the provision and sale of public lands for educational purposes, to support agricultural training and research;
- for the support of military personnel and to maintain enrollments, particularly in certain fields to meet national security needs;
- support for research in the national interest; and
- equal opportunity to all citizens who qualify (for postsecondary education) regardless of race, income, geographic location or handicap under the "general welfare" clause of the Constitution.

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[21] Gladieux, Hansen with Byce, Federal Government, p.7.

The primary forms of payments have been to states, then to institutions for specific programs and, finally, starting with the G.I. Bill through payments to individuals.

FEDERAL PROGRAMS FOR HIGHER EDUCATION AND RELATED ACTIVITIES

1787-1980*

1787 Commencement of endowment of public institutions of higher education with public lands--Northwest Ordinance: "Schools and the means of education shall forever by encouraged."

1802 Ohio Enabling Act--established the provision of land grants and land scrip to new states under the statehood acts.

1802 Establishment of the first federal institution of higher education--U.S. Military Academy at West Point.

1862 The First Morrill Act--initiated federal policy of aid to states for agricultural and industrial education through land grants for colleges.

1867 Federal Department of Education established by Congress; later the Office of Education.

1887 Hatch Act--encouraged scientific investigation in agriculture.

1890 The Second Morrill Act--introduction of federal grants of money for college instruction in specified areas of learning.

1914 Smith-Lever Act--matching of funds for agricultural and home economics instruction through Agricultural Extension Service.

1935 National Youth Administration--employment for college students.

1935 Bankhead-Jones Act--increased support for land grant colleges.

1937 National Cancer Institute Act--provided fellowship grants.

1944 The Serviceman's Readjustment Act--G.I. Bill, educational aid for veterans.

1950 The National Science Foundation Act--promoted progress in science through scholarships and fellowships in fields of science.

1950 The Housing Act--low interest rates for loans to institutions of higher learning for building of housing facilities.

1952 National Science Foundation--fellowship program.

1954 Cooperative Research Act--authorized the Office of Education to conduct cooperative research with colleges, universities and state educational agencies.

1958 The National Defense Education Act (P.L. 85-864)--provided for graduate fellowships in science,, mathematics, foreign languages, counseling and guidance, and educational technology.

1963 Health Professions Educational Assistance Act (P.L. 88-129)--construction of facilities and student loans.

1963 Higher Education Facilities Act of 1963 (P.L. 88-204)--grants to all colleges, public and private, for improvement of facilities.

1964 The Civil Rights Act of 1964 (P.L. 88-452)--desegregation of the schools enforced and assisted.

1964 Economic Opportunity Act of 1964 (P.L. 88-452)--war on poverty through retraining and remedial education and other opportunities; college work-study program.

1964 Amendments to National Defense Education Act--extended and expanded to include areas of English, reading, history and geography.

1965 National Foundation for the Arts and Humanities (P.L. 89-209)--foundation to support humanities and the arts through grants.

1965 Higher Education Act of 1965 (P.L. 89-329)--aid to colleges, students and teachers.

1966 International Education Act (P.L. 89-698)--to provide a strengthening of American educational resources for international studies and research.

1967 Education Professions Development Act (P.L. 90-35)--to coordinate, broaden and strengthen programs for the training and the improvement of educational personnel.

1968 Higher Education Amendments of 1968 (P.L. 90-575)--extended an improved four major education acts and authorized six new programs.

1971 Comprehensive Health Manpower Training Act of 1971 (P.L. 92-257)--amended Title VII of the Public Health Service Act. Increased and expanded provisions for health manpower training and training facilities.

1972 Education Amendments of 1972 (P.L. 92-318)--established a National Institute of Education. Federal matching grants for state student incentive grants; the National Commission on Financing Postsecondary Education; State Advisory Councils on Community Colleges; a Bureau of Occupational and Adult Education and state grants for the design, establishment, and conduct of postsecondary occupational education; and the bureau-level Office of Indian Education. Amended current Office of Educaion programs to increase their effectiveness and better meet special needs. Prohibited sex bias in admissions.

1975 Harry S. Truman Memorial Scholarship Act (P.L. 93-642)--scholarships promoting public service education.

1976 Education Amendments of 1976 (P.L. 94-482)--reauthorized and amended major higher education legislation.

1979 Department of Education Organization Act (P.L. 96-88)--established the Department of Education.

1980 Education Amendments of 1980 (P.L. 96-374)--reauthorized and amended major higher education legislation.

SOURCE: Reprinted from ACIR, Federal Role, pp. 2-3.

CHAPTER 4: UNDERGRADUATE POSTSECONDARY EDUCATION*

EXECUTIVE SUMMARY

INSTITUTIONS AND ENROLLMENTS

As of 1980, nearly 11,000 institutions provided some form of undergraduate postsecondary education: 3,270 were colleges and universities, and 7,700 were noncollegiate postsecondary schools. Enrollments in noncollegiate schools reached 1.6 million in 1980, and 9.5 million undergraduates were enrolled in colleges and universities in 1981. In 1981, 38 percent of all college students attended two-year colleges, nearly all of them public two-year colleges.

During the 1970s, women achieved parity in college enrollments, but members of racial and ethnic minorities did not. In 1981, 52 percent of all college students were women. In 1980, approximately 10 percent of all college students were black and 4 percent were Hispanic; that year, blacks represented 12 percent and Hispanics represented 6 percent of the U.S. population.

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*Every effort has been made to obtain data on undergraduate education alone. However, in many instances (especially in the area of financing higher education), data are not available separately for undergraduate education. In those instances, data for all of higher education are used. The most recent data available in each case have been used. See also "Graduate and Professional Education," (Chapter Five), for specific data on that sector.

College students are older, on the average, than a decade ago; the median age for college students was 22.4 years in 1980. Enrollment shifts have occurred by region as well. In the southeastern portion of the United States, enrollments climbed more steeply than in other regions; public community college enrollments increased by 123 percent in the Southeast between 1970 and 1979.

Student preferences in college majors have also changed over the decade. Enrollments in humanities, social sciences and education have fallen, while enrollments and degrees awarded in business and engineering climbed sharply. A substantial number of students (over 350,000 in 1979) received diplomas for completing occupational curricula of at least one year.

FINANCES

Revenues to all colleges and universities totaled just over $58 billion in 1980. However, substantial differences in the dependence of institutions on a particular revenue source exist. Private institutions depend heavily on tuition, which in 1980 was 36 percent of private college revenues. State-supported public colleges received only 13 percent of their revenues from tuition in 1980, but received 46 percent of their revenues from state funds. Public two-year colleges obtain 68 percent of their revenues from state and local governments revenues; public universities obtain 42 percent of their revenues from these sources. Of all types of colleges and universities, private universities are most dependent upon federal funds (20 percent of their revenues in 1980). Voluntary support to higher education totaled nearly $4 billion in 1980.

The tuition gap between public and private institutions remains sizable: average annual tuition at four-year public colleges in 1981-82 was $706, while average tuition at four-year private colleges was $3,279. Tuition at private four-year colleges was 54 percent of total student costs, and tuition at public four-year colleges was 21 percent of total student costs.

Federal support for student aid has grown exponentially since 1965, from slightly more than $200 million to nearly $9 billion in 1980. In 1979, approximately one-half of all federal student aid recipients were minority group members: blacks received 30 percent of all federal student aid and Hispanics received 14 percent. In the same year, 76 percent of all dependent college students whose annual family income was under $6,000 received some form of federal student aid. In 1980, state funds provided approximately one billion dollars in student financial aid.

Colleges face fiscal pressures from many sources. Among the most severe fiscal pressures are faculty salary increases, the increasing number of part-time students, leveling state appropriations for public postsecondary education, deferred maintenance, and compliance with Section 504 of the Rehabilitation Act.

NUMBER AND TYPE OF INSTITUTIONS

In 1980, 3,270 institutions offered postsecondary education at both the undergraduate and graduate level. This figure includes 1,981 universities and four-year colleges and 1,289 two-year community colleges.[1] In addition to these traditional institutions of higher education, approximately 7,700 noncollegiate schools provided some form of postsecondary training in 1980.[2] Nearly all of these 11,000 institutions provide undergraduate education or training; according to the Carnegie Council on Policy Studies in Higher Education, only about 100 schools are focused exclusively on postbaccalaureate education.[3]

Although the number of all colleges and universities grew quickly during the 1960s, growth slowed during the 1970s increasing by 15 percent from 2,836 to 3,270 institutions by 1980. The number of colleges and universities had increased by 45 percent in the 1960s.[4] Despite the popular impression that a large number of colleges ceased operation during the 1970s, there was a net gain of 299 during the decade. Of the 135 colleges and universities that closed their doors between 1970 and 1979, 72 were four-year colleges or universities, and 63 were two-year colleges; 19 were publicly controlled and 126 were privately controlled.[5] The number of noncollegiate schools offering postsecondary education or training, however, declined somewhat during the 1970s. In 1973, the U.S. Office of Education's National Center for Educational Statistics (NCES) reported 8,846 such schools; the number fell to 7,700 in 1980--a decline of 13 percent.[6]

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[1]U.S. Department of Education, NCES, The Condition of Education, 1982, p. 136.

[2]Ibid.

[3]Carnegie Council on Policy Studies in Higher Education, A Classification of Institutions of Higher Education (New York: McGraw Hill, 1978).

[4]U.S. Department of Education, NCES, Condition of Education, 1978, p. 124; and 1982, p. 136.

Department of Education, NCES, Condition of Education, 1976, p. 188, and 1982, p. 136.

TWO-YEAR COMMUNITY COLLEGES

The most spectacular change in institutional numbers has occurred in the two-year community college sector. NCES reported 508 two-year colleges in 1960, there were 1,063 in 1970 and 1,289 in 1980--an increase of 109 percent between 1960 and 1970, and of 13 percent between 1970 and 1980.[7] Nearly all of the growth in the number of two-year colleges was in the public sector--310 in 1960,793 in 1970, and 949 in 1980 (an increase of 153 percent from 1960 to 1970 and of 20 percent from 1970 to 1980).[8]

FOUR-YEAR COLLEGES AND UNIVERSITIES

The number of four-year colleges and universities increased by 12 percent between 1970 and 1980, from 1,773 to 1,981.[9] Public four-year institutions increased by 8 percent, while the number of private four-year colleges and universities increased by 13 percent over the decade.[10]

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[7]U.S. Department of Education, National Center for Education Statistics, Digest of Education Statistics, (Washington, D.C.: U.S. Government Printing Office, 1981), p. 105.

[8]Ibid.

[9]Ibid.

[10]Ibid.

ENROLLMENTS

Enrollments in colleges and universities, which had increased so rapidly between 1960 and 1970, grew at a slower rate between 1970 and 1981. In 1960, about 3.6 million students were enrolled in all colleges and universities; by 1970, enrollments had more than doubled, with 8.5 million students attending colleges and universities.[11] By 1981, 12.4 million students were attending colleges and universities--an increase of 45 percent from 1970.[12]

UNDERGRADUATE ENROLLMENTS

Undergraduate enrollments increased at a somewhat higher rate between 1970 and 1981 than did overall enrollments. There were 5.8 million undergraduates enrolled in colleges in 1970, and 9.5 million students in 1981, an increase of 64 percent. These students represented 73 percent of all college students in 1970, and 77 percent of all college students in 1981.[13]

ENROLLMENT BY TYPE AND CONTROL*

Enrollment shifts by type and control* of institution demonstrate the changes in the higher education enterprise between 1970 and 1981. (Because data on undergraduates are not available separately for 1970 by type and control, total enrollments will be used). In 1970, 5.8 million students, or 73 percent of all students, attended public colleges and universities.[14] By 1981, 78 percent of all students attended public colleges and universities. Similar shifts are evident

*"Type" refers to two-year or four-year college or university; "control" refers to whether a college is public or private.

[11]U.S. Department of Education, NCES, Digest of Education Statistics, 1966, p. 64; and 1971, p. 62.

[12]"Fact File," Chronicle of Higher Education, July 14, 1982, p. 10.

[13]U.S. Department of Education, NCES, Digest of Education Statistics, 1971, p. 62; and "Fact File," p. 10.

[14]U.S. Department of Education, NCES, Digest of Education Statistics, 1971, p. 62.

by type of institution as well.[15] In 1970, 26 percent of all students attended two-year community colleges.[16] By 1981, 38 percent of all college students attended two-year colleges, nearly all of which were public institutions.[17]

ENROLLMENT BY GENDER

Enrollment shifts by gender between 1970 and 1981 demonstrate that women achieved more than parity. In 1970, they represented 41 percent of all college students; in 1981, they represented 52 percent. The proportion of women enrolled in college may continue to increase; in 1980, 53 percent of the freshmen were women.[18]

ENROLLMENT BY IN-SCHOOL STATUS

Shifts in enrollment patterns from predominantly full-time students to larger proportions of part-time students have affected most colleges and universities, especially two-year colleges. In 1970, slightly more than two-thirds of all students were enrolled full time in colleges and universities. As the decade progressed, a larger proportion of students enrolled part-time, and by 1981, full-time student enrollment had declined to 58 percent of all students. Although this overall figure represents a substantial increase in part-time students, the figures for public community colleges are even more striking. In 1981, 65 percent of all students enrolled in public two-year colleges were enrolled part-time.[19]

MINORITY GROUP ENROLLMENT

Changes have occurred in the racial and ethnic composition of college enrollments as well, although minorities are still underrepresented in colleges in proportion to their presence in the total population. In 1970, 90 percent of

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[15]"Fact File," p. 10.

[16]U.S. Department of Education, NCES, Digest of Education Statistics, 1974, p. 76.

[17]"Fact File," p. 10.

[18]U.S. Department of Education, NCES, Digest of Education Statistics, 1971, p. 62; and "Fact File," p. 10.

[19]Ibid.

all college students were white, 6 percent were black, and not quite 2 percent were of Spanish origin. The Census Bureau found that in 1980, nearly 81 percent of all college students were white, 9.8 percent were black, and 4.3 percent were of Spanish origin. (The remaining 5 percent are members of other minority groups). In 1980, blacks represented about 12 percent of the population; persons of Spanish origin accounted for approximately 6 percent of the population.[20]

ENROLLMENT BY AGE

College students tended to be older, on the average, in 1980 than in the 1970s. In 1970, the median age of college students was 20.9, and in 1980 the median age was 22.4.[21]

The proportion of college students over age 35 has increased significantly over the last decade--from 8.6 percent or 791,200 students in 1972 (the first year in which the Census Bureau collected this information) to nearly 11 percent or 1.3 million students in 1980. Enrollments of students over age 35 peaked in 1979, at 1.4 million, when 12.3 percent of all students were 35 or older.[22]

ENROLLMENT BY REGION

Shifts in undergraduate enrollments have also occurred on a geographic basis. Although enrollments increased in all regions of the country between 1970 and 1979, the largest increases were registered in the southeastern United States. For example, headcount enrollment at public institutions in the Southeast increased by 123 percent in public two-year colleges, 28 percent in public universities, and 43 percent at other four-year public colleges between 1970 and 1979[23] (see Figure 1).

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[20]U.S. Department of Education, NCES, Condition of Education, 1976, p. 228.

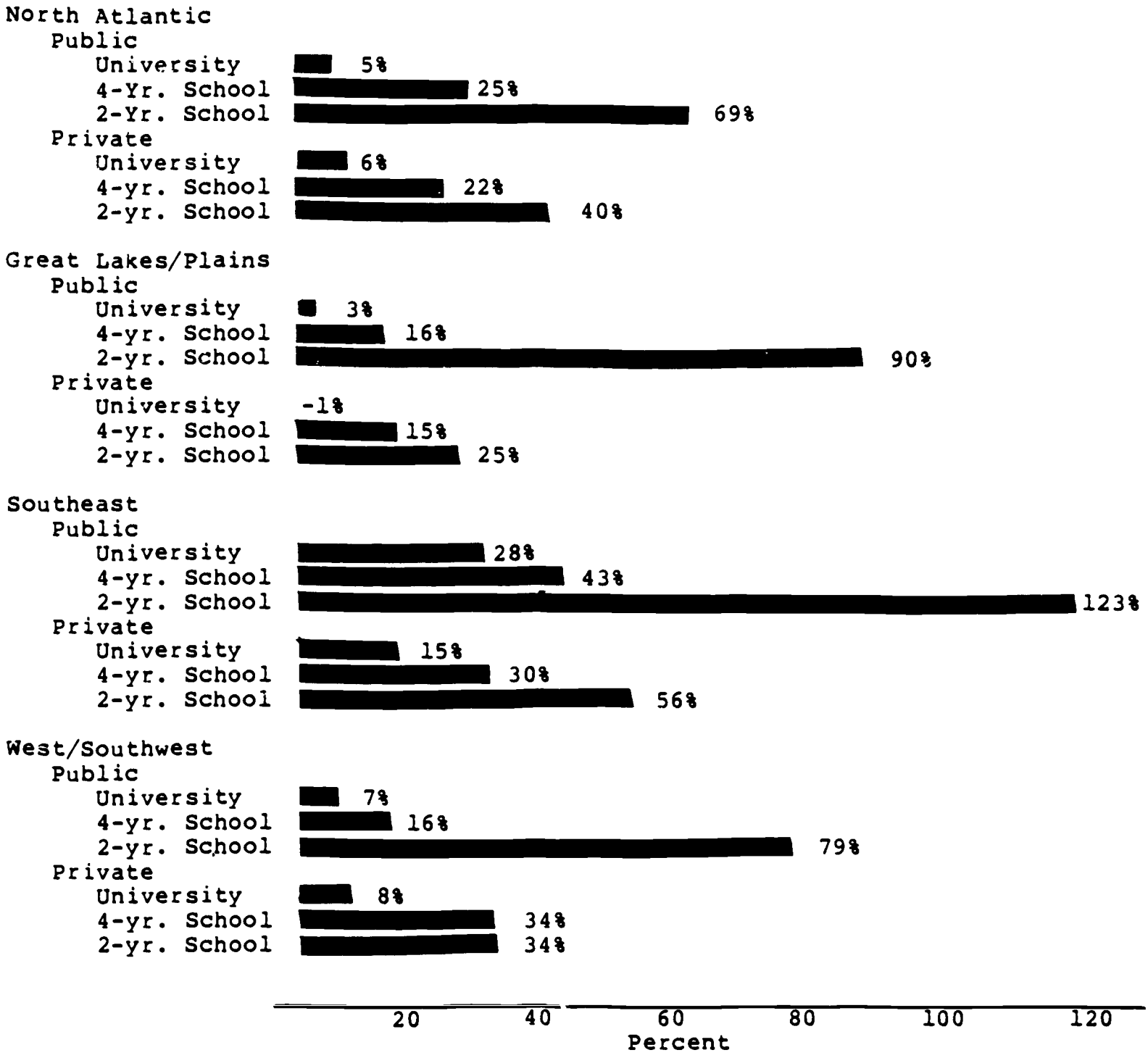
[21]U.S. Bureau of the Census, "School Enrollment," Current Population Reports, Series P-20, No. 362 (Washington, D.C.: U.S. Government Printing Office, 1981), p. 4; and U.S. Bureau of the Census, "Population Profile of the United States," Current Population Reports, P-20, No. 363 (Washington, D.C.: U.S. Government Printing Office, 1981), p. 55.

[22]Bureau of the Census, "School Enrollment," p. 6.

[23]American Council on Education and National Center for Education Statistics (ACE/NCES), Trends and Patterns: A Study of Enrollments in Higher Education, 1970-1979. (Washington, D.C.: American Council on Education, 1981), p. 21.

FIGURE 1

PERCENTAGE CHANGE IN TOTAL HEADCOUNT ENROLLMENT, BY TYPE AND CONTROL AND BY REGION, 1970-1979



SOURCE: ACE/NCES, Education Statistics, Trends and Patterns: A Study of Enrollments in Higher Education, 1970-79, p. 21.

Enrollments shifted between states and regions as well as within regions. Between 1969 and 1979, enrollments mirrored the population shifts to the South and West.

ENROLLMENT BY ACADEMIC PROGRAM

During the last decade, undergraduate enrollments and degrees awarded have changed by academic major as well. For example, from 1970 to 1979 the number of all undergraduates receiving degrees in business rose from 13 percent to 19 percent, and in engineering from 3 percent to 7 percent. Declines in certain fields were equally dramatic: students receiving bachelor's degrees in education dropped from 21 percent in 1970 to 14 percent in 1979, and in the social sciences from 19 percent to 12 percent.[24] Surprisingly, computer science majors remained about one percent of all students throughout the.

The number of degrees awarded, while an important tool for manpower planning, is not a useful measure either of attendance patterns by students or of higher education's productivity. Although total enrollment increased by 42 percent between 1970 and 1980, the number of degrees awarded increased at a slower rate. The number of baccalaureate degrees awarded in 1980 was only 11 percent higher than the number awarded in 1970.[25]

ENROLLMENT BY OCCUPATIONAL PROGRAM

The enrollments of students in postsecondary occupational programs increased substantially between 1970 and 1979. In 1970, just over 150,000 students received formal diplomas or certificates for completing occupational curricula of at least one year but less than four years. By 1979, that number had grown to over 353,000 students,[26] most of whom received associate degrees in occupational programs of at least two years' duration. Although the number of students completing occupational programs more than doubled during the nine-year period, distribution of students amoung different occupational curricula remained surprisingly stable. For example, in 1970, 22 percent of all students completing occupational programs were in health sciences curricula; the proportion was 26

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[24]U.S. Department of Education, NCES, Digest of Education Statistics, 1972, pp. 98-102; and 1981, pp. 119-123.

[25]Ibid.

[26]U.S. Department of Education, NCES, Digest of Education Statistics, 1974, p. 105; and 1981, p. 135.

percent in 1979.[27] Business and commerce students received 33 percent of the occupational program awards in 1970 and 34 percent in 1979.[28]

The data on occupational program awards very likely understate the actual extent of student participation in vocationally oriented subbaccalaureate postsecondary education. Many students enroll in a few courses to gain certain skills, but do not complete a degree or certificate. This enrollment pattern is especially prevalent in community colleges, and may be responsible, in part, for the declines in transfer rates among community college students from college-parallel programs to the upper divisions of senior institutions.*

NONCREDIT ENROLLMENTS

Community colleges also enroll the majority of students selecting noncredit programs. A survey conducted in 1975 indicated that, among the collegiate institutions, public two-year colleges dominated noncredit enrollments, with 92 percent of all such enrollments.[29] NCES reports that in 1970, about 660,000 students enrolled in noncredit college programs, constituting about 8 percent of all enrollments. In 1979, approximately 1.5 million students enrolled in noncredit programs, or 13 percent of all students enrolled in college that year.[30]

NONCOLLEGIATE ENROLLMENTS

In addition to credit and noncredit enrollments in the collegiate sector, a sizable number of students enroll in noncollegiate postsecondary institutions, primarily to receive occupationally related training. In 1976, 1.4 million students were enrolled in these schools, which include technical

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*See also "Proprietary Vocational Schools," Competing, Job Placement and Earnings (Chapter Six).

[27] Ibid.

[28] Ibid.

[29] U.S. Department of Education, NCES, Digest of Education Statistics, 1981, p. 91.

[30] U.S. Department of Education, NCES, Digest of Education Statistics, 1972, p. 76 and 1981, p. 92; and author's calculations.

institutes, vocational schools, business schools, schools of cosmetology, trade or design schools, health-related schools and flight schools. By 1980, enrollments had reached near 1.6 million, two-thirds of which were concentrated in vocational/technical schools and business schools.[31] While most enrollments in vocational/technical schools were in the public sector, nearly all of those enrolled in business schools were in private institutions.[32]

ADULT EDUCATION

Another important segment of the college-going population consists of those individuals participating in adult education. Although the numbers of adults attending colleges or noncollegiate occupational schools have already been included in earlier discussions of enrollments at those institutions, it is useful to analyze the enrollment of adults separately, because the adult population will continue to increase while the youth population will decline by about 26 percent between 1978 and 1997.[33] In fact, Census Bureau officials have reported that over one-third of all college students in 1980 were age 25 or older, and that if their enrollment rates remain at the 1980 level, adults may offset the decline in traditional college-age students predicted for the 1980s.[34]

A 1981 survey of adults in postsecondary education programs indicated that the majority of the participants did not take courses for formal credit. Nearly half of the participants enrolled in an educational program to improve or advance in their current jobs, while 27 percent took courses for personal or social reasons.[35]

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[31]U.S. Department of Education, NCES, Condition of Education, 1982, p. 142.

[32]Ibid.

[33]Carnegie Council on Policy Studies in Higher Education, Three Thousand Futures: The Next Twenty Years for Higher Education (San Francisco: Jossey-Bass, 1980) p. 34.

[34]Interview with Census Bureau officials; and Chronicle of Higher Education, May 4, 1981, p. 3. See also "Overview," pp. 2-12.

[35]U.S. Department of Education, NCES, unpublished data.

Although adult enrollments have increased in regular postsecondary institutions, both collegiate and noncollegiate, a substantial number of enrollments have also occurred in nontraditional organizations, such as programs sponsored by community groups, industry and labor unions. These data suggest that the potential for increases in adult enrollments in higher education institutions may be limited, and that adult students may not present the enrollment bonanza to colleges and universities that increases in adult enrollments might have suggested.

FINANCES*

INSTITUTIONS

Funding Sources

In fiscal 1980, revenues to U.S. colleges and universities totaled slightly more than $58 billion, more than double the 1970 revenue figure of $24 billion. Although revenues increased by nearly $6.5 billion between 1979 and 1980 (an absolute increase of 12.5 percent), when adjusted for inflation the increase dropped to approximately one percent.[36]

The significance of a particular revenue source to a college or university differs widely, especially between public and private colleges (see Table 1). For example, private institutions depend heavily upon tuition, which in 1980 represented over one-third of private college revenues. In contrast, public institutions recieved only about 13 percent of their revenues from tuituion. However, public institutions depend upon state funds for much of their revenues; in 1979 and 1980, nearly half of all public institutional revenues were from state funds. Private institutions also receive a larger proportion of their revenues from private gifts and from endowments than do public institutions--a total of 15 percent for the two revenue sources for private colleges, compared with 3 percent for public colleges in 1979 and 1980.[37]

Despite the numerous factors affecting the higher education system during the past decade--changes in federal policy, enrollment fluctuations and changes in the general economic health of the nation--the share that most revenue sources represent in institutional budgets has remained remarkably constant (see Table 1). The 1980 figures show a

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*The only comprehensive source of national data on the financing of higher education is that collected by NCES for all collegiate institutions of higher education. Data on how undergraduate education is financed are not collected separately; therefore, this analysis of finances will discuss all levels of higher education.

[36]Ibid.

[37]See, generally, U.S. Department of Education, NCES Financial Statistics for Institutions of Higher Education, 1970, 1972, 1974, 1976, 1978 (Washington, D.C.: U.S. Government Printing Office, various dates).

TABLE 1

COLLEGES' AND UNIVERSITIES' REVENUES BY SOURCE AS PERCENT OF TOTAL CURRENT FUNDS, SELECTED YEARS, 1970-1980

Revenue So	1970 Pub	1970 Pvt	1972 Pub	1972 Pvt	1974 Pub	1974 Pvt	1976 Pub	1976 Pvt	1978 Pub	1978 Pvt	1979 Pub	1979 Pvt	1980 Pub	1980 Pvt
Tuition and .	12.5%	34.7%	13.7%	35.6%	12.8%	36.0%	13.0%	36.5%	13.1%	36.9%	12.7%	36.5%	12.6%	36.0%
Federal government	12.3	12.8	11.8	11.8	11.1	11.0	14.9	19.2	12.8	18.9	13.1	19.1	8.5	14.0
State government	41.4	1.3	40.8	1.7	42.4	2.1	44.6	2.3	45.7	2.0	46.4	2.0	46.3	2.0
Local government	5.2	0.8	5.5	0.5	5.6	0.6	5.6	0.9	5.2	0.7	4.2	0.6	3.7	0.8
Private gifts	0.4	7.2	1.9	9.7	0.6	7.2	2.3	10.1	2.5	10.0	2.4	9.6	2.5	9.5
Endowment	0.4	5.0	0.3	4.6	0.4	4.7	0.4	4.6	0.4	4.5	0.4	4.8	0.5	4.9
Auxiliary enterprises	12.5	15.1	11.8	14.1	10.9	13.4	10.8	12.9	10.8	12.5	10.5	12.2	10.5	12.0

SOURCE: HEGIS Financial Surveys, 1970-1980. U.S. Department of Education, Higher Education General Information Survey (HEGIS) Financial Surveys, 1970-1980.

SOURCE: U.S. Department of Education, Higher Education General Information Survey (HEGIS) Financial Surveys, 1970-1980.

sharp decline in federal funds as a percentage of institutional revenues, but otherwise the pattern of revenues in college budgets in 1980 resembled closely the pattern of 1970.[38]

When revenue patterns are examined by type and control of institution, the substantial differences in funding patterns among institutions become clearer (see Table 2). The table shows that even among institutions which are all public or all private, substantial differences exist. For example, public two-year colleges are heavily dependent upon state and local government funds (51.4 percent and 16.7 percent respectively--totaling over two-thirds of two-year college revenues), while public universities receive less than half of their revenues from state and local funds, and public four-year colleges receive half of their revenues from state and local governments.[39]

Similar differences are evident among institutions in the private sector. Private two-year colleges are heavily dependent upon tuition, while universities are much less so. Not unexpectedly, private universities rely on federal funds for a larger share of their revenues (20 percent) than do four- or two-year colleges.[40]

Funding for Credit and Noncredit Activities

It is more difficult to trace colleges' funding sources and expenditure patterns for credit and noncredit activities. Institutional practices differ, and public institutions in some states receive no state funds for noncredit programs.

Data are not collected by NCES in a manner that will allow the separation of credit and noncredit activities. The "instruction" expenditure category included in the NCES annual survey of institutional finances in postsecondary education consists of funds spent for both credit and noncredit activities, and provides no breakdown by whether credit is given. The problem is similar for extension services, for the "public service" expenditure category includes noninstructional projects for the benefit of the community (community services) as well as cooperative extension services. In 1980, U.S. colleges and universities spent $1.8 billion on "public service," 83 percent of which was expended by public colleges and universities.[41]

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[38] Ibid.

[39] U.S. Office of Education, NCES, unpublished data.

[40] Ibid.

[41] Ibid.

TABLE 2

DISTRIBUTION OF REVENUES BY SOURCE FOR COLLEGES AND UNIVERSITIES BY TYPE AND CONTROL, 1980*
(in millions of dollars and by percent)

Revenue Source	Public Universities	Public Other 4-year Colleges	Public 2-year Colleges	Private Universities	Private Other 4-year Colleges	Private 2-year Colleges
Tuition & fees	$2,011,578 (12.3%)	$1,815,464 (11.8%)	$1,031,170 (14.7%)	$2,522,999 (27.3%)	$4,255,865 (43.1%)	$277,597 (56.6%)
Federal government	2,544,055 (15.5)	1,967,863 (12.8)	500,527 (7.1)	1,844,943 (19.9)	871,995 (8.8)	26,067 (3.0)
State government	6,788,851 (41.5)	7,541,197 (49.2)	3,597,410 (51.4)	151,833 (1.6)	220,498 (2.2)	14,695 (3.0)
Local government	38,559 (0.4)	200,503 (1.3)	1,168,134 (16.7)	76,464 (0.8)	71,919 (0.7)	5,226 (1.1)
Private gifts	629,384 (3.8)	314,962 (2.1)	29,516 (0.4)	800,416 (8.6%)	1,008,404 (10.2)	49,405 (10.1)
Endowment	143,524 (0.9)	42,468 (0.3)	5,260 (0.1)	514,064 (5.5)	445,187 (4.5)	9,018 (1.8)
Auxiliary enterprises	2,089,050 (12.8)	1,548,103 (10.1)	429,167 (6.1)	823,828 (8.9)	1,447,258 (14.7)	81,870 (16.7)
Total current funds	$ (100%)	$15,315,968 (100%)	$7,005,048 (100%)	$9,256,278 (100%)	$9,867,003 (100%)	$490,263 (100%)

*Does not include federal student aid. Remaining percentages (not listed) include revenues from sales of educational services, hospitals and federal funds for independent operations.

SOURCE: U.S. Office of Education, HEGIS Financial Survey, 1980, unpublished data.

Voluntary Support

Through 1980, colleges and universities were successful at maintaining a relatively constant proportion of resources from private sources. Between 1975 and 1980, voluntary support rose faster than the rate of inflation, totaling approximately $3.8 billion in 1980. The largest increase was in support from corporations, which nearly doubled their total gifts between 1975 and 1980; individual donors also increased their contributions substantially. Although the largest increase in giving came from the corporate sector, alumni donations accounted for the largest amount of gifts totaling $910 million in 1980. Foundations gave approximately $800 million, and corporations gave approximately $700 million in 1980 (see Figure 2).[42]

Support from the private sector, which strengthened during the last half of the 1970s, may be reduced in the future because of changes in the tax laws. Thus, individual donations between 1981 and 1984 may be reduced by approximately $18.3 billion.[43]

Tuition

Tuition is an important revenue source for all institutions, whether they are public or private. Tuition levels vary substantially by institution type, control and geographic location.

Although the cost of living varies by geographic region, tuition differences by geographic region are larger than would be expected if the cost of living was the only influential factor. Tuition at all types of colleges--universities, other four-year colleges, and two-year colleges--is much higher in the Northeast than in other areas of the United States. Similarly, tuition at all types of colleges is higher in the North Central region (the industrialized Midwest states) than in the South, Southwest, or Western states. Even among public community colleges, often considered to be low-cost institutions, average tuition varies among geographic regions (See Figure 3).

The amount of tuition charged by a college or university is directly related to its ability to attract all but the most affluent students. For example, the Congressional Budget Office has estimated that a $100 decrease in college costs in 1979-80 academic year could have increased by approximately one percent the likelihood that low- and moderate-income students

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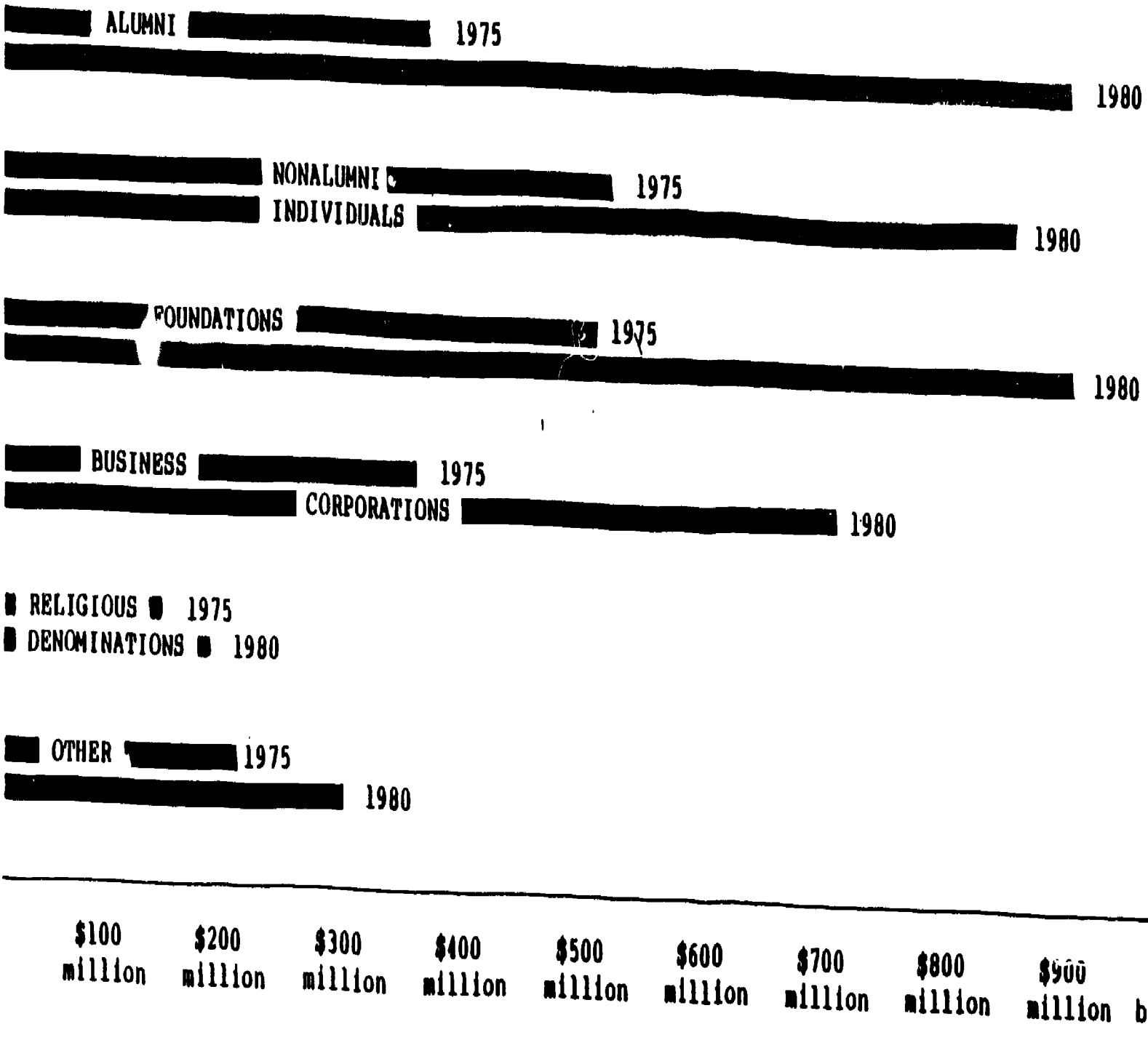
[42]Council for Financial Aid to Education, Voluntary Support for Higher Education, 1980 (Washington, D.C.: Council for Financial Aid to Education, 1981).

[43]Chronicle of Higher Education, September 9, 1982, p. 7.

FIGURE 2

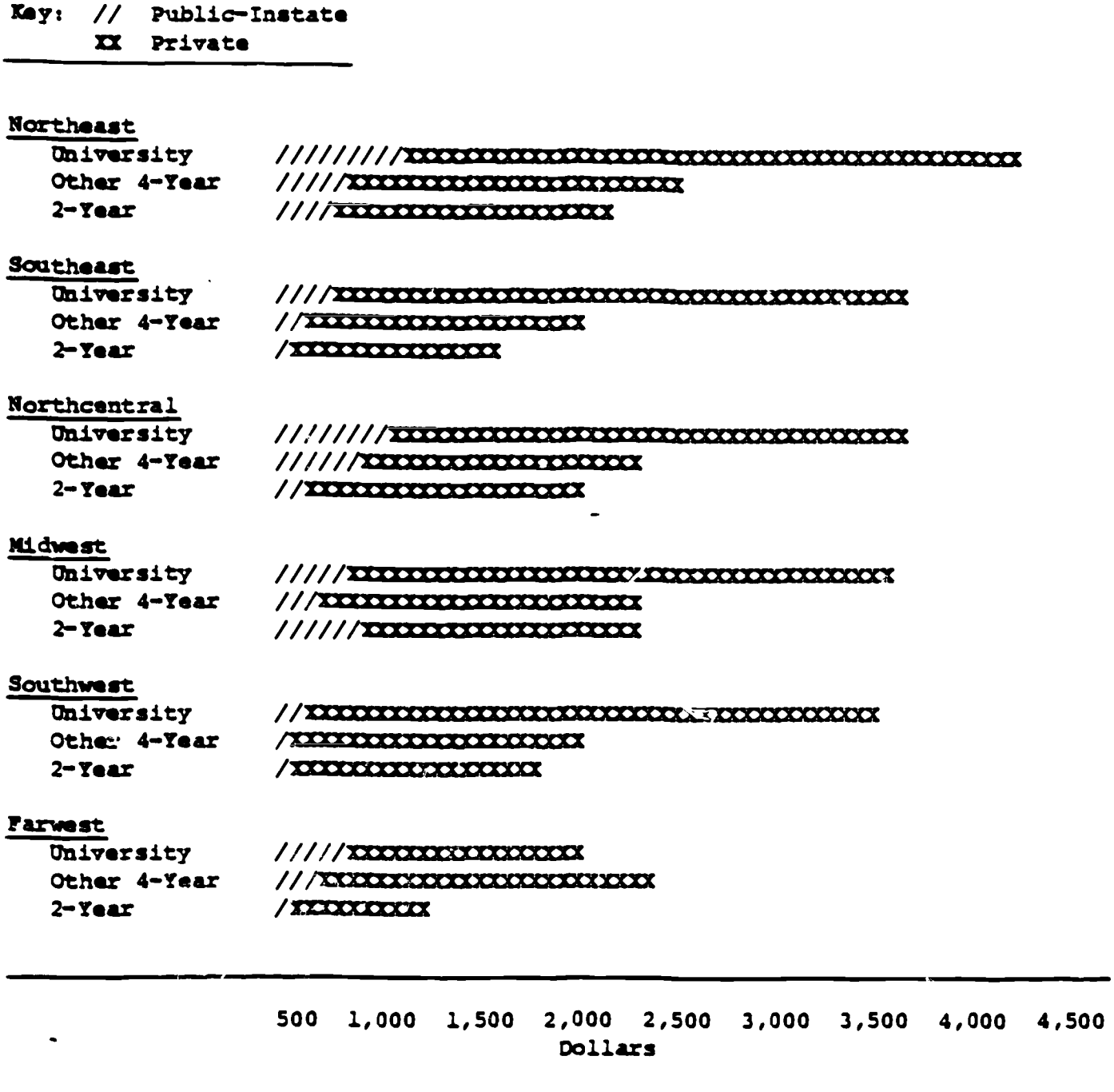
VOLUNTARY SUPPORT FOR HIGHER EDUCATION BY SOURCE, 1975 AND 1980



SOURCE: Council for Financial Aid to Education, Voluntary Support, 1981.

FIGURE 3

AVERAGE TUITION AT U.S. COLLEGES AND UNIVERSITIES, BY TYPE AND CONTROL AND BY GEOGRAPHIC REGION, 1979



SOURCE: U.S. Department of Education, HEGIS Financial Survey, 1979.

would attend college.[44] Such an increase in total enrollment would have provided colleges with 115,000 more students. These estimates dramatize the importance of the the tuition-pricing decisions made by higher education institutions and the potential impact of large changes in federal student aid.

Colleges and universities appear to have understood this trend, for tuition at most institutions has risen more slowly than the rate of inflation since 1968, and actually declined in relation to inflation at private two- and four-year colleges. Tuition has fluctuated at public institutions, and has increased more sharply than private college tuition. For all sectors of higher education, tuition increases have been modest compared with the sizable jump in the rate of inflation during the late 1970s and into the early 1980s.[45]

Recent tuition increases, however, have been larger than the increases of the 1970s. Data collected by the College Board indicate that tuition at four-year colleges increased by 15 percent between the fall of 1980 and of 1981, and had increased 12 percent the previous year. Tuition at four-year public colleges increased 16 percent between 1980 and 1981 and 13 percent at private colleges; tuition at public two-year colleges increased by 4.7 percent and by 6.5 percent at private institutions during the same period.[46]

Despite the greater tuition increases at public colleges over the past several years, the gap between public and private college tuition still remains sizable. The College Board reported that average annual tuition charges at four-year public colleges were approximately $706 in 1981-82, and $3,279 at four-year private colleges. The impact of public subsidy on tuition differentials for public and private colleges is evident when tuition is expressed as a proportion of total costs of attending college. Tuition and fees at public four-year colleges were 21 percent of total costs, but were 54 percent of total costs at private four-year colleges. At two-year colleges, tuition and fees represented 15 percent of the cost of attending public, and 47 percent of the cost of attending private schools.[47]

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[44]U.S. Congress, Congressional Budget Office, Federal Student Assistance: Issues and Options (Washington, D.C.: U.S. Government Printing Office, 1980), p.6.

[45]U.S. Department of Education, NCES, Condition of Education, 1980, p. 159.

[46]College Board, The College Cost Book, 1980-1981 (New York: The College Board, 1981), p. 11.

[47]Ibid.

Students' educational costs vary according to whether they live on or off campus, and whether they attend full time or part-time. The College Board collects data each year on college costs for each type of college and university, including proprietary schools, for residential and nonresidential full-time students (see Table 3). Tuition for part-time students depends on the number of credit hours taken; institutional charges per credit vary widely.

STUDENT AID

The growth in federal support for student aid over the last 15 years has been meteoric. From a total appropriation in 1965 of more than $200 million, federal student aid funds rose to over $1.3 billion in 1970, to $3.3 billion in 1975, and to nearly $9 billion in 1980.[48]

Students at all types of postsecondary institutions have benefited from federal student aid (see Figure 4). In 1980-81, the Pell Grant program awarded $2.4 billion to about 2.8 million students attending public and private colleges. During that same year, more than 2.3 million college students (nearly one-fifth of all college students) received federally Guaranteed Student Loans, averaging nearly $2,100 each.[49]

Federal student aid funds have increased much faster than either other tuition revenues (tuition income to colleges) or total institutional expenditures. Federal aid expenditures in 1970 were $1.3 billion, or approximately 30 percent of tuition revenues for all colleges and universities. In 1975, federal aid to students totaled $3.3 billion, or 46 percent of all tuition income that year. By 1979, federal student aid had leaped to $7.1 billion, or 66 percent of all tuition revenues. Therefore, colleges appear not to have increased their tuition in response to higher levels of federal aid funding.[50]

Similar comparisons of federal aid funding and institutional educational and general (E & G) expenditures demonstrate that college expenditures have not risen at as fast

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[48]Author's calculations; and U.S. Department of Education, Office of Student Financial Assistance, OSFA Program Book, 1981 (Washington, D.C.: Office of Student Financial Aid, 1982).

[49]Ibid., pp. 27, 35; U.S. Department of Education, "Annual Evaluation Report on Education Programs," photocopy (Washington, D.C.: U.S. Department of Education, 1982).

[50]Ibid.; and author's calculations.

TABLE 3

AVERAGE COSTS FOR STUDENTS AT COLLEGES AND UNIVERSITIES BY RESIDENTIAL STATUS TYPE AND CONTROL OF INSTITUTION, 1980-81

Residential Students

	Public 2-Year Schools		Private 2-Year Schools		Public 4-Year Schools		Private 4-Year Schools		Proprietary Schools*	
Tuition and fees	$ 464	15%	$2,079	45%	$ 706	21%	$3,279	54%		
Books and supplies	218	7	213	5	235	7	242	4		
Room and board	1,500	48	1,606	35	1,620	48	1,746	29		
Personal expenses	571	18	495	10	586	17	524	9		
Transportation	362	12	233	5	262	7	291	4		
Total expenses	$3,123	100%	$4,592	100%	$3,409	100%	$6,082	100%		

Nonresidential Students

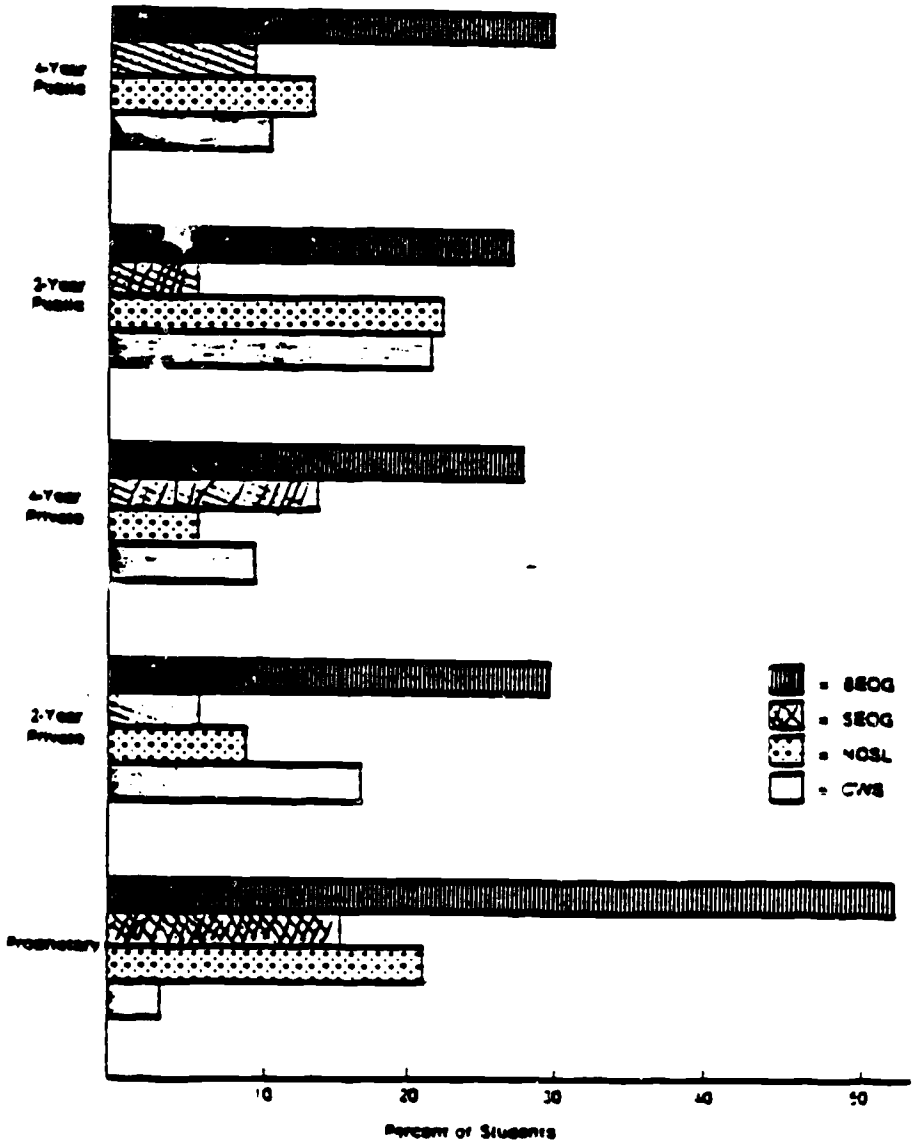
	Public 2-Year Schools		Private 2-Year Schools		Public 4-Year Schools		Private 4-Year Schools		Proprietary Schools*	
Tuition and fees	$ 464	17%	$2,079	51%	$ 706	24%	$3,279	61%	$2,342	52%
Books and supplies	218	8	213	5	235	8	242	5	243	6
Room and board	965	35	914	23	884	31	924	17	1,002	22
Personal expenses	569	21	472	12	568	20	537	10	492	11
Transportation	537	19	361	9	403	17	401	7	407	9
Total expenses	$2,753	100%	$4,039	100%	$2,076	100%	$5,383	100%	$4,486	100%

*Sample too small to provide meaningful averages.

SOURCE: The College Board, The College Cost Book, 1980-81, p. 11.

FIGURE 4

PERCENTAGE OF POSTSECONDARY UNDERGRADUATE STUDENTS RECEIVING FEDERAL FINANCIAL ASSISTANCE BY TYPE OF AID AND LEVEL AND CONTROL OF INSTITUTION, ACADEMIC YEAR 1978-79



Source: Study of the Impact of Student Financial Aid Programs (SISFAP II) Dept. of Ed., May 1980.

a rate as student aid funding. In 1970, federal aid was 8 percent of E & G expenditures, 12 percent in 1975 and 18 percent in 1979. As with tuition levels, colleges have not increased their spending at the same rate as the rise in federal student aid spending.[51]

Minority group recipients

In 1979, one half of all federal aid recipients were members of racial and ethnic minority groups. Blacks, representing 30 percent of federal aid recipients, received individual average awards of nearly $1,800. Hispanics, representing 14 percent of aid recipients, received an average of $1,200 each. Nearly half of all federal aid recipients that year were freshmen, indicating that these funds were an important source of access to college for new students.[52]

Low-income recipients

Federal student aid has provided access to higher education for low-income students, especially for those students who wish to attend private--that is, higher-cost--institutions. In 1979, a study conducted by the U.S. Department of Education found that 76 percent of all dependent college students whose annual family income was under $6,000 received some form of federal student aid. There were sizable differences in the percentage of low-income students receiving federal aid depending upon the type of institution the student attended. Of those students whose family income was less than $6,000 and who attended private four-year colleges and universities in 1979, 85 percent received some form of federal aid (excluding Guaranteed Student Loans); only 60 percent of students from the same income level who attended public community colleges received federal student aid. Low-income students attending proprietary schools comprised the highest proportion of students receiving federal aid (92 percent). These patterns of differential participation in federal aid programs by type of institution attended were similar for all income levels, although the proportion of students receiving aid declined as family income increased.[53]

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[51]U..S. Department of Education, "Financial Statistics," 1970 and 1975, and unpublished data for 1979; and author's calculations.

[52]U.S. Department of Education, OSFA Program Book, 1981, p. 16.

[53]Ibid., p. 18.

State aid

Because of its magnitude and pervasiveness, federal aid has tended to overshadow the commitments made by states to financial assistance for college students. For example, in 1979, state student aid funds represented approximately 1.5 percent of all institutional revenues, compared with nearly 10 percent from federal funds. In 1980 states provided approximately one billion dollars in financial aid to college students,[54] while federal student aid was approximately $9 billion that year.

On the whole, private four-year colleges have tended to receive a substantially larger share of federal student aid funds (see Table 4). Proprietary schools and public four-year colleges and universities received roughly equivalent amounts of federal student aid in 1979-80.[55]

OTHER FINANCIAL ISSUES

Faculty salaries

In 1980, expenditures for instruction consumed approximately one-third of all college and university budgets--the biggest single budget item overall. At most institutions, the largest proportion of the instructional budget is devoted to faculty salaries.[56]

Expenditures for instruction increased by 141 percent between 1970 and 1980, while faculty salaries, on the average, increased by only two-thirds over the decade.[57] When the effects of inflation are taken into account, faculty salaries in real dollars declined by approximately 19 percent overall between 1970 and 1980.[58]

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[54]Ibid.; p. 81.

[55]Ibid., and author's calculations.

[56]U.S. Department of Education, NCES, Faculty Salaries, Tenure and Benefits, 1980-81 (Washington, D.C.: U.S. Government Printing Office, 1981), pp. 16, 24; and unpublished data from the National Center for Education Statistics on institutional finances for 1979.

[57]"Regressing Into the Eighties: Annual Report on the Economic Status of the Profession," Academe 66 (September 1980): 267-8.

[58]Ibid.

TABLE 4

FEDERAL STUDENT AID EXPENDITURES*
1979-80

(in millions of dollars)

Program	Public		Private		
	4-Year	2-Year	4-Year	2-Year	Proprietary
Pell†	$ 992,215	$ 521,409	$ 626,348	$ 60,135	$ 252,359
NDSL	288,078	31,299	264,480	10,447	51,385
SEOG	130,716	39,418	130,599	6,707	25,352
CWS	263,908	92,347	221,698	10,280	8,436
SSIG‡	39,700	11,200	44,700	1,900	1,000
Total	$1,714,617	$ 695,673	$1,287,825	$ 89,469	$ 338,382

*Does not include Guaranteed Student Loans.
†BEOG Program renamed Pell program in fiscal year 1981.
‡Figures are estimated.

SOURCE: U.S. Department of Education, OSFA, Program Book, 1981.

Even though instructional expenditures have increased faster than have faculty salaries, many institutions have hired part-time faculty, paid on a per-credit hour or a per-course basis, to reduce the pressure on instructional budgets. Between 1972 and 1976, the number of part-time faculty increased by 54 percent, from just over 130,000 to over 200,000. In 1980, there were just under 400,000 full-time faculty in U.S. colleges and universities.[59]

Faculty salaries and instructional budgets will continue to trouble colleges and universities throughout the 1980s as the average age of faculty and the number holding tenure both increase. Overall, approximately two-thirds of all full-time faculty were tenured in 1980.[60] Now that the mandatory retirement age has been raised to 70 years, a largely tenured, aging faculty will squeeze instructional budgets as faculty demand annual raises commensurate with inflation at the same time that predicted reduced enrollments lead to reduced tuition income for many colleges.

Cost Squeezes

Colleges and universities will face budget problems from several sources in the 1980s:

- The problem of faculty salaries, described above, will be exacerbated if declining enrollments, predicted for the 1980s and early 1990s, materialize. The Carnegie Commission on Policy Studies in Higher Education estimated that undergraduate enrollments may decline by an overall average of ten percent between 1980 and 1997.[61] A 10 percent decline, using 1980 enrollment figures, would represent over 1.1 million fewer college students. It is unlikely all colleges and universities will be affected equally; the Carnegie Commission suggests that the institutions most vulnerable to enrollment declines will be the less selective liberal arts colleges and private two-year colleges.[62]

- State appropriations for public colleges and universities will be leveling in the 1980s. Between 1971 and 1981, state appropriations for higher education increased by 197 percent, or by 33 percent when adjusted for inflation.

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[59]U.S. Department of Education, NCES, Faculty Salaries, p. 3.

[60]Ibid., p. 5.

[61]Carnegie Council, Three Thousand Futures, p. 45.

[62]Ibid., pp. 60-61.

However, between 1979 and 1981, state appropriations, when adjusted for inflation, actually declined by four percent.[63] Tax reduction initiatives, reductions in federal spending for higher education, and proposed New Federalism programs suggest that state support for higher education is not likely to return to the levels of the early and mid-1970s.

- Although increased part-time enrollments help to fill classrooms and provide increased tuition income, colleges and universities incur heavier expenses in relation to the income derived from part-time students than from full-time. Part-time students must be registered, grades must be recorded, counseling and other services must be provided, just as they are for full-time students. Therefore, it is more costly for a college or university to enroll four students taking one course each than it is for the college to enroll a full-time student taking four courses.

- For a number of years, college administrators facing budget pressures have deferred maintenance on classroom and dormitory buildings, using scarce funds for staff salaries and student services instead. Buildings constructed during the enrollment boom of the late 1950s and early 1960s are now nearly 25 years old, and require renovation and maintenance. Unfortunately, data have not been collected concerning the amount of maintenance which has been deferred and the cost of such deferral. However, one source has estimated that colleges and universities may need to spend a total of $35 billion to perform the maintenance that they have deferred since the 1960s.[64]

In addition, colleges and universities have been required by law to make their buildings and educational programs accessible to handicapped students. NCES has estimated the cost of compliance with Section 504 of the Rehabilitation Act of 1973 at $561 million for capital improvements, primarily renovation to make buildings accessible to mobility-impaired students.[65] However, a study conducted by the National

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[63]Editorial Projects for Education, The Fifteen Minute Report, (Washington, D.C.: Editorial Projects In Education, October 1981), p. 3.

[64]Association of Physical Plant Administrators, Mortgaging the Future (Washington, D.C.: Association of Physical Plant Administrators, 1979), p. 1.

[65]U.S. Department of Education, The Impact of Section 504 (Washington, D.C.: U.S. Government Printing Office, 1979).

Association of College and University Business Officers determined that the NCES estimates were "very low," and noted that public institutions had spent an average of $423,355 each between 1976 and 1981 to modify thier buildings, while private institutions had spent approximately $121,000 each.[66] If all public and private colleges and universities spent these respective average amounts for facilities renovation to comply with Section 504, the total would be $825 million.[67] Further data collection is needed to understand the cost of compliance and the degree of compliance with the Rehabilitation Act.

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[66]National Association of College and University Business Officers, Business Officer, April 1981, p. 24.

[67]Author's calculations.

CHAPTER FIVE: GRADUATE AND PROFESSIONAL EDUCATION

EXECUTIVE SUMMARY

THE CONTEXT OF GRADUATE AND PROFESSIONAL EDUCATION

Graduate and professional education is diverse, in types of degrees, kinds of programs and students served. Of the 3,000-plus institutions of higher education in the United States, about 1,000 offer graduate and professional programs. There are more than 300 doctorate-granting institutions, offering both doctorates and Master's degrees, and 700 institutions granting Master's degrees. Of the approximately 1,000 institutions offering graduate and professional education more than 600 have graduate programs in education, 500 in business, 175 in law and 100 in medicine. More than half the nation's college graduates eventually pursue some form of graduate education.

Aggregate Trends

- The number of doctorates awarded each year reached a peak of about 34,000 in 1972-73, and has declined about 2,000 each year since then.

- The number of Master's degrees awarded each year reached a peak of about 318,000 in 1976-77, and it has declined by more than 15,000 each year since then.

- The number of first-professional* degrees awarded each year (primarily degrees in medicine and law) has increased throughout the decade, and it is expected to increase slightly beyond the number currently granted (about 70,000).

- More than half of the students in Master's and doctoral programs are enrolled part-time. First-professional enrollment, however, remains predominantly full time.

- According to two indicators of demand for graduate education--number of applications and admissions test volume--the demand for graduate education has declined slightly since the mid-1970s.

- The proportion of women among graduate students has risen steadily over the past decade, from about 40 percent to nearly 50 percent.

- Foreign students constitute an increasing proportion of graduate enrollment and degrees conferred, and, if trends in undergraduate education are an indication, this proportion is likely to continue to grow. Foreign student participation appears particularly large in certain disciplines. In the biological sciences, enrollments and graduate degrees have increased over the past decade; in the physical sciences, they have declined. In engineering, enrollments have increased, but the number of doctorates granted has declined. The humanities have remained stable, while the pattern in the social sciences is mixed.

Financial Support

While doctoral students continue to be supported by a combination of forms of aid, the relative shares of these forms of support have shifted over the past decade. Federally sponsored fellowships, traineeships and assistantships have declined. Private foundation fellowships have declined and, in some cases, disappeared.

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*Since 1965 the U.S. Department of Education's National Center for Education Statistics' definition of first professional has been: "An academic degree which requires at least two academic years of previous college work for entrance and at least six academic years of college work for completion." This includes the following degrees only: Law (LL.B. or J.D.); dentistry (D.D.S. or D.M.D.); medicine (M.D.); Veterinary medicine (D.V.M.); chiropody or podiatry (D.S.C. or D.P.); optometry (O.D.); osteopathy (D.O.); and theology (B.D.). U.S. Department of Education, NCES, Projections of Educational Statistics to 1986-87, (Washington, D.C.: U.S. Department of Education, 1978), p. 147.)

Universities have partially compensated for the decline in federal and private foundation fellowships by committing a larger portion of institutional funds to graduate student support. In addition, federal work-study funds have increasingly been applied toward the support of eligible graduate students.

Graduate student participation in federally guaranteed student loan programs has increased, and the cumulative loan debts incurred by graduate students have increased.

THE CONTEXT OF GRADUATE AND PROFESSIONAL EDUCATION

More than half the students who earn bachelor's degrees in the United States later attend some form of graduate school, and more than 40 percent eventually earn a graduate degree. During the 1978-79 academic year, 301,079 students earned Master's degrees, 32,730 earned doctorates and 68,848 earned first professional degrees.[1]

Graduate education includes a wide-ranging collection of both institutions and programs. Indeed, of the approximately 3,000 colleges and universitites in the United States, more than 1,000 offer some form of graduate education.[2]

Broadly speaking, most graduate programs are primarily involved in one (or more) of the following endeavors:

- Preparing students for careers in the professions, such as law, medicine, elementary and secondary teaching, or engineering;
- Preparing students for careers in research;
- Preparing students for careers as college or university professors;
- Engaging in the advancement of knowledge through basic and applied research; and
- Participating in undergraduate instruction.

This diversity in graduate programs is reflected not only in the variety of programs but in the number of the degrees awarded as well. At the most general level, graduate programs offer two basic kinds of degrees: Master's degrees and Doctor's degrees. But each type of degree includes a bewildering number of subtypes. There are also a small number of degrees that do not contain the name "Master" or "Doctor," but are nevertheless graduate degrees. For example, a number of universities grant a professional engineer's degree, which falls between the Master's and doctorate level.

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[1]U.S. Department of Education, NCES, Digest of Education Statistics, 1981, p. 118.

[2]Ibid., p. 111.

Mainly for historical r asons, statistics on graduate education are usually reported separately for two types of programs: (1) programs leading to a Master's degree or doctorate; and (2) programs leading to a first-professional degree (see Tables 1 and 2). For simplicity, these two categories are often called graduate programs and first-professional programs, even though, broadly speaking, both are at the graduate level.* About 1.3 million students are currently enrolled in graduate programs, and an additional 250,000 are enrolled in first-professional programs. Of the 1.3 million students in graduate school, about 1,075,000 have been admitted to programs leading to a Master's degree or doctorate. The remaining 240,000 students are pursuing graduate course work but are not enrolled in programs leading to a graduate degree.[3]

About half the students enrolled in graduate programs are women, and more than 60 percent of the students are enrolled part-time. About 6 percent of graduate students are black, and slightly more than 2 percent are Hispanic. About one-third of all graduate students are enrolled in private institutions.

First-professional degree programs enroll a smaller proportion of women and part-time students than do graduate programs. Of the 250,000 students currently enrolled in first-professional degree programs, about 25 percent are women, and about 10 percent are part-time, a little over 4 percent are black and about 3 percent are Hispanic. More than 60 percent of all first-professional students are enrolled in private institutions.[4]

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*Since 1965 the U.S. Department of Education's National Center for Education Statistics' definition of first professional has been: "An academic degree which requires at least two academic years of previous college work for entrance and at least six academic years of college work for completion." This includes the following degrees only: Law (LL.B. or J.D.); dentistry (D.D.S. or D.M.D.); medicine (M.D.); Veterinary medicine (D.V.M.); chiropody or podiatry (D.S.C. or D.P.); optometry (O.D.); osteopathy (D.O.); and theology (B.D.). U.S. Department of Education, NCES, Projections of Educational Statistics to 1986-87, (Washington, D.C.: U.S. Department of Education, 1978), p. 147.

[3]U.S. Department of Education, NCES, Projections of Education Statistics to 1988-89, p. 37.

[4]Ibid., p. 46.

TABLE 1

NUMBER OF DEPARTMENTS OFFERING MASTER'S AND DOCTOR'S DEGREES IN SELECTED ACADEMIC DISCIPLINES, 1976-77

	Master's	Doctor's
Biological Sciences	459	210
Business & Management	461	85
Communications	143	31
Computers & Information Science	144	49
Education	655	166
Engineering	234	139
Fine & Applied Arts	325	82
Foreign Languages	261	90
Health Professions	275	84
Letters	498	156
Library Science	118	20
Mathematics	379	141
Physical Sciences	369	194
Psychology	370	176
Public Affairs	270	43
Social Sciences	493	158

SOURCE: Data adapted from U.S. Department of Health, Education and Welfare, Office of Civil Rights, Data on Earned Degrees Conferred from Institutions of Higher Education by Race, Ethnicity, and Sex, Academic Year 1976-77, April 1978.

TABLE 2

NUMBER OF DEPARTMENTS OFFERING DEGREES IN SELECTED FIRST-PROFESSIONAL FIELDS

Dentistry (D.D.S.)	58
Law (L.L.B. or J.D.)	171
Medicine (M.D.)	110
Theology (B.D., M.Div., Rabbi)	173

SOURCE: Data adapted from U.S. Department of Health, Education and Welfare, Office of Civil Rights, Data on Earned Degrees Conferred from Institutions of Higher Education by Race, Ethnicity, and Sex, Academic Year 1976-77, April 1978.

Institutions offering graduate and first-professional programs can be classified in a number of ways. One simple classification is according to highest degree conferred. Of the roughly 1,000 institutions with graduate and professional programs, somewhat more than 300 are doctorate-granting institutions, offering both Master's and doctorates. The remaining 700 offer Master's degrees.[5]

DOCTORAL PROGRAMS

Within the broad category of doctorate-granting institutions, there is a substantial range of universities, although only a small number of institutions grant a large proportion of the doctorates awarded each year. For example, in 1978-79, the University of California at Berkeley awarded more than 700, and 7 universities awarded 500 or more.[6]

Doctoral programs usually require students to complete at least two years of course work, followed by an extended original research project culminating in the preparation of a dissertation. At a minimum, this generally requires at least three years--but most students need four or five years to finish. On the average, students who earn doctorates receive them more than nine years after they received their Bachelor's degrees. The time elapsed between receiving degrees varies greatly by gender and field of study.[7]

FIRST-PROFESSIONAL PROGRAMS

Most first-professional programs are much more highly structured than typical doctoral programs in arts and sciences--or for that matter, in engineering or education. In general, students who enter law school can count on a three-year stay, while those who enter medical school know that

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[5]Data compiled from U.S. HEW, OCR, Data on Earned Degrees Conferred from Institutions of Higher Education by Race, Ethnicity, and Sex Academic Year 1976-77, pp. 1129-1674.

[6]National Center for Higher Education Management Systems, An Examination of Possible Statewide Applications and Extensions of the NCHEMS Program Classification Structure, Technical Report 50 (Boulder, Colorado: U.S. Department of Education, NCHEMS, 1974), p. 26; NCES, Digest of Educational Statistics, 1981, p. 134.

[7]National Research Council, A Century of Doctorates: Data Analyses of Growth and Change (Washington, D.C.: National Academy of Sciences, 1978), p. 55.

it takes four years to earn an M.D. The length of stay in doctoral programs in other fields is generally much less predictable.

In 1978-79, 5,434 professional degrees were awarded in dentistry, 14,786 in medicine, and 35,206 in law (L.L.B. or J.D.).[8] More degrees were awarded in law than the total number of doctorates awarded in all fields except of the first professions.

MASTER'S PROGRAMS

Programs leading to a Master's degree usually require one or two years of work following the Bachelor's degree. The most common Master's programs are designed to prepare students for the professions. For example, of the approximately 300,000 Master's degrees granted each year, about one-third are in education, and one-sixth are in business administration. Master's programs are also offered in such professional fields as social work, public administration, and engineering, as well as in the regular academic disciplines.[9]

About 1,000 institutions offer the Master's degree; the average number of degrees awarded per graduate institution is about 300. However, many universities award many times that number. For example, New York University grants about 4,000 Master's degrees each year, about 15 universities grant more than 2,000, and 56 grant between 1,000 and 2,000.[10] While many of the major doctorate-granting universities grant a large number of Master's degrees, some large Master's-granting institutions--for example, San Francisco State University and the City University of New York, Queen's College--grant few doctorates, or none at all.

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[8]U.S. Department of Education, NCES, Digest of Education Statistics 1981, p. 128.

[9]Ibid., p. 119.

[10]Compiled from U.S. HEW, OCR, Earned Degrees Conferred 1973-74, Institutional Data.

AGGREGATE TRENDS IN GRADUATE EDUCATION

The number of students enrolling in graduate school and receiving advanced degrees has grown at a rapid pace, doubling every five or ten years until the early 1970s.

By the early 1970s, nearly 75 percent of all eighteen-year-olds completed high school each year, and roughly 25 percent of all young people earned bachelor's degrees.[11]

In the mid-seventies, however, the long-term growth in the number of bachelor's degrees awarded each year came to an end, primarily for two reasons: the number of young people of college age, which had grown rapidly for several decades, reached a peak in about 1979[12] and the proportion of young men completing high school and attending and completing college began to decline. (At the same time, however, the proportion of young women attending and completing college has continued to increase.)[13]

The turning point in the number of bachelor's degrees granted each year has been accompanied by a decline in the proportion of college graduates enrolling in graduate school, and an increase in the proportion of college graduates enrolling in professional programs. Taken together, these trends have resulted in a fairly substantial decline in the number of applications to graduate school in the late 1970s. The Council of Graduate Schools (CGS), which includes about 365 graduate institutions, has collected annual information on the number of applications for graduate study received by its member institutions since 1971. According to the CGS survey, each member university received an average of 2,285 applications for graduate study in 1974. By 1981, the average number of applications each received had fallen to 1,764. While these numbers must be interpreted with some caution,

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[11]U.S. Department of Commerce, Bureau of the Census, Statistical Abstract of the United States (Washington, D.C.: U.S. Government Printing Office, 1978), p. 157.

[12]U.S. Department of Education, NCES, Projections of Education Statistics to 1986-87, 1978, p. 156.

[13]Ibid., p. 22.

since the samples involved shifted* somewhat from year to year, they do suggest a decline of applications to graduate school at CGS institutions.

Trends in applications differ for different types of graduate institutions. The Consortium on Financing Higher Education (COFHE) graduate research project has reanalyzed the CGS data for about 20 major research universities, and, although applications have fallen at these major research universities, the fall-off is not as substantial as the decline for all CGS schools. At COFHE institutions, the average number of applications per institution declined from about 5,900 in 1975 to about 5,400 in 1980.[14]

While applications to graduate schools have fallen, enrollment of new students has not fallen as rapidly. The average number of entering graduate students at CGS institutions fell from 688 in 1974 to 543 in 1981. There is some indication that the number of entering graduate students had declined from about 1,000 in 1974 to about 950 in 1980.[15]

Systematic data on applications and entering graduate enrollments are not available on the national level.† Data are available, however, for total enrollment in graduate and professional schools. At the national level, total graduate enrollment grew in the early part of the decade, reaching a peak in 1976, and has declined somewhat since then. First-professsional enrollment, on the other hand, has grown steadily over the last decade, from about 150,000 in 1968, to about 250,000 in 1978.[16]

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*The number of institutions responding to the voluntary survey ranged from 234 to 264 institutions.

†The National Center for Education Statistics collects data on "first-year" graduate students--that is, students who have completed less than a full year of graduate course work. However, it is estimated that more than half of these "first-year" students have been enrolled for more than a year, but have not yet completed a full year of courses. See Allen Cartter, PhDs and the Academic Labor Market (New York: McGraw-Hill, 1976).

[14]Consortium on Financing Higher Education, Graduate Admission Trends in Selected Departments of COFHE Graduate Research Project Institutions 1970-80 (Boston: COFHE, 1982), p. xi.

[15]Ibid. pp. xii-xiii.

[16]U.S. Department of Education, NCES, Projections of Education Statistics to 1988-89, 1978, pp. 37-42.

The trends in graduate enrollment differ substantially for men and women, for full- and part-time students, and for public and private institutions. Indeed, much of the growth in enrollment that occurred in the first half of the decade occurred among women and part-time students in public institutions. For example, from 1968-78, the number of men in graduate school increased from about 550,000 to about 680,000, while the increase for women was much more substantial, from about 325,000 to about 630,000. While full-time enrollment grew rather slowly, from about 350,000 to about 425,000, part-time enrollment grew dramatically, from about 550,000 to 850,000. Enrollment in private institutions grew slowly, from about 300,000 to about 420,000; enrollment in public institutions grew from about 600,000 to almost 900,000.[17]

National data are also available on the number of graduate and professional degrees awarded each year. According to the National Center for Education Statistics (NCES), the number of doctorates awarded each year peaked at slightly more than 34,000 in 1973, and has fallen by about 2,000 since then.[18]

Like the trends in graduate enrollment, the trends in the numbers of doctorates are the result of different patterns for men and women. The number of doctorates earned by men each year peaked at about 28,500 in 1973, and since then has fallen by almost 5,000. The number of doctorates earned by women, on the other hand, has continued to increase, although some projections indicate that the number may begin to fall in the 1980s.

The picture for Master's degrees is fairly similar. The number of Master's degrees awarded each year peaked in 1977, at about 318,000, and has declined by about 15,000 since then.[19]

The total number of first-professional degrees (primarily in medicine, law, dentistry and theology) has risen steadily during the 1960s and 1970s, for both men and women, reaching 52,909 and 16,313, respectively, in 1978-79, and the numbers are not expected to fall noticeably in the near future.[20]

Unfortunately, statistics on degrees awarded by ethnicity were not collected in a systematic fashion until the mid-seventies, and thus it is difficult to draw precise

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[17] Ibid.

[18] Ibid., p. 62.

[19] Ibid.

[20] Ibid.

inferences about long-term trends in graduate degrees on this basis. In 1975-76, blacks earned about 3.6 percent of all doctorates, about 6.6 percent of all Master's degrees and about 4.3 percent of all first-professional degrees. Hispanics earned about 1.2 percent of all doctorates, 2 percent of all Master's degrees and 2.4 percent of all first-professional degrees. Since the mid-1970s, the proportion of black and Hispanic degree recipients has remained about constant.[21]

In the last two decades, there has been a fairly substantial increase in the degrees granted to foreign students holding temporary visas, especially for men in the sciences and engineering. In 1968, about 10 percent of all doctorates were awarded to nonresident aliens. By 1980, this percentage had risen to about 12 percent. For men, the percentage of doctorates granted to nonresident aliens rose from about 10 percent to almost 15 percent over the decade, while for women it declined from about 6 percent to about 5 percent.[22]

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[21]1975-76 data adapted from U.S. HEW, OCR, Data on Earned Degrees Conferred fromm Institutions of Higher Education by Race, Ethnicity, and Sex, Academic Year 1975-76, April 1978. 1978-79 data adapted from American Council on Education Fact Book for Academic Administrators, 1981-82, pp. 163-65. The 1978-79 data reported in the Fact Book were derived from the Office of Civil Rights.

[22]National Research Council, Summary Report: Doctorate Recipients from United States Universities, 1979 and 1980.

TRENDS IN DEGREES AWARDED FOR DIFFERENT FIELDS OF STUDY

One way to describe the shifts that have occurred in graduate and professional fields of study over the past decade is to compare the academic and professional fields, as noted below.[23]

Academic Doctorates	1968-69	1978-79
Humanities	3,000	3,600
Physical Sciences	5,000	3,800
Life Sciences	4,200	5,200
Social Sciences	4,600	6,600
Total	16,900	19,200
Professional Fields		
Business (M.B.A.)	18,300	47,000
Education (M.A.T.)	70,200	112,000
Medicine (M.D.)	11,400	20,200
Law (L.L.B. or J.D.)	17,000	35,200
Total	116,900	214,400
GRAND TOTAL	133,800	233,600

[23]U.S. Department of Education, NCES, Projections of Educational Statistics to 1988-89, 1978, pp. 62-85.

In 1968, of the 133,800 degrees granted in the eight fields, 16,900 were academic doctorates, and 116,900 were in the professions. Thus, in 1968, the number of academic doctorates was about 12.5 percent of the total number of degrees awarded in the eight fields. By 1978, the proportion of academic doctorates had fallen to 8.5 percent of the total.

The discussion so far has focused on degrees produced in different fields of study, although it would be equally important to examine other measures of shifts across fields--for example, applications, number of students admitted each year and number of students enrolled. Unfortunately, however, at the national level, data on graduate application and admissions are not regularly collected across disciplines (although some organizations collect data on these topics for specific fields). Some national data are available on enrollment by field of study, but they have not been collected or reported in as systematic a fashion as the data collected on degrees. And data on applications and admissions are available for only a selected set of academic departments in major research universities studied by COFHE project institutions.

PATTERNS IN GRADUATE FINANCIAL SUPPORT

For purposes of discussion it is useful to classify the various kinds of financial support available to graduate students in type of support and by the source of funds used (see Figure 1).

CLASSIFICATIONS

Fellowships

Fellowships are grants awarded directly to students usually on the basis of merit, typically including tuition and a stipend. The term "scholarship" is sometimes used as well to refer to a grant that covers tuition but carries no stipend.

Assistantships

These positions are in the form of research assistantships (R.A.s) and teaching assistantships (T.A.s), and they typically include a salary portion and some tuition remission and require students to work. T.A.s perform instruction-related duties, such as lecturing, conducting classes, reading and grading papers, and they are paid through the university's instructional budget. R.A.s assist faculty members on funded research projects and are paid from the grant or contract administered by the faculty member.

Traineeships

As currently provided by the National Institutes of Health (NIH) and Alcohol, Drug Abuse and Mental Health Administration (ADAMHA) training grants, traineeships are blocks of fellowships awarded to institutions for research training in the biomedical and behaviorial sciences. Training grants are awarded through national merit competitions among institutions, which, in turn, award traineeships to their students.

Work-Study

This is a federal program giving partial support (some tuition allowance and salary) to graduate students, who meet students' financial need requirements. Students work under the supervision of a faculty member on projects of direct educational interest.

FIGURE 1

SOURCES OF SUPPORT

Major Types of Support	Federal Government	State Government	University Sources	Student/ Family	Other Outside Sources
Fellowships	NSF Fellowships	State Fellowships/Scholarship Programs	University Fellowships		Private Corporation Fellowships
Research Assistantships	Federal Research Grants College Work-Study		University Research Support		Private Foundation Research Grants
Teaching Assistantships		Direct State Appropriation to University Budgets	University Operating Budget		
Traineeships	NIH, NIMH Training Grants				Private Corporation Traineeships
Other	Federal Guaranteed Student Loans National Direct Student Loans	State Guaranteed/ Administered Student Loans	University Loans	Personal Savings, Off-Campus jobs, Private Loans	Employer Support

Loans

This program usually refers to the federally guaranteed student loan programs, namely National Direct Student Loans (NDSL) and Guaranteed Student Loans (GSL). Of course, other formal methods of support exist, such as university loans, private bank loans, veterans' (G.I. bill) or Social Security benefits, and support from employers and unions. There are also less formal methods, such as personal loans from family and support from a working spouse or partner.

One of the most striking features of graduate student financial support, when compared with undergraduate financial aid, is how loosely coupled the elements of an individual graduate student's support "package" can be. During the course of doctoral studies, students may, and many frequently do, receive several different types of support, such as, fellowships, assistantships, loans, and work programs.[24]

The particular types of support available to graduate students differ by academic area. For example, in certain science disciplines, there exists a substantial number of research assistantships and traineeships, as well as fellowships, teaching assistantships and loans. In the humanities, on the other hand, there is a much greater reliance on teaching assistantships, with little research support available.

The stipend rate--the salary a graduate student earns while holding a fellowship--varies considerably from one institution and academic department to the next, although there is considerable uniformity among the major research universities. It is not uncommon for a student in the humanities to earn only half the stipend a student in one of the sciences or engineering might earn.

Financial support in first-professional degree programs, such as law, business or medicine, is almost always in the form of loans. Students in law and medicine, for example, rarely serve as teaching assistants or research assistants because, such support is not relevant to the training of the majority of future professional practitioners. Doctoral students in a field such as physics, on the other hand, are almost certain to serve both as teaching assistants and as research assistants in the course of their study because the discipline considers teaching and research experience an integral part of the academic training. Master's degree students, because they generally spend less time in graduate school, may be unable

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[24]National Research Council, Summary Report.

to gain enough experience to serve as either teaching or research assistants. At major research universities the majority of available support is channeled to doctoral students. The vast majority of departments either preclude Master's degree students from fellowship or assistantship support or only award such support under exceptional circumstances to especially qualified Master's students.

Again, this differs by discipline. In engineering, for example, where more and more highly qualified students choose high-paying jobs in industry rather than the relative poverty of graduate school, many departments can only attract a handful of students into doctoral degree study--the vast majority apply for M.S. (Master of Science) or M.S.E. (Masters of Science in Engineering) degrees. In an effort to try to keep those students with the most promise in school, some of the "best" available support, that is, fellowships paying the most money and denoting greater "merit," are now awarded to Master's students.

OVERALL TRENDS IN SUPPORT

A review of the data on types and sources of graduate financial support leads to the findings below:

- The amounts and types of fellowship support available to graduate students have declined over the last decade.

- The basic system of allocation support on the basis of "merit" continues to dominate the distribution of funds administered by graduate institutions and departments. Due to cuts in federal and private sources of fellowship support, however, a dual system of support now exists, wherein students borrow the difference between any "merit" support they receive and the total direct cost of attending graduate school. In addition, many graduate students now rely upon loans as their principal source of support.

- There is a growing trend on the part of the major financial support sources (external to the universities) to reduce the average amount of awards granted, in effect covering less of a student's total costs.

- The use of federal College Work Study (CWS) has partially compensated for the decline in other forms of federal support of graduate students.

- Federally guaranteed student loans have become an integral part of the support of graduate education.

FELLOWSHIPS, TRAINEESHIPS AND ASSISTANTSHIPS

The amount and types of support available to graduate students has changed dramatically during the 1970s. The most significant change has been the virtual elimination of federal fellowships. In the late 1960s, there were over 60,000 federal fellows and trainees; in 1980, there were less than 19,000. The source of this decline is not hard to discover. The National Defense Education Act (NDEA) Title IV fellowship program, which supported 15,000 students in 1968-69, ended in 1973. Gone as well are 5,000 National Science Foundation (NSF) traineeships, 1,600 NIH fellowships, and National Aeronautics & Space Administration (NASA) and Atomic Energy Commission (AEC) fellowships and traineeships. What remains is essentially 4,000 NIH and ADAMHA training grant recipients (down nearly one-half from peak levels) and 1,500 NSF merit fellows (down nearly three-quarters from the peak). The result is that, whereas the federal government supported more than one of three full-time doctoral science students in 1969, it supported less than one of four in 1980.[25]

The decline in federal fellowships was offset in several ways. First, federal research assistantships increased as a result of increases in federal research support. Second, support from institutions--fellowships, research assistantships, and teaching assistantships--increased in the 1970s. And, third, the amount of self-support by graduate students--parents, loans, work--increased significantly.

Federal support in the humanities and social sciences also remains meager. The NDEA Title IV fellowship, which was oriented towards these fields, no longer exists. Only a small number of private foundations remain as major sources of graduate student support--while the Mellon Foundation has recently announced a new humanities fellowship program, the Danforth, Ford and Woodrow Wilson fellowship programs have all been discontinued recently. And, the major federal fellowship programs (excluding NSF) that remain support about 4,000 new and continuing students. Federal outlays for graduate student support, which peaked in fiscal year 1973 at about $1.3 billion, decreased to just over $800 million in fiscal year 1977.

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[25]National Science Foundation, Graduate Student Support and Manpower Resources in Graduate Science Education, Fall 1969 (Washington, D.C.: NSF, 1970); and National Science Foundation, Academic Science-Graduate Enrollment and Support, Fall 1980 (Washington, D.C.: NSF, 1981).

LOANS

At major doctorate-granting institutions, there is an observable increase on the part of graduate students in the use of loans to finance their graduate studies. Hooper and Kurshler, for example, in a recent survey of selected graduate institutions conducted in conjunction with COFHE, found that, while the federal fellowship portion of graduate student support as a percent of required finances is decreasing, the proportion of graduate student support attributable to loans is increasing.

A recent COFHE survey of doctoral admissions in arts and sciences and engineering found that more than half of those responding expect to carry educational debt by the end of their graduate studies. As might be expected, estimated educational loan debt varies considerably from one individual to another depending on circumstances, and varies even more by area of study (as do actual amounts and types of support available). What is surprising is that about half of the admitted doctoral students in all the areas surveyed expect to incur graduate debt, even in science and engineering programs where, relatively speaking, more graduate support is available than in the humanities.

The change in graduate student expectations and in actual practice is corroborated by the Fund for the Improvement of Postsecondary Education (FIPSE) study results as well as several institutional self-studies, by Princeton and Stanford to name but two.

A recent survey of graduate students at Princeton found that averages of current eduational loan debts range from $4,600 to $7,000. At Stanford University, based on a recently completed survey, more than half of all survey respondents expect to complete their graduate studies carrying total educational debt (undergraduate plus graduate) averaging $9,500. About 60 percent of the doctoral students responding either have or expect to incur educational debts; about 70 percent of the Master's level respondents expect educaticnal debt by the time they complete their present degree studies.

The reported cumulative graduate loans incurred by current students averaged $5,500 for doctoral students (an average of 3.3 years into their doctoral studies), $7,250 for M.A. students and $5,600 for M.S. students. The figures are consistent with the FIPSE results and with our understanding of current available support at these institutions.

These figures suggests that generally graduate students are frugal borrowers. Doctoral students are accumulating debt at a more modest rate per year than Master's students but have

several more years of studies to finance. Master's students, on the other hand, appear to borrow more, probably due to the fact that considerably less support is available to them. The strong impression is that educational debt financing has become an integral part of graduate studies across the whole range of graduate degree programs in arts and sciences, humanities and engineering.

Central to any discussion of recent and emerging trends in graduate student support is information about graduate student participation in the federal guaranteed student loan programs, National Direct Student Loans (NDSL) and Guaranteed Student Loans (GSL). Also important is graduate stude participation in the College Work-Study Program (see Ta. e 3). In fiscal year 1981 more than one-half million graduate students borrowed an estimated $1.02 billion through GSL; 66,300 graduate students borrowed $15.8 million through NDSL; and 49,000 were partially supported by Work-Study funds totaling $27.5 million.

TABLE 3

ESTIMATED GRADUATE STUDENT PARTICIPATION IN USDE LOAN AND COLLEGE WORK-STUDY PROGRAMS, 1963-1981

Fiscal Year	National Direct Student Loans		Guaranteed Student Loans			College Work-Study Programs	
	Number of Students (thousands)	Federal Capital Component ($ millions)	Number of Approvals (thousands)	Amount Borrowed ($ millions)	Federal Interest Payments ($ millions)	Number of Students (thousands)	Amount ($ millions)
1963	13.0	$ 5.4					
1964	14.8	6.5					
1965	19.2	7.8					
1966	22.7	10.8	4.4	$ 7.0	$ 0.0	11.0	$ 2.2
1967	23.7	10.6	29.7	22.4	1.0	12.0	5.4
1968	25.7	10.7	46.4	39.2	2.8	14.1	5.4
1969	27.4	11.0	70.9	61.8	4.4	15.4	5.7
1970	27.1	11.3	82.9	75.6	9.3	17.0	5.9
1971	33.7	13.6	97.3	94.0	13.3	24.0	9.5
1972	36.9	17.2	113.1	117.1	17.8	NA	10.9
1973	37.3	16.3	96.8	101.0	19.1	22.2	10.8
1974	41.4	17.4	114.4	175.4	34.2	22.2	10.5
1975	48.3	22.4	148.6	194.7	31.4	25.6	18.9
1976	59.6	25.0	189.5	266.8	36.9	40.4	22.6
1977	63.6	25.6	145.9	230.5	33.7	46.4	27.3
1978	65.4	24.9	162.7	293.8	37.2	41.2	22.7
1979	78.1	25.3	241.6	477.4	47.3	46.1	27.3
1980	73.0	23.3	393.3	822.8	65.6	48.7	27.3
1981	66.3	15.8	560.0	1,020.0	109.3	49.0	27.5

SOURCES: Estimated figures based on National Board on Graduate Education, Federal Policy Alternatives Toward Graduate Education. (Washington, D.C.: National Board on Graduate Education, 1974); Frank J.Atelsek and Irene L. Gomberg, Estimated Number of Student Aid Recipients, 1976-77. (Washington, D.C.: American Council on Education); Robert J.Jacobson, "Denying Loans to Graduate Students," The Chronicle of Higher Education, February 17, 1982; and U.S. Department of Education, Office of Student Financial Assistance, OSFA Program Book, July 1981. (Washington, D.C.: U.S. Department of Education, 1981).

CHAPTER SIX: PROPRIETARY VOCATIONAL SCHOOLS

EXECUTIVE SUMMARY

Proprietary vocational schools are organized as profit-seeking institutions and are thus distinct from public and private vocational schools, all of which are nonprofit. Although proprietary schools provide most of the postsecondary vocational training in this country, relatively little is known about their operations or the way in which student aid is used.

The average proprietary school is small and exists in a high-risk environment. Because student tuitions are proprietary schools' sole source of revenue, these schools must be more responsive than other schools to studen and labor markets in order to survive. They are also susceptible to the adverse effects of competition from publicly subsidized community colleges. Federal student aid has accounted in large measure for the growth of the proprietary school industry, and as long as student aid is a significant share of student tuitions, federal policies will likely exert a powerful effect on the schools' behavior.

History shows that the profit-seeking incentive has led some proprietary schools to unethical and dishonest practices. However, the industry appears to have undergone substantial reforms within, making such practices more the exception than the rule. There is evidence that the schools profit-seeking structure achieves certain efficiencies not found in public schools that carry benefits for students and the public. For

example, with the assistance of federal student aid, proprietary schools effectively reach low-income students. Programs are short and intense; thus, although students pay relatively high tuition charges, they finish their programs faster and are in the labor market sooner, earning money to offset their school costs. Either because of their motivation, the schools' structure, or both, proprietary school students are one-and-a-half times more likely to complete their programs than public students. Available research indicates public and proprietary students experience similar job placement and earnings once in the labor market.

Proprietary schools' incentive structure apparently influences the way they package student aid, maximizing the use of grants, probably to aid recruiting and, to the extent possible, minimizing loans. Because of proprietary schools intense class schedule, work packaged as aid plays a relatively small part in student assistance. Proprietary students still have the largest unmet financial need of any type of student, which they apparently make up in a variety of ways not recorded by the school.

Insofar as data permit generalizations, proprietary schools appear to have high rates of compliance with federal aid requirements. Their students' National Direct Student Loan (NDSL) default rate averages slightly higher than the rate for public and private four-year college students, but is substantially lower than that of two-year public college students.

INTRODUCTION

While most policy makers have assumed public community colleges and two-year private (nonprofit) schools to be the chief suppliers of school-based vocational training, proprietary schools now represent two-thirds of all postsecondary vocational schools and currently enroll nearly three-quarters of all postsecondary vocational students, including those attending both residential and correspondence schools. Most proprietary vocational students are from the lower ranges of socioeconomic status and thus depend heavily on federal student aid. Consequently, proprietary schools and their students have become important considerations in federal student aid policy.

BACKGROUND

Until the end of the Second World War, proprietary schools operated in relative obscurity. Then a series of scandals, in which unscrupulous school operators bilked GIs out of their educational entitlements, thrust proprietary vocational schools into the public eye.[1] A number of states enacted license laws providing minimal regulation, which proved largely ineffective in thwarting school operators bent on misrepresentation or fraud.[2] Thus, the publicity that accompanied each new disclosure ensured a continuation of the industry's tarnished image.

At the same time, conventional wisdom pointed to the rapidly expanding collegiate system as the route to employment rather than lower-level vocational training, particularly in proprietary schools. Second, the widely held assumption that profit making and education were inherently incompatible probably helped darken the image of proprietary schools. Until the end of the 1960s most schools operated virtually without regulation. However, a few proprietary schools with junior college status in mind sought regional accreditation. The

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[1]M. Berry and E. Dunbar, "The Proprietary Vocational School: The Need for Regulation in Texas," Texas Law Review, December 1970, pp. 66-127.

[2]U.S. Federal Trade Commission, "Proprietary Vocational and Home Study Schools," Final Report to the Federal Trade Commission and Proposed Trade Rule (16CFR part 438) (Washington, D.C.: U.S. Government Printing Office, 1976.)

debate that surrounded a school's bid for regional accreditation in the notable case of Marjorie Webster Junior College exposed the stubborn assumption that a school's interest in profits would overshadow its concerns for its students and the quality of their education.[3] More recently the Sullivan Junior College of Business forced the Southern Association of Colleges and Schools, under threat of losing its federal recognition, to accept it as a member. One member of the federal committee which investigated the school's complaint, commented that the conflict was "indicative of the education establishment's strong resistance to the accreditation of proprietary schools."[4]

During the past decade, however, the influence of an oversupply of college graduates seeking jobs, combined with a slower-growing economy, reduced students' expectations about the economic returns of attending college and refocused policy makers' attention on shorter-term vocational education. At the same time, the burgeoning federal investment in student aid attracted the attention of the proprietary school industry, which successfully pressed for recognition as a legitimate part of postsecondary education. With the passage of the Higher Education Act of 1972, proprietary schools were admitted to the postsecondary education community and became eligible to receive increased federal student aid.

Finally, the Federal Trade Commission's (FTC) attempt to regulate the industry, as the consumer movement swept the country, had a profound impact on reforming the proprietary school industry. By the 1970s public exposures of proprietary schools' deceptive sales and recruiting practices had become commonplace, underscoring the impotence of state regulatory law, pointing to the need for federal intervention. Based on the record, the FTC in 1979 promulgated a Trade Regulation Rule that would require schools to provide students with information about dropout and graduation rates, have a pro rata refund policy, and allow students a "cooling-off" period during which they could cancel a school contract without penalty. FTC staff warned that without such regulation, high government-insured loan default rates would occur.[5]

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[3]Marjorie Webster Junior College, Inc. v. Middle States Association of Colleges and Secondary Schools, Inc., Federal Supplement, vol. 302, District Court, 1969, Washington, D.C., p. 459.

[4]Chronicle of Higher Education, March 26, 1979, p. 11.

[5]U.S. Federal Trade Commission, "Revision to Trade Regulation Rule Pertaining to Proprietary Vocational and Home Study Schools (16CFR 438; Revision)," Washington, D.C., undated memorandum, p. 7.

Industry representatives successfully challenged the rule. In January 1981, the Commission staff recommended a revised rule which will be considered in January 1983. However, many observers believe that the schools' stiff opposition to the rule in the current antiregulatory climate to the proposed FTC reforms may have reduced the FTC's enthusiasm and ability to press for regulation.

INDUSTRY REFORMS

Industry representatives, concerned with negative public opinion and the likelihood of regulation began to improve industry practices. The four accrediting groups--National Home Study Council, National Association of Trade and Technical Schools, Association of Independent Colleges and Schools, and the Cosmetology Accrediting Commission--and some of the larger firms began to adopt some of the key aspects of the regulation sought by the Federal Trade Commission. For example, Control Data Corporation, which in 1979 had 22 technical institutes and had been in litigation with the FTC, adopted an "absolute" pro rata refund policy, meaning that students paid only for time they actually attended classes. In the late 1960s, accrediting commissions began to adopt written enrollment agreements and specific catalog content for schools seeking accreditation. Memberships in most accrediting associations flourished. Except for a 35 percent decline in accredited correspondence schools, between 1969 and 1979 the National Association of Trade and Technical Schools registered a doubling of its member institutions, and the number of business schools accredited by the Association of Independent Colleges and Schools increased more than one-and-a-half times.

PROPRIETARY SCHOOLS AS BUSINESSES

Because proprietary schools depend entirely on student tuition for revenue, they must be highly sensitive to shifts in student and employment demand. As federal student aid has made up an increasingly larger share of student tuitions, these schools are increasingly affected by federal student assistance policies. However, because proprietaries are businesses first and schools second, their ways of cost-cutting, increasing market shares and revenues, and minimizing risks are often misunderstood by educators and policy makers or interpreted as marks of low-quality education. Underscoring the observation that most schools have a fragile hold on existence, William D. Hyde, in his study of Illinois proprietary schools, found evidence that student demands for training were positively related to both prevailing wages and unemployment rates. The

schools, less than half of which had capital assets in excess of $30,000, occupy a sensitive brokering position between the student market and the changing labor market.[6] They are small nationally--60 percent of private vocational schools enroll less than 100 students each according to 1978 data from the National Center for Education Statistics (NCES)--and are highly leveraged, meaning that a dollar in assets often generates two or three dollars in profit.[7] Thus, Hyde points out, a few students can make the difference between a profit and a loss. He describes how, in one typical school, a one-percent decline in revenue produced a 60 percent decline in profits, pointing to the central importance of cost control.

Schools' rates of return on assets averaged 14 percent in Hyde's study. However, risks in the business are considerable and profits are volatile. During one year the most profitable schools had rates of return of over 100 percent, while 25 percent suffered losses.

Proprietary Schools vs. Public Two-Year Schools

A competitive relationship exists between public two-year schools and proprietaries. While the FTC record leaves the impression that there is little competition between the two sectors, Hyde's study documents some detrimental effects of competition from publicly subsidized community colleges on proprietary schools. Indicating their sensitive and dependent relationship to external events, Hyde showed how during a period of rapid community college expansion, proprietary school failures increased 50 percent and proprietary enrollments collapsed, shifting to the publicly subsidized community colleges. In the analysis of a single proprietary school, Hyde recorded a 77 percent decline in enrollments when a community college opened nearby.

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[6]William D. Hyde, Jr., Metropolitan Vocational Proprietary Schools (Lexington, Mass.: D.C. Heath and Co., 1976).

[7]U.S. Department of Education, NCES, Enrollments and Programs in Noncollegiate Postsecondary Schools, 1978, Table A-3 and pp. 34-35. The table did not distinguish between private nonprofit and proprietary schools.

SCHOOL PROGRAMS AND ENROLLMENTS

As of 1978, 75 percent of the 5,814 proprietary vocational schools operated as independent entities, 16 percent were chains and 7 percent were branches of other noneducational organizations.[8] No reliable data exist on the percent and size of schools owned by larger corporations, or total revenue produced by the industry. According to one account, the top ten companies operating vocational schools in the United States in 1979 owned more than 60 schools and produced revenues of $225 million.[9]

As of 1980, the proprietary industry was the largest school provider of postsecondary vocational training. The 5,993 residential and 82 correspondence schools comprised nearly two-thirds of all postsecondary schools offering vocational education. Approximately 67 percent of these schools are either accredited by one of the four accrediting associations or approved for veterans. Public schools represented 22 percent of postsecondary vocational education and private, nonprofit schools, the remaining 14 percent.

Student enrollments in 1980 followed a similar pattern. Proprietary residential* and correspondence schools together accounted for 72 percent of all postsecondary enrollments--residential schools had 54 percent and correspondence schools 18 percent of total postsecondary vocational enrollments. Public schools, regional occupational centers, technical schools, community colleges and some four-year colleges with vocational programs enrolled 25 percent of all postsecondary vocational students. Private, nonprofit schools, most of which were hospital programs, enrolled the remaining 3 percent.[10]

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*"Residential" does not imply students live in the school, but merely distinguishes these schools from those that offer home study.

[8]Ibid.

[9]SRI International, "The Outlook for the Proprietary School Industry." Discussion Draft of a Final Memorandum Report, Project #8354, Menlo Park, 1979.

[10]U.S. Department of Education, NCES, Enrollments and Programs in Noncollegiate Postsecondary Schools, 1980, Washington, D.C., unpublished preliminary estimates, 1981.

Cosmetology and barber schools were the largest group of proprietary schools (37 percent), as noted in Table 1. However, they enrolled only 11.4 percent of all students, with an average school size of about 62 students. At the other extreme, the 82 correspondence schools represented only 1.5 percent of total proprietary schools, but 28 percent of all proprietary school enrollments. Half of the correspondence school students were studying through four correspondence schools, each with an average size of 33,000 students.[11]

Columns 3 and 5, headed "Percent Change 1974-78," in Table 1, reveal a significant trend. As the third column shows, only trade and business and secretarial schools registered any positive growth in numbers of new schools between 1974 and 1978. Cosmetology and barber schools declined in number by 9.9 percent, and flight schools by more than 28 percent. These figures alone suggest a decline in the industry, but the fifth column clarifies the pattern. Except for flight schools, which show a loss in both numbers of schools and students, enrollments in business schools increased 37.4 percent between 1974 and 1978, trade school enrollments increased 22.8 percent and cosmetology and barber schools 16.5 percent. Apparently, the growth in enrollments in these years (which was not experienced by public schools which registered a .4 percent decline in students) stemmed more from the expansion of existing schools than the creation of new ones. This interpretation is reasonable in light of federal requirements developed in the early 1970s, that eligible schools must have been accredited and giving instruction for at least two years to qualify for the most attractive federal aid programs.

STUDENT CHARACTERISTICS

Proprietary vocational students appear to be remarkably similar to their counterparts in two-year public schools. They generally come from the lower end of the range of socioeconomic status and academic ability.[12]

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[11] Ibid., 1978.

[12] Wellford W. Wilms, Public and Proprietary Vocational Training: A Study of Effectiveness (Lexington, Mass.: D.C. Heath and Company, 1975).

TABLE 1

DISTRIBUTION OF PROPRIETARY SCHOOLS AND ENROLLMENTS, AND NUMERICAL CHANGES IN SCHOOLS AND ENROLLMENTS BY TYPE OF PROGRAM, FOR SELECTED YEARS*

Type of Program	Total Number of Schools 1980≠	Percent Change 1974-78#	Total Enrollments, 1980	Percent Change 1974-78≠
Business and secretarial	1,348	.3%	423,100	37.4%
Cosmetology and barber	2,125	-9.9	132,400	16.5
Flight	926	-28.3	62,600	-16.1
Trade	739	3.5	116,100	22.8
Arts	233	--	32,400	--
Allied health	220	--	42,600	--
Other	221	--	29,700	--
Correspondences§	82	--	321,600	--
TOTALS	5,746		1,160,500	

*329 schools with enrollments of 89,000 students are not included because changes in NCES definitions made calculations across these years difficult to interpret. Dashes indicate data were not available.

≠4,017 or 71 percent of all residential proprietary schools are accredited or approved to receive federal financial aid. The major categories of these schools include: business schools, 731; cosmetology and barber schools, 1,710; flight schools, 712; trade schools, 398; arts schools, 136; allied health, 161; and other schools, 22.

#Figures include a small number of private, nonprofit schools and students, which have only a minimal effect on data presented.

§Number of schools as of 1978; NCES data for 1980 not available when table compiled.

SOURCE: U.S. Office of Education, NCES, Enrollments and Programs in Noncollegiate Postsecondary Schools, 1978. Data for 1980 were estimated by Evelyn R. Kay, National Center for Education Statistics, July 1982.

PROGRAM CHARACTERISTICS

Residential proprietary school programs average about half as long as comparable programs in the public sector.[13] Motivated as profit-making institutions to use their resources efficiently, proprietary school programs demand more class hours each day, making them more intense than public programs. Consequently, proprietary school students are less available for work outside the classroom than their public counterparts. Lacking many of the general education courses found in public programs, proprietaries pack concentrated skill training into relatively few hours.

Proprietary schools are keenly sensitive to the costs of instruction which they minimize by paying teachers, on the average, 65 percent of the amount their counterparts earn in the public sector. They also deploy their teaching staff with costs clearly in mind, using lower-cost teachers more intensively than higher-cost teachers. In all cases, proprietary school instructors carry a substantially heavier teaching load than vocational instructors in public schools. Further, proprietary schools hire, retain and promote their teachers on their demonstrated ability to teach. Instructors in proprietary schools do not get tenure, and school management personnel are subject to frequent evaluations.[14]

PROGRAM COSTS

Preliminary 1980 data from the National Center for Eduation Statistics indicate a wide variation in proprietary school costs.[15] Charges, which include tuition, fees, books and equipment, run from $170 for a 54-hour course in real estate to about $3,500 for a 2,700-hour course in electronics. Correspondence courses tend to be less expensive, but generally program length and number of lessons have less bearing on costs than special equipment. For example, a correspondence course in flower arranging with 23 lessons takes an average of nine

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[13]Ibid.; and U.S. Department of Education, NCES, Enrollments and Programs in Noncollegiate Postsecondary Schools, 1978, 1978.

[14]Wilms, Public and Proprietary Vocational Training, 1975.

[15]U.S. Department of Education, NCES, Enrollments and Programs in Noncollegiate Postsecondary Schools, 1980.

months to complete and cost $228. At the other extreme, a civil technology course that requires substantial equipment with 37 lessons, takes an average of eight months to complete and costs $2,986.[16]

Beneath this surface, as the National Center for Education Statistics notes, proprietary costs by themselves may be misleading, particularly when compared with costs in public schools, which in 1978 averaged 20 percent of private school costs.* As mentioned earlier, proprietary school programs are more intense than public programs, with students spending more time in class each day. However, they are considerably shorter than public programs, often lasting only half as long. Consequently, though proprietary students may pay a higher tuition charge than public students, they usually complete their shorter programs more quickly and are available for employment sooner, thus reducing their foregone income. Job placement and wage rates for public and proprietary graduates were similar.[17] In cases where proprietary schools kept their courses to a minimum length, average educational costs were less for those students than for students in public schools. Researchers at the Stanford Research Institute[18] modified these calculations, adding postgraduate income earned by proprietary students, while public students were still in school, and calculated net comparative education costs. Proprietary school students had 51 percent net costs of public school students enrolled in computer programming, 30 percent enrolled in auto mechanics, 60 percent in electronic technician programs and 27 percent in secretarial courses. Medical- and dental-assistant students had fully recovered their costs before public school students had completed corresponding programs.

COMPLETIONS, JOB PLACEMENT AND EARNINGS

Allegations of high dropout rates for both correspondence and residential proprietary schools have been reported in the

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*National Center for Education Statistics data include a small proportion of private, nonprofit schools which cannot be separated from the whole.

[16]Ibid., 1978.

[17]Wilms, "Public and Proprietary Vocational Training," 1975.

[18]SRI International, "Outlook for the Proprietary School," pp. 27, 28.

popular press and before congressional committees for years. The Federal Trade Commission cites dropout rates showing 60 percent of all proprietary students withdrawing before completing one-quarter of their courses.[19] Given the nature of correspondence programs that require rigorous self-discipline and the vulnerability of low-income students to some schools' hard-sell techniques, high dropout rates seem plausible.

Residential proprietary students persist as well, if not better, than students in public vocational schools. For example, the National Center for Education Statistics reported that 46 percent of public vocational students in 1978 successfully completed their courses, compared with 63 percent of private school vocational students.*[20] These findings conform to a longitudinal study of a sample of public and proprietary school students, indicating that proprietary students were about 1.5 percent more likely to complete their programs than public students.[21] Although it is impossible to determine accurately why proprietary school students complete their programs more frequently, there are a number of plausible explanations. First, proprietary school programs are shorter and more directed at specific employment than the longer and more general public programs. Second, proprietary school students pay substantial tuitions for their training, which may serve as an added source of motivation to complete them.

Completion rates for correspondence students are slightly more than half those for residential students.[22] However, as mentioned earlier, considering the self-discipline necessary to

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*National Center for Education Statistics data include a small proportion of private, nonprofit schools, which cannot be separated from the whole.

[19]U.S. Federal Trade Commission, "Proprietary Vocational and Home Study Schools."

[20]U.S. Department of Education, NCES, Enrollments and Programs in Noncollegiate Postsecondary Schools, 1978.

[21]Wellford W. Wilms and Stephen Hansell, "The Dubious Promise of Postsecondary Vocational Education: Its Payoff to Dropouts and Graduates in the USA," International Journal of Educational Development, Spring 1982, pp. 43-59.

[22]U.S. Department of Education, NCES, Enrollments and Programs in Noncollegiate Postsecondary Schools, 1978.

complete a correspondence course, the 34 percent completion rate is not surprising, and compares substantially with completion rates in university-based correspondence programs.[23]

Graduates of residential proprietary schools are employed at the same rate as public school graduates although they were in school, on the average, about half as long. Research indicates that proprietary schools can cut their programs to at least half the length of public programs with no loss in placement or earnings for their graduates. Few reliable data are available on correspondence students' job placements and earnings.

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[23]Wellford W. Wilms, Evaluation of the University of California's Independent Study Program, unpublished technical report, University of California, Berkeley, 1976.

[illegible] ASSISTANCE

With the exception of Veterans Administration programs, the chief financial assistance programs used by proprietary school students are those authorized by Title IV of the Higher Education Act of 1965. They are the Pell Grant (formerly known as the Basic Educational Opportunity Grant, or BEOG), the Supplemental Educational Opportunity Grant (SEOG), National Direct Student Loan (NDSL) and the Guaranteed Student Loan (GSL). The College Work-Study (CWS) program and the State Student Incentive Grant are also available to proprietary students. The current GI Bill consists of three programs: Chapter 31, Vocational Rehabilitation; Chapter 34, Veterans Educational Assistance; and Chapter 35, Survivors and Dependents Educational Assistance. Because Chapter 34 accounts for 88 percent of the Act's total enrollments and 86 percent of its costs, this paper omits Chapters 31 and 35.

With the exception of the GSL program, the programs authorized by the Higher Education Act carry identical institutional requirements. With a few minor exceptions, institutional eligibility requirements for proprietary schools are the same as those for nonproprietary postsecondary vocational institutions. A school is eligible to participate when it admits students with a high school diploma or equivalent, or students beyond compulsory school age (without a diploma) who can benefit from training. A school must be legally authorized by the host state to provide a postsecondary program which must lead to a degree or certificate, and prepare students for gainful employment in a recognized occupation in not less than six months, or 600 hours. Finally, the school must be accredited by a national accrediting association recognized by the U.S. Department of Education, and have given instruction for at least two years.

The eligibility guidelines for Guaranteed Student Loans are more liberal, allowing schools to enroll people who have not completed elementary school if they can benefit from the training. Programs can last a minimum of 300 clock hours (as distinguished from academic hours or units) and schools, if not accredited, can be approved by a state agency. Some proprietary school representatives say that minimum course length requirements encourage schools to lengthen, rather than shorten, their programs, thereby inflating educational costs.

For a proprietary school to be eligible for the GI Bill, it need only be approved by a state agency as to the quality of its staff, adequacy of its facilities and recordkeeping, and

have an acceptable refund policy to qualify. The 93rd Congress amended the approval requirements so that all vocational schools receiving aid must demonstrate that at least 50 percent of the students find jobs for which they were trained (PL 93-508).

Overall, both the U.S. Department of Education and Veterans Administration eligibility requirements appear to treat proprietary schools remarkably similar to other schools.

RECIPIENTS

A recent study of U.S. Department of Education student aid programs described how institutions "package" financial aid sources.[24] Proprietary schools have put more emphasis on grants, which were targeted toward low-income students, and less on returnable aid (loans) and work than two-year public schools do. Further, the study noted that proprietary students have substantially higher costs than two-year public school students, and, after all aid is taken into account, have the highest remaining unmet need.

Proprietary school students proportionately use considerably more nonreturnable aid (grants) over returnable aid (loans) and work. A number of reasons seem plausible in explaining this pattern. First, proprietary schools' incentives cause them to enroll as many qualified students as possible. To most students a grant is a far more attractive inducement to pay a relatively high tuition than a loan. Second, because of proprietary schools practice of scheduling classes more intensely than public schools do in order to shorten program length, students are less available for outside work. Also, because few proprietary schools participate in the College Work-Study program, most proprietary students' work is arranged individually and not recorded as part of an aid package by the financial aid office. Finally, the study explains that the less intensive use of BEOGs in two-year public schools probably stems partly from the grant's $200 minimum, the lower costs of public schools and the BEOG

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[24]Applied Management Sciences, Study of the Impact of the Middle Income Student Assistance Act (MISAA), Final Report, prepared for the U.S. Department of Health, Education and Welfare, Office of Evaluation, Washington, D.C., 1980.

half-cost limitation.*[25] (See Table 2 for the rates of participation of students from all postsecondary schools in each aid program.)

In 1973-1974, 14,000 proprietary school students, about 8 percent of all BEOG recipients, claimed $3.5 million in BEOG funds, or 7 percent of the total program. In that same year, public two-year school students received 24 percent of the program, and private two-year school students, 3 percent. In 1973-1974, the average BEOG grant for a proprietary student was $242. By 1979-1980, as Table 3 shows, proprietary students' share of the NDSL increased from 2 percent to 8 percent of the program, and average award fell from $1,332 to $674. Some of the shift from NDSL represents an increased reliance on the GSL which is not shown. But it is also plausible that the shift partly represents a substitution of grants for loans as the grant programs grew and the Middle Income Student Assistance Act increased student eligibility (see Table 3 for the distribution of selected aid programs for proprietary students over a number of years).

According to an official at the National Home Study Council, which accredits correspondence programs, member schools are moving away from participating in the GI Bill program. Only 12 schools now participate, though they account for substantial numbers of students, and funding authorized for the Veterans Administration contained no funds for correspondence programs in fiscal year 1982.

COMPLIANCE AND DEFAULT IN PROPRIETARY SCHOOLS

Data on compliance with federal aid regulations and default rates by type of program for proprietary schools are extremely limited. An Applied Management Sciences study, however, revealed that on the basis of data drawn from a small sample, a high proportion of proprietary schools appear to

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*Half-cost limitation means that the Basic Grant award cannot exceed one-half the students' expenses for tuition, fees and living costs.

[25]Applied Management Sciences, Study of Program Management Procedures in the Campus Based and Basic Grant Programs, Final Report. Vol. 2: Who Gets Financial Assistance, How Much, and Why?, prepared for the U.S. Department of Health, Education and Welfare, Office of Evaluation, Washington, D.C., 1980.

TABLE 2

PERCENT OF ALL POSTSECONDARY UNDERGRADUATE STUDENTS RECEIVING SELECTED FORMS OF FINANCIAL ASSISTANCE BY INSTITUTION, ACADEMIC YEAR 1978-1979*

	Aid Programs				
	BEOG	SEOG	NDSL	CWS	State
Proprietary	53%	14%	20%	2%	10%
wo-year private	28	5	7	16	12
Two-year public	26	5	23	22	27
Four-year private	27	13	4	8	7
Four-year public	29	9	13	10	16
ALL SCHOOLS	29	9	12	11	15

*Data for the Guaranteed Student Loan Program and the GI Bill are not available.

SOURCE: Applied Management Sciences, Study of Program Management and Procedures in the Basic Grant and Campus Based Programs (G-129) Final Report, vol. 1: The Institutional Administration of Student Financial Aid Programs, prepared for U.S. Department of Health, Education and Welfare, Office of Evaluation, Washington, D.C., 1980, Table 5.4.

TABLE 3

DISTRIBUTION OF DOLLARS, RECIPIENTS AND AVERAGE AWARDS BY SELECTED FINANCIAL ASSISTANCE PROGRAMS FOR PROPRIETARY VOCATIONAL SCHOOLS, ACADEMIC YEARS 1973-1974 AND 1979-1980*

	1973-1974				1979-1980			
	Cost in millions	As % of total program	Recipients	Average award	Cost in millions	As % of total program	Recipients	Average award
BEOG	$3.5	7	14,000	$ 242	$252	10	239,000	$1,054
SEOG	---	---	---	---	25	8	62,000	559
NDSL	6.9	2	5,200	1,332	51	8	76,000	674
Veterans (Ch. 34	---	---	810,000	---	---	---	190,000	---

*There are no reliable figures available on Guaranteed Student Loans; only the numbers of recipients are available from the Veterans Administration.

SOURCE: U.S. Department of Education, Office of Student Financial Assistance, OSFA Program Book, Washington, D.C., July, 1981; and Veterans Administration, Office of Reports and Statistics, Veterans Benefits Under Current Educational Programs, Fiscal Year 1981, (Washington, D.C.: U.S. Veterans Administration, February 1982.)

comply with NDSL financial counseling requirements.[26] Proprietary schools reported the lowest incidence of grant overawards, and the second highest overpayment recovery rate. The study also reported that proprietary schools act sooner on delinquent loans than other types of schools, with most of them quickly turning delinquent accounts over to collection agencies. Although proprietary school students had a relatively high default rate (19.1 percent), it was only 2 percent higher than that of four-year public school students. On the other hand, two-year public school students defaulted nearly one-and-a-half times more frequently (27.9 percent) than proprietary students.

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[26]Applied Management Sciences, Study of Program Management Procedures in the Basic Grant and Campus Based Programs. Vol. I: The Institutional Administration of Student Financial Aid Programs, prepared for the U.S. Department of Health, Education and Welfare, Office of Evaluation, Washington, D.C., 1980.

CHAPTER SEVEN: CORPORATE EDUCATION AND TRAINING

EXECUTIVE SUMMARY

Research on education and training in industry has been fragmented and without uniformity. Data have been difficult to collect because corporations do not themselves know the answers to the questions being asked, and because information on corporate training and education is sometimes proprietary. Although it is not possible to quantify accurately the activity, we can identify certain characteristics of corporate involvement and the factors that influence it. Such information is important in understanding the implications of corporate education and training in the larger context of postsecondary education.

Corporate-based education and training serves the needs of several populations: youth and entry-level workers, dislocated and retrained workers, and, of course, employees at all levels of management. It is overwhelmingly job-related and tied to employment. As a result of the diversity of target groups, corporate involvement touches on, or is central to, several areas of public policy: school-to-work transitions and youth employment, employment opportunities for women and minorities, productivity, retraining, skills imbalances in the work force, and postsecondary education needs and finances.

Most of what goes on in corporate programs is training: job-specific and company-specific--clearly the responsibility of the business. A smaller but growing sector of corporate

activity overlaps the domain of postsecondary institutions and traditional institutions, through company-sponsored tuition-aid programs and, in some cases, as competitors with colleges and universities.

The total expenditure for corporate-based education and training has been estimated at $30 billion to $40 billion annually. Employee participation in in-house courses has been estimated at 13 percent; 80 percent to 90 percent of corporations offer tuition-aid programs, but employee participation in tuition-aid programs ranges from 3 percent to 5 percent, highly underutilizing the resource.

Several factors determine, and will continue to influence, what corporations do in education and training as well as how they will do it. First, the primary motivation is need--they will do what they think they need to do, no more and presumably no less. What they need will be influenced by a set of factors: demographic trends indicating fewer entry-level workers and an aging work force; technological change indicating new, different, and continuing retraining needs; the continued decline in the rate of productivity, and the relevance of human resource development to that issue; and, finally, what skills and abilities their employees bring with them.

How they meet their needs will be determined in part by what is available through traditional education institutions. Whether corporations increase their role as providers will depend upon the answers to two questions: first, do education and training pay off in efficiency, productivity, and profitability and, second, is it cheaper for them to buy this service or do it themselves?

The context for this kind of decision making is changing slightly with the development of a human capital investment strategy in some corporations. This represents a broader concern for optimizing individual performance as well as organization performance.

Additionally, three trends in the postsecondary world may have some impact on the relative importance of the corporate sector in this area: the shift of students' concern toward more vocational needs, the increasing cost of attending colleges and universities, and the reduction in the availability of student financial aid.

The convergence of increased corporate involvement in education and training and changing student needs have some implications for planners of postsecondary education. This convergence may influence individual decisions about postsecondary education, altering the pattern of schooling and

the focus of education for some, perhaps many. For traditional institutions, the potential market represented by corporation contracts and joint ventures may be increasingly attractive as financial pressures increase. This may encourage institutional changes to enable collaboration to occur along with all that that may imply for curriculum, financing procedures, scheduling and faculty issues.

The importance of these implications argues for a more complete knowledge and better understanding of this sector of postsecondary education than is now available.

BACKGROUND

Factory schools run by businesses, such as Western Electric, Goodyear, Ford, and National Cash Register--the companies responsible for the development of the new technologies--proliferated in the late 1800s and early 1900s.[1] During the First World War, companies, needing management skills, established links with colleges and universities to provide programs for their employees. There was little need for industrial training during the Great Depression, but the war years that followed with greatly expanded and more complex industrial activity created a new demand for industry-based education and training. The emergence of new industries in the postwar period of the late 1950s and early 1960s similarly created new training and retraining demands.

The 1860s and 1870s created additional demands with changes in the profile of America's industrial base--more service industries and fewer manufacturing industries, as well as changes in the work force brought about by changes in social values in society, the entrance of a greater proportion of women into the work force, affirmative action programs, and the large numbers of youth seeking employment. Corporations responding to these needs began developing human resource development strategies--going beyond the traditional job-specific training which characterized most programs, by providing a spectrum of training ranging from remedial skills to top-level management development. Human resource development is concerned with overall competence of the work force; its goal is organizational as well as individual performance, and it views skills development as a continuous process.[2]

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[1]Steinmetz, C.S. "The History of Training," in Training and Development Handbook, ed. by R.L. Craig (New York: McGraw-Hill, 1976), p. 6.

[2]Robert L. Craig and Christine J. Evers, "Employers as Educators: The Shadow Education System," in New Directions for Experimental Learning: Business and Higher Education--Towards New Alliances, No. 13, ed. by G. Gold (San Francisco, Jossey-Bass 1981).

CORPORATE-BASED EDUCATION AND TRAINING

SCOPE AND MAGNITUDE

A variety of data sources exist today which can assist in compiling a snapshot view of current corporate education and training.*

The following information is derived from a study done by Harold Goldstein published by the National Manpower Institute:[3]

- Formal training is done by less than one half of all business firms, but is conducted by more than eight out of ten large firms (those having more than 500 employees).

- The number of workers involved in training, broadly defined, is one out of five in large companies; fewer than that across all firms.

- Training is mostly given in company-sponsored courses during working hours.

- Most training is directed toward skill development.

- Much skill development training is targeted at management and other white collar workers.

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*Although this data can be useful for making certain general statements, certain caveats must be issued. Some of the sources are old and the information they provide is clearly outdated; further, each of the sources represents some select portion of the corporate sector and it is unwise to generalize, for example, from one industrial sector to another, or from large corporations to small corporations. Finally, definitions of education and training differ from one data source to another and, for example, the inclusion or exclusion of on-the-job training can make a difference of a factor of two or more in numbers of students.

[3]Harold Goldstein, Training and Education by Industry (Washington, D.C.: National Manpower Institute, 1979). See "Summary of Source Principal Studies" in Corporate Education and Training, pp. xx-xx.

• Blue collar workers get a disproportionately small share of formal training--most of their training is specific, skill-on-the-job training and thus not included in most data sources.

With regard to expenditures, the American Society for Training and Development (ASTD) estimates that $30 billion to $40 billion is spent annually by industry for education and training. This figure is approximately equal to the amount being spent in public postsecondary institutions. The ASTD figure includes:

> expenditures for in-house (employer-provided) education and training--instructors' salaries; hardware and software; training facilities; research, design, planning, administration, and evaluation of the training/development function; tuition assistance for employees; seminars and workshops; consultant services, related travel and living expenses; correspondence courses and other forms of self-study media, plus indirect cost of overhead allocation. It does not include the costs of wages and salaries of those being trained.[4]

In the context of postsecondary education overall, the corporate sector has a very large enrollment; experts estimate that 11 million "learners" are in traditional postsecondary education institutions, and 53 million are as "work period" learners, that is, individuals involved in work-related deliberate learning experiences.[5]

Another way of assessing enrollment is to view corporate programs in the context of adult education. Business and industry, according to the National Center for Educational Statistics (NCES) data for 1978, offered 11 percent of the 28,894 adult education courses that year; 42.1 percent--the largest portion of the courses--were offered by employers[6] (see Table 1).

These generalizations define the scope and magnitude of corporate education and training. In addition, however, other characteristics may be identified from existing data which,

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[4]Craig and Evers, "Employers as Educators," p. 31.

[5]Richard E. Peterson et al., Toward Lifelong Learning in America: A Sourcebook for Planners (Berkeley: Educational Testing Service, 1978).

[6]U.S. Department of Education, NCES. The Condition of Education, 1981, p. 24.

TABLE 1

COURSES IN ADULT EDUCATION, BY TYPE OF PROVIDER OF INSTRUCTION, YEAR ENDING MAY 1978

Provider of Instruction	Number of Courses (in thousands)	Percentage Distribution
School	16,554	57.3%
Elementary, Junior, or high school	2,725	9.4
Two-year college or vocational-technical institute	5,321	18.4
Four-year college or university	5,666	19.6
Vocational, trade, or business school	1,933	6.7
Other school	909	3.1
Business or industry	3,165	11.0
Labor organization or professional organization	1,086	3.8
Government agency	2,445	8.5
Private community organization	2,394	8.3
Tutor or private instructor	1,338	4.6
Other	1,268	4.4
Did not know	100	0.3
Not reported	544	1.9
TOTAL	28,894	100.0
Employer-provided instruction for employees		
School	1,146	24.2
Business or industry	1,998	42.1
Labor organization or professional association		
Government agency	985	20.8
Private community organization	116	2.4
Other	283	6.0
TOTAL	4,741	100.0

Note: Figures may not add to totals because of rounding.

SOURCE: U.S. Department of Education, NCES, Condition of Education, 1981, p. 24.

although they may not yet be accurately quantified, provide a more detailed picture of the nature and motivation for corporate training.

CHARACTERISTICS

First, corporation education and training is based on need--industry does what it feels it must do--no more and presumably no less. As a result, it is functional and mission-oriented. Courses and programs are built on needs assessment. Company needs are defined by both internal and external factors: internally by the specific requirements of the job to be done and the company setting; externally by the skills employees already have and the external resources available to help meet employer needs. The latter qualification is particularly relevant in fields with rapidly changing technologies--often industry is on the cutting edge of knowledge development and must themselves provide the education and training required. The Wang Institute is a good example of such a situation: when the Wang Corporation could identify only three university programs offering Masters' degrees in computer softwear development, they developed their own degree-granting program.

An important external factor in deciding what companies will provide for their employees is whether traditional education institutions can be flexible in the way they deliver courses and design programs. Often industry's needs include practical, interdisciplinary approaches to substantive areas with flexible hours and scheduling.

The substance of corporate training courses is also an important issue. Most training is done in the area of specific skills development. Industry programs often include the following:

- sales training;
- safety training;
- management training;
- clerical and secretarial skills; and
- advanced skills.

These offerings are job-related and typically company-specific. They are clearly primarily the responsibility of business. Other programs clearly overlap the offerings of traditional schools and universities. For example, industry

generally provides its own basic/remedial education when the entry-level skills of new employees are inadequate, and it provides postsecondary level programs when such offerings are unavailable or inadequate to meet their needs, either in substance or delivery. Also, percent to 90 percent of companies offer tuition-aid to employees for courses taken at colleges and universities, generally requiring them to be job-related.

The organization of corporate-based programs is diverse, and is often determined by the size of the company and the nature of the business. Management training for first-level supervision and middle management in large corporations (1,000 or more employees) as well as job-specific training is largely done in-house.[7] Many corporations offer courses during company hours; others offer courses after work. Some large corporations (for example, IBM Xerox, Uniroyal) have highly centralized education and training programs. They operate full-service residential corporate education centers. Others have highly decentralized education and training programs with decisions made and delivery done at the plant level.

Some companies use full-time company instructors; others use personnel department employees on a part-time basis. Production employees are typically trained by foremen and supervisors. Corporations surveyed by the Conference Board, an independent, nonprofit research institute, also reported using consultants, training specialists, vocational, technical and business teachers and university professors.[8]

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[7]Mary Green Miner, Management Training and Development Programs, PPF Survey No. 116, (Washington, D.C.: Bureau of National Affairs, 1977).

[8]"New Data for Tuition Aid and On-site Training, 1964-1979," National Report for Training and Development, October 10, 1980, cited by Craig and Evers, "Employers as Educators," pp. 39-40.

COLLABORATIVE PROGRAMS

While most corporate education and training is done in-house, some companies have turned to local two- and four-year colleges to provide specialized courses for their employees. The American Council on Education recently completed a survey of the kind of collaborative programs or joint ventures 250 educational institutions have with industry.[9] The results of 188 institutions indicate a range of programs being offered at both public and private institutions. Thirty-one percent had programs dealing with education and training of employees; 32 percent used the facilities of corporations either to hold classes or use computers or laboratories; 18 percent said their instructors were teaching in corporate education and training programs; 12 percent had cooperative programs or internships, or both; and 6 percent of the responses focused on research and development programs. In terms of subject matter in these programs, the most frequently identified area was management training and development; the next most frequently identified focus was degree programs with courses taught at the work-site; also identified, in order of rank, were career transition programs, health science programs (for example, radiology, precision optics, nursing) and energy-related courses taught on-site.

One striking finding is that more programs of this kind have developed since 1981 than existed in the five years preceding 1981. These arrangements can make better use of resources and facilities, but, if they are to have staying power, important issues must be settled. Ernest Lynton, in a paper for the American Association for Higher Education, identified some of these issues. Often industry requires multidisciplinary courses which are sometimes difficult for colleges to orchestrate. Collaborative programs require curricula that encourage the transition from theory to practice, and often the traditional institutions are too traditional in their approaches. In addition, industry requires flexibility in delivery systems--courses taught at odd hours or on-site, to fit into work schedules and career

[9] Dorothy Fenwick, Business-Campus Linkages (Washington, D.C.: American Council on Education, forthcoming).

deve[illegible]pment p[illegible]terns [illegible] [illegible]ajor questions about
ac[illegible] [illegible] my ir[illegible] [illegible] curricula, and the
[illegible] [illegible] [illegible] [illegible]gs need to be resolved.[11]

[illegible] [illegible]am [illegible]eative programs involving
[illegible] [illegible] e ol[illegible] local industry.[12]

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Mary College
Bismarck, North Dakota
Catholic
Cooperative
Enrollment: about 980 students

Montana Dakota Utilities
North American Coal
Basin Electric Power

N.D. Association of Rural Electric Cooperatives
N.D. Office of Energy Management and Conservation

This program permits a traditional liberal arts college to explore technical alternatives and serves as a cooperative effort among the energy-related corporations in the area. The program is designed to meet the needs of the rapidly growing industry in the North Dakota region. Academic requirements for the Area of Emphasis in Energy Management program are 24 hours of specific energy-related courses in addition to the course work for the Business Administration degree. Course offerings have included "Energy Economics," "Energy: Government Regulations and Public Concerns" and "Research." One of the strengths of the program is the opportunity for students to gain practical experience through paid internship placements each summer during their academic programs.

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[10]Ernest A. Lynton, "A Role for Colleges in Corporate Training and Development," in Current Issues in Higher Education, No. 3: Partnerships with Business and the Professions (Washington, D.C.: American Association for Higher Education, 1981), pp. 8-15.

[11]Patricia Cross, "New Frontiers for Higher Education," Current Issues in Higher Education, pp. 1-7.

[12]Fenwick, Campus Business Linkages.

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Bethune-Cookman College
Daytona Beach, Florida
Private liberal arts college
Enrollment: 1,747 students, predominantly black

American Can
Honeywell
General Electric
IBM
Daytona Beach Chamber of Commerce
Kennedy Space Center
Other local private and government agencies

The goal of Partners in Progress, the name of this program, was to establish closer ties between the college and the local business community by providing the latter with services performed by Bethune-Cookman College and its students. To achieve that goal, a four-part plan was implemented:

- Symposia--a program in which national experts and consultants were invited by the college to provide specialized sessions in areas, such as human resource management, for the local business community.

- Seminars and Training--specific programs presented by the campus faculty in response to needs indicated by local businesses in such areas as inventory control, salesmanship, business math and production control.

- Special Studies--analyses and surveys conducted by Bethune-Cookman faculty and students on various business issues for area businesses.

- Job Bank--designed to provide a pool of well-qualified students for part-time and full-time positions, with an emphasis on career-related work experience, in the Daytona Beach area.

* * * * * *

Evergreen Valley College
San Jose, California
Community college
Enrollment: about 6,800 students

Lockheed
Memorex
IBM
Hewlett-Packard
Local businesses

This 10-week program, begun in 1980, was designed to provide individuals with a realistic view of the career possibilities in electronics. The participants, primarily

displaced homemakers, were given the opportunity to explore the areas of computer technology, drafting and electrical applications. Job tasks, actual working conditions and opportunities for career advancement were examined through classroom lectures and laboratory exercises at the Evergreen campus and supplemented by plant tours. Local businesses participating in the program allowed release time for some employees to serve as instructors.

COMPETITIVE PROGRAMS OR PROGRAMS IN AREAS OVERLAPPING WITH TRADITIONAL EDUCATION INSTITUTIONS

There are two areas in which corporate education and training overlap programs in traditional educational institutions. These are basic skills education at one end of the spectrum and formal, degree-granting programs at the other.

BASIC SKILLS PROGRAMS

In the area of basic skills, a study by the Conference Board in 1977 found that 35 percent of the large companies and 11 percent of all companies surveyed provided remedial education for employees.[13] Corporations view these programs as necessary but undesirable. Many feel their basic skills programs could be eliminated through more effective school programs. Some see them as an outgrowth of affirmative action programs. The examples show the scale and nature of these activities:

- AT&T has 14,000 employees at any given time taking courses in basic mathematics and writing on company time at an annual cost of $6 million.

- Illinois Bank and Trust Company offers a 20-week course in spelling, punctuation and grammar to all new employees.

- Polaroid established its own remedial and bilingual programs for employees ten years ago, after deciding that local schools and colleges could not provide the services the company required. Even more disturbing as a commentary on education, basic skills programs like these often provide instruction for employees with college and advanced degrees as well as for high school graduates.

DEGREE-GRANTING PROGRAMS

At the other end of the education spectrum are corporation-sponsored formal education and degree-granting postsecondary programs. Some were developed to fill a specific void in

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[13]Seymour Lusterman, Education in Industry (New York: Conference Board, 1977), p. 64.

TUITION AID PROGRAMS

Tuition aid programs have been studied by the National Institute for Work and Learning (NIWL), which defines tuition aid plans as "any formal arrangement through which a company ffers assistance to its employees for educational pursuits."[14]

Some plans are employer-initiated, some are negotiated by unions through collective bargaining. A study by NIWL in 1976-77 revealed four categories of tuition assistance:

- tuition reimbursement or advancement plans;
- education leave and leave of absence plans;
- scholarships and education loans; and
- training funds.

About 80 percent to 90 percent of the large firms offer tuition assistance, representing a financial commitment of $2 billion to $5 billion annually.[15] However, only 3 percent to 5 percent of eligible employees participate.

NIWL has examined low utilization of tuition-aid programs and certain structural, psychological and informational barriers have been identified.[16] Time, money and access appear to be the key structural barriers. Programs which provide tuition advances, flexible work hours, and have access to on-site or close-to-work course locations are more successful than those that do not. Polaroid and Kimberly-Clark, for example, require little or no advance payment from employees. Another factor which is associated with tuition-aid

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[14]Anne Rogers and Jane Shore, Making Tuition Work for You: An Action Guide for Managers, Labor Offic. .s, Workers and Educators (Washington, D.C.: National Institute for Work and Learning, 1980), p.4.

[15]Lusterman, Education in Industry, p. 32; and Rogers and Shore, Making Tuition Aid Work, p. 1.

[16]Rogers and Shore, Making Tuition Aid Work, p. 1.

programs is the requirement that courses be job-related; NIWL found greater use when flexible criteria were used by employers.[17]

The benefits to employers from tuition-aid programs include increased employee skills, reduced turnover and increased employee loyalty. Traditional institutions gain not only from the new market associated with employment-related courses taken under tuition-aid programs, but there is some evidence that such students often make continuing commitments to higher education. Thus, the individual and the public benefit as well from this relationship between corporation and the college or university.

The Employer Educational Assistance provisions of the 1978 Revenue Act provide an incentive to employee participation by excluding most emplcyer education assistance from employee income tax. The 1978 statutes will expire at the end of 1983, but legislation has been introduced to extend the prov sions permanently.

[17]Ibid., pp. 13, 14.

FACTORS WHICH WILL INFLUENCE FUTURE CORPORATE DECISIONS REGARDING EDUCATION AND TRAINING

PRODUCTIVITY

Productivity as a measure of efficiency takes on much greater significance in a highly competitive world market when companies are operating on a narrow profit margin. This heightened concern for productivity has implications for the education and training functions in corporations. A theoretical base exists for the relationship between education and productivity,[18] and corporations have developed policies which follow from this relationship. Once we go beyond the area of specific skill-on-the-job training, however, there is no solid data which ties education and training to output-per-person hour. In the semiconductor industry, some companies are attempting to reduce employee turnover and increase employee commitment through development programs. Intel, Rolm, Four Phase and Tandem are reported to have made such human resource development investments to "ensure maximum productivity on the job and rapid career advancement."[19] Exxon Corporation's administrative services department uses a cross-training technique which allows employees to cover for absent personnel and adds to diversity of individual jobs.

DEMOGRAPHICS

The changing demographics of the work force is another factor that will have an effect on the level of education and training done in industry. Declines in the birthrate ("baby boomers" are now in their thirties) mean a slower growth rate in the number of 16-to-25-year-olds by the 1990s. This has certain implications for the education and training functions of corporations. First, it will mean that industry will have to hire more than the "cream" of potential young employees.

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[18]Edward F. Denison, Accounting for Slower Economic Growth: The United States in the 1970s, Washington, D.C.: Brookings Institution, 1979); and Theodore W. Schultz, Investing in People: The Economics of Population Scarcity, (Berkeley: University of California Press, 1981).

[19]Thomas J. Murray, "Silicon Valley Faces Up to the 'People' Crunch," Dun's Review, July 1981, pp. 60, 62.

Unless dramatic changes take place in the public school systems, corporations will find themselves doing even more basic and remedial training. Additionally, the gradual aging of the work force means multiple retraining needs for each employee as industry's needs change. This brings us to a third factor that has a significant impact on corporate education and training activities.

TECHNOLOGY

The rapid and extensive changes occurring in technology affect a very broad base of American industry. These technological changes drastically change the requirements for participation in the work force. Some examples drawn together by Choate and Epstein illustrate the dramatic changes already underway:

- Peter Drucker forecasts the loss of 10 million to 15 million manufacturing jobs requiring more and different training.

- The American Electronics Association predicts the creation of 140,000 paraprofessional and 113,000 professional positions by 1985.

- The shortage of machinists predicted by the National Tooling and Machine Association is estimated at about a quarter of a million by 1985.

- The introduction of robots into American industry will create the need for a trained cadre of workers to operate and maintain them.[20]

In the computer field, Bureau of Labor Statistics data predict increasing demands for computer operators, programmers and systems analysts, while education and training in the schools lags behind, creating a widening gap between education and work (see Figure 1). Corporations' needs in these areas will determine what they do.

Another factor that influences what corporations do in education and training is the quality and relevance of education in precollegiate and other postsecondary programs. As stated earlier, there is no evidence to suggest that corporations do more than they think they have to do. What

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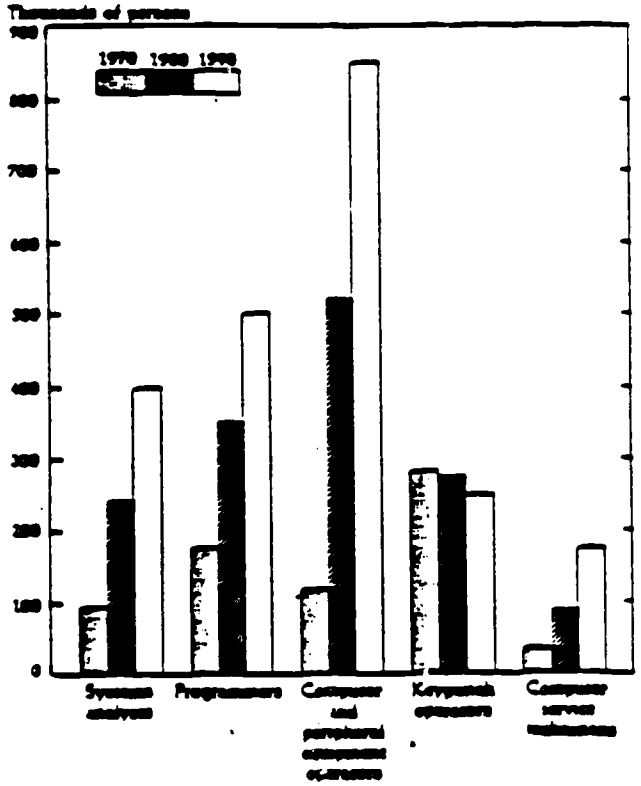
[20]Pat Choate and Noel Epstein, "Workers of America Retool," Washington Post, Outlook Section, May 9, 1982.

FIGURE 1

EMPLOYMENT IN COMPUTER OCCUPATIONS, 1970, 1980, and 1990



SOURCE: U.S. Department of Labor, Bureau of Labor Statistics, Employment Trends in Computer Occupations, Bulletin 2101, October 1981.

corporations offer, from job-specific-skills trai graduate-level accredited courses in technical, substan ve fields, is mission-oriented and designed to meet their needs and, therefore, not exactly comparable to offerings in other institutions. This does not mean, however, that students may not see this training as a viable if not preferable alternative to traditional education, especially when it is tuition-free and associated with a steady-paying job that will probably lead to advancement. In the past few years, especially, students appear to be more vocationally oriented than formerly.

TRENDS

There is general agreement that the corporate education and training sector of postsecondary education is growing. The significance of its growth may be amplified by three notable trends in the postsecondary world: the shift of students' concerns toward more vocational needs, the increasing cost of attending colleges and universities, and the reduction in availability of student financial aid.

The convergence of increased corporate involvement in education and training and changing student needs has some implications for planners of postsecondary education. This convergence may influence individual decisions about postsecondary education, altering the pattern of schooling and the focus of education for some, perhaps many. For traditional institutions, the potential market represented by corporation contracts and joint ventures may be increasingly attractive as financial pressures increase. This may encourage institutional changes that will enable collaboration to occur along with all that that may imply for curriculum, financing procedures, scheduling and faculty issues.

The importance of these implications argues for a more complete knowledge and better understanding of this sector of postsecondary education than is now available.

SUMMARY OF SOME PRINCIPAL STUDIES ON CORPORATE EDUCATION AND TRAINING

Each of the studies below, derived from Harold Goldstein's Training and Education by Industry, represents an important contribution to what is known about corporate education and training. Unfortunately, no comprehensive survey has yet been done, and it is not possible to mesh the sets of data available as they are not comparable in definitions, variables, samples and so on.

Lusterman, Seymour. Education in Industry. New York: Conference Board, 1977.

- Sample included only large companies--500 or more employees.
- Information is based on a 22 percent response rate representing 610 companies.
- On-the-job training was not included.
- No data on small businesses.
- Findings indicate: of the respondents, 89 percent had tuition aid programs; 70 percent offered company courses during working hours; 39 percent had after-work company courses; 74 percent offered outside courses during working hours.
- Ninety-six percent of the large firms had more in-house/during work hours courses.
- One out of five employees was participating in available corporate education and training.
- Finance companies had the highest participation rate: 20 percent.
- Manufacturing companies had the lowest participation rate: 7 percent.

U.S. Department of Labor, Bureau of Apprenticeship and Training, Training of Workers in American Industry, 1962. Washington, D.C.: U.S. Department of Labor, 1965.

- Looked at formal classroom training only; no data for on-the-job training.
- One out of five firms reported formal training; 7 percent of workers eligible were enrolled.

U.S. Department of Labor, Bureau of Labor Statistics and Employment and Training Administration, Occupational Training in Selected Metal-Working Industries, BLS Bulletin 1976, FTA R&D Monograph 53, Washington, D.C.: U.S. Department of Labor, 1977.

- Focused on structured skill training.
- Seventy-one percent of training was to qualify workers for employment, 29 percent for skill improvement.
- On-the-job training was most common.
- Ten percent of the total number employed had been trained.

Bureau of National Affairs, PDF Survey No. 116, Management Training Development Programs. Washington, D.C.: Bureau of National Affairs, 1977.

- Data collected from 75 large companies (1000 employees or more), 39 small companies.
- Types of training available: in-house most common for first-level supervisors, 75 percent; professional trade association meetings, 96 percent; and outside seminars, 89 percent were most commonly used for middle management.
- Forty-seven percent of firms surveyed had decentralized programs.
- [illegible] percent did all training and education in one [illegible]on.
- [illegible]st range reported per per[illegible]on: supe[illegible]isors: $20-$585; middle management: $20-$1,000.

American Telephone and Telegraph Company, AT&T, Corporate Tuition Aid Plans, 1977: Report on a Survey of Outside Companies and Bell System Companies, 1977.

- Surveyed 100 of the Fortune 500 and 23 Bell System companies.
- Ninety-three percent of the companies had tuition aid programs.
- Eighty-three percent do not pay for courses which are not job-related and/or do not lead to a degree.
- Sixty-two percent of participants are nonmanagement.
- Twenty-seven percent of participants were lower management.
- A decline in the use of tuition aid programs was noted from 5.3 percent in 1972 to 3 percent in 1978.

Abramovitz, Mimi. Where are the Women?: A Study of Worker Utilization of Tuition Refund Plans. Ithaca: Cornell University, 1977.

Study focused on the use of tuition aid programs as a part of affirmative action programs. It identified two major structural barriers to utilization: the restriction to job-related courses and the use of reimbursement process as opposed to payment in advance.

O'Neill, Joseph P. College Financial Aid and the Employee Tuition Benefit Programs of the Fortune 500. New Jersey: Conference University Press, 1981.

- Raw data available from 361 companies--no tabulations.
- Responses to Education Benefit Program questionnaire.

U.S. Department of Education, National Center for Education Statistics, The Condition of Education, 1981. Washington, D.C.: U.S. Government Printing Office, 1981.

The adult education statistics included in this report are from the 1978 Tri-Annual Report on Participation in Adult

Education which is included in Condition of Education, 1981. Additionally, early reports were released in July 1982 on the 1981 Report on Participation in Adult Education. Time did not permit an analysis of changes between 1978 and 1981 with one exception: in 1978 employers were identified as providing approximately 24 percent of adult education; in 1981 that figure rose to approximately 33 percent, a substantial gain in employer-provided education.

CHAPTER EIGHT: EDUCATION AND TRAINING IN LABOR UNIONS

EXECUTIVE SUMMARY

BACKGROUND

There are about 24.4 million labor union members, representing 20 percent of the total work force in this country. Union membership is greatest in heavy industry, utilities, mining, construction, transportation, teaching and the federal government.

There are 174 national and international unions and 34 employee associations, classified as unions, that vary in size from two million to less than one thousand members. Most unions belong to the AFL-CIO. Unions' principal functions, in their order of importance, are:

- labor relations-collective bargaining;
- grievance-arbitration;
- strikes;
- union security;
- legislation and political activities; and
- education and training (a priority in craft unions).

UNION EDUCATION

There are four types of labor education programs provided by unions:

Labor Education

This program, the most wide ranging of all labor education and training programs, focuses on preparation for leadership and is often taught at colleges and universities.

Apprentice Training

High-skilled training for workers age 18 to about 26, costing nearly $80 million annually. These programs are offered by unions, management, the federal government and community colleges, usually acting in some combination.

Vocational Education

Short-term education programs, generally provided by a union and another organization or funding source.

Self-improvement Education

Consists of courses in reading, writing and arithmetic that are designed to help members improve their job status and enrich their lives outside the workplace.

AFL-CIO EDUCATION AND TRAINING FUNCTIONS

The principal functions the AFL-CIO performs for its members are in the areas of legislative and other policy development, technical assistance and trade union education and training programs.

OTHER EDUCATION AND TRAINING FINANCIAL SOURCES

Corporations, led by the auto industry, provide tuition refunds to workers taking certain courses. Some companies offer paid educational leave to managerial, technical and professional workers, generally, who take courses in their professional fields. Unions have also developed educational trust funds, currently valued at from $200 million to $1 billion, and many unions provide scholarships to members' children.

BACKGROUND: THE TRADE UNION MOVEMENT IN THE UNITED STATES

The trade union movement in the United States represents about 24.4 million workers.[1] Farm workers, factory operatives, construction craftsmen, miners, public employees (federal, state, county, city, town, school districts), actors, airline pilots, university and college professors and medical doctors, deep sea divers, among others, are union members. Some occupational groups or industries are more heavily organized than others. Certain sections of the country, such as the Northeast, Middle Atlantic, Midwest and Far West, are more heavily organized than others, namely the South, Southwest and Rocky Mountain. Some union memberships cut across the entire country, such as the letter carriers and the postal clerks, whose jobs are in almost every community. Other unions, such as the auto workers, have the bulk of their members located in Michigan and the Midwest. Federal union members are concentrated in Washington, D.C., and at government regional headquarters or defense installations here and abroad. Union membership is more heavily concentrated in heavy industry, utilities, mining, construction, transportation, federal employment (which is 57 percent organized)[2] and teaching. The less organized sectors are among white collar, clerical, retail, technical and professional workers, although unions have begun to make inroads into these groups in recent years.

The organized work force of 24.4 million constitutes about 20 percent of the total work force.[3] This is one of the lowest percentages among industrial democracies.

The primary union organization in the United States and Canada is the international union that represents workers in both countries; the national union represents workers only in the United States. There are 174 national and international

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[1]AFL-CIO, Union Membership and Employment, 1959-1979 (Washington, D.C.: AFL-CIO Department of Research, February 1980), p. 15.

[2]Union Recognition in Federal Government, November 1981 (OLMR 82-4) May 1982, p. 21.

[3]U.S. Department of Labor, Directory of National Union and Employee Associations Bulletin 2079 (Washington, D.C.: U.S. Department of Labor, 1979), p. 56.

unions and 34 employee associations classified as unions according to the U.S. Department of Labor's survey of unions.[4] These union organizations vary in size from the largest single international union, the Internal Brotherhood of Teamsters, with two million members to unions of less than one thousand individual members nationally.[5] The union organizations are autonomous, independent of each other and the American Federation of Labor-Congress of Industrial Organizations (AFL-CIO), even if they are members of the "House of Labor." The international unions usually have two subordinate units, the district or region and the local union.

The national and international unions have approximately 63,721 local union affiliates.[6] Each of these local union affiliates may carry out the union's main function, collective bargaining, and a number of other functions, such as education, vocational training and apprenticeship training.

The majority of the international unions belong to the AFL-CIO and one or more of its membership departments and work cooperatively with the Federation on its political, legislative, educational, and international activities as well as other functions.

The AFL-CIO represents, according to its last Executive Board Report to the 1981 Biannual and Centennial Convention, approximately 13.6 million workers.[7] It is a voluntary organization that represents international unions which, in turn, represent their members. The AFL-CIO is supported by a per capita tax paid by the international unions primarily based upon their membership. The other source of operating income comes from the 23,839 members that belong to directly affiliated local unions and state and local central labor council charter fees and annual dues.[8] Monies that have been received from government and foundations grant sources are for specific purposes and cannot be spent except to carry out the grant purpose. With very few exceptions, the large amount of

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[4]Ibid., p. 55.

[5]Ibid., p. 61.

[6]Ibid., p. 73.

[7]"AFL-CIO Report of the Executive Council to the AFL-CIO Fourteenth Convention," November 16, 1981 (Washington, D.C.: AFL-CIO), p. 45.

[8]Ibid., p. 49.

accumulated funds that are in international union treasuries are funds dedicated to a purpose, such as pensions, life and health insurance, vacation funds, strike funds, and cannot be used except for the purpose they were collected. The majority of the national and international unions usually do not have enough money to carry out their basic representative functions, which in rough order of priority would include labor relations-collective bargaining, grievance-arbitration, strikes, union security, legislative and political activities. These are the primary functions that directly affect the members and as the unions' national and top local leaders are elected officials, they must serve the bread-and-butter function of the unions first, to maintain their elected positions, and if time, interest, money or necessity dictate, the leadership may move toward such things as education and training. The major exception to the order of priority would be in the craft union where apprenticeship training and journeyman upgrading may be placed ahead of the political and legislative functions.

UNION EDUCATION AND TRAINING PROGRAMS

There are four union education functions. Trade union organizations may provide one or more of the four areas of education and training or none of them. Less than one-half of the national and international unions do not provide education and training on an ongoing basis. Therefore, what follows will not apply to all national or international unions.

LABOR EDUCATION

Labor education is nonvocational and arises in major part out of the workplace and the organized worker's role as a worker and union member. It includes education for union leadership. In addition, labor education assists the worker to understand the developments within the worker's community, state, and nation as well as international issues that affect him. This enables the worker to become an informed and participating member of this democratic society.

Labor education is by far the most wide ranging of the educational categories that unions provide to their members either alone or in conjunction with universities and college labor education centers. About 25 percent of the institutional unions have ongoing educational programs.[9] Other international unions have occasional programs that are developed by their elected officers and staff, with or without the help of the AFL-CIO Education Department or universities with labor education centers. Many local unions within international unions may develop their own programs, using the facilities of their state university or community college. Today, university labor education centers develop programs with unions, through the joint planning process. Universities and colleges produce about 70 percent of the labor education programs. Unions provide about 25 percent. The remaining 5 percent of the providers are varied and include the Catholic labor schools, the Brookings Institution, the Federal Mediation Conciliation Service and the U.S. Department of Labor.[10]

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[9]John R. MacKenzie, "Labor Education," in Serving Personal and Community Needs Through Adult Education, ed. by Edgar J. Boone, Ron W. Shearman and Estelle E. White (Washington, D.C.: Jossey-Bass, 1980), p. 209.

[10]Ibid., p. 209.

There are 47 universities and colleges with labor education (noncredit) or labor studies (credit and degree) in 27 states, the District of Columbia and Ontario province in Canada. The number of university programs almost doubled during the decade of the 1970s from 27 to 47.[11] Labor education, in addition, went through a period of internal expansion with staff increases, primarily in the industrial states. A second area of increase was in the field of labor studies or credit and degree programs, with over 60 programs currently in labor studies ranging from the Associate to Master's Degree. The community college provides a particularly good vehicle for labor studies because it is located in the counties and cities where the workers live and work and the tuition is low enough for workers to continue their education.

The state university labor education centers develop labor education programs with union organizations through the process of joint planning (attempting to meet the present educational needs, rather than teaching a prepackaged program), developing the program at the state university and then carrying it out into the field to the workers' home communities or places of work. Labor education follows the cooperative extension model.[12] These programs might include union administration, how to run a union meeting, laws governing unions, courses in collective bargaining, grievance procedures and steward training, arbitration and the legislative process.

Unions, like business, medicine, engineering, law, education and public administration before them, began to call on the public university and college with increasing frequency to meet their needs, and the response began to build primarily in the industrial states. Now there are university and college programs in labor education or labor studies or both in 27 states.[13]

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[11]Pennsylvania State Universities, Department of Labor Studies, Directory of Member Institutions and Professional Staff 1982, University and College Labor Education Association (College Park, Pa.: Penn State University, Department of Labor Studies, 1982).

[12]Lawrence Rogin, "Labor Unions," in Handbook of Adult Education ed. by Robert M. Smith, George Aker and J.R. Kidd (New York: Adult Education Association of USA and MacMillan, 1970), p. 301.

[13]Pennsylvania State University, Directory of Member Institutions.

In the past 20 years the number of workers with high school diplomas has risen from 30 percent to 40 percent.[14] More workers are seeking entry at the university gate and the gates are slowly creaking open to admit the working adult.

Costs are borne by workers or by tuition aid programs that have been developed at the workers' place of employment through the collective bargaining process. Labor education costs, like most state unversity program costs, are partly subsidized by the taxpayers in each state in much the same way taxpayers subsidize the cost of schools of business, engineering, education, law and medicine. Unions have not supported the development of university and college labor education centers in each state as a matter of policy nor have unions developed a clear education strategy to meet their own needs. Unions, however, can and do assist the state universities and community colleges. Unfortunately, unions have had to be vigilant as a few business, industrial and conservative interests in certain states have worked against the trade union having access to state university programs and centers.

The lack of national union policy, occasional conservative opposition, union-member attitudes toward higher education and the fact that the labor force mix in the states varies has demonstrated the need for a national policy and support for labor education. And, there are cost-sharing arrangements between unions and the university and college labor education programs. The loss of time cost can be substantial, especially for week-long programs. The unions that do this on a more or less regular basis are making contributions to labor education that in many situations go beyond the program cost. When business sends its managerial, technical and professional employees to education programs their salaries continue. This is not usually the case for hourly employees. The average worker with his current income can ill afford to lose a week's pay so unions have to assist the worker with loss of time payments from their treasuries. In addition, business managers and professionals can write off some or all of the education cost through corporate or individual tax deductions. Workers, on the other hand, have to prove occupational relevance to obtain the same deduction. Some firms that provide their workers with negotiated educational fringe benefits may also provide additional payments for workers' taxes.

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[14] AFL-CIO, Union Membership and Employment 1959-1979 pp. III, 21-22.

APPRENTICE TRAINING

Apprenticeship training is the second major area of trade union training. It is high-skilled training that is "passed on" over a long period of time (two to four years), through a combination of one-on-one or small group on-the-job training combined with classroom training. The education and training is carefully designed so that it increases in complexity, and as the apprentice increases his skill, his pay increases.

The number of apprentices in this country in 1979, according to the Bureau of Labor Statistics, was 323,866.[15] The AFL-CIO estimates the union cost of apprenticeship at about $80 million.[16] The total cost estimate would be higher, especially if the cost of management-controlled programs is added.

With few exceptions, the apprentices today begin training after high school at about age 18 with a cut-off age of about 26. The age limitation is generally extended for veterans. In industry, the management of the firm will be the dominant force, controlling entry, the training process and the number of apprentices, with the union playing a lesser advisory or oversight role. In the building and construction trades, the local union and management set up joint committees in each craft and both sides usually pay for the training on a cents-per-hour-basis. The union usually appoints the apprentice training director and the apprentice instructors a dominates the selection and training process.

The federal government assists with the process through the U.S. Department of Labor's Bureau of Apprenticeship and Training. The Bureau through its regional staff attempts to develop programs with management and labor. Community colleges through their technical training programs working with management and labor, or both, are involved in apprentice training. However, figures on the extent of this training and the cost or shared cost are not readily available.

Community colleges are also involved in apprentice training by providing credit for such training as part of their degree programs. Unions such as the Operating Engineers and the Brotherhood of Electrical Workers are major supporters of these programs for their members. The AFL-CIO's George Meany

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[15]AFL-CIO Human Resources Development Institute figures based upon U.S. Bureau of Labor Statistics data.

[16]Interview with Edgar Czarnecki, Assistant Director of Education, AFL-CIO.

Center for Labor Studies has designed a program that ties the union, management and community college together in one system of education with the federal and state governments providing oversight and assistance.

VOCATIONAL EDUCATION

This is an area of education that provides short-term education, usually less than a year, to meet specific labor market needs. Unions usually provide this type of education in conjunction with another organization or funding source. The primary organization would be the business or industry through collective bargaining. Unions would want management to provide internal training in order to provide upward mobility for their presently employed members especially for long-term employees and employees who face a layoff because of changes in technology or product line. Management may provide the training through in-house sources, through the public school system, a community college or private source. Training monies may be put aside as a part of the collective bargaining agreement which calls for the funds for the training, or the funds may be requested from the public school system through federal and state government sources or the unions may pay for it themselves. Unions may receive federal, state or local manpower funds to provide training for their members or for others in their community, primarily the disadvantaged.

ion organizations have obtained grants from the Comprehensive Employment and Training Act of 1973, the Bureau of Apprenticeship and Training and other programs of the U.S. Department of Labor and elsewhere. From 1963 to 1976, labor organizations trained 265,000 persons in programs sponsored by the Department of Labor at a cost of more than $285 million, as follows:[17]

	Persons Trained	Funds
National on-the-job training	111,106	$107,695,000
Apprenticeship outreach	10,849	115,666,100
Promotion and development development)	112,000	20,632,900
Job Corps	31,070	41,151,600

[17]U.S. Department of Labor, Labor Organization Participation in National Employment and Training Programs (Washington, D.C.: U.S. Department of Labor, 1977).

SELF-IMPROVEMENT EDUCATION

This area of union education, which teaches members to read, write and do arithmetic computations, has been performed by unions alone in the private sector, with assistance from the public school system where the unions are located. In the past, many singular programs were developed by unions to assist their immigrant members to become more familiar with their new country and to be able to function and obtain citizenship.

Today, the issue of basic education and the ability of entry-level workers to function has been a major problem for manangement and unions and training has focused on basic skills and literacy. In fact, this area has become of such importance that the American Association for Adult and Continuing Education at its initial convention (merger of the Adult Education Association and National Association of Public Continuing Adult Education) in San Antonio, Texas, in November 1982 created a new section for business and industry that will devote itself to literacy issues.[18]

Local 1199, now District 1199, negotiated a collective bargaining agreement with the League of Voluntary Hospitals and the Hospital League/District 1199 Training and Upgrading Fund in July 1979. The fund received one percent of gross payable into the trust fund which was used to develop programs. The major education concern was health care. The primary union goal was to upgrade their members who were Licensed Practical Nurses (LPN) and nurses' aides-who were being replaced by registered nurses (RNs) with baccalaureate degrees. Increased education requirements were also being felt in the support areas, such as X-ray, respiratory therapy, laboratory technology and nuclear medicine. A second reason for the establishment of the fund was that 70 percent of the union's membership was black or Hispanic, and 85 percent was female. The most widely used and most basic preparation that the fund offers is remedial.[19]

What applies to District 1199, with allowances for industrial sector differences in New York and elsewhere, can be generally applied to other areas. The education funds are

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[18]American Association of Adult and Continuing Education Conference Program, San Antonio, Texas, November 11-16, 1982.

[19]Eric F. Shtob and Nathaniel Hackney, "Social Education: The District 1199 Training and Upgrading Fund," in Building New Alliances: Labor Unions and Higher Education, New Directions in Experimental Learning, Series No. 10, November 1980, pp. 31-32.

being used t ety of educational es he
members. The ograms meet the members where y
are and attempt co ove their status on the job, in the
industry and to provide opportunity outside of their industry
for self-improvement and cultural enrichment.

-CIO EDUC AND T ING FUNCTIONS

LEGISLATIVE-POLITICAL ROLE

The AFL-CIO provides legislative policy development that meets the needs of the affiliate international unions as well as that of the public generally. The policy development takes place through its biannual convention resolutions, that, once passed, are acted upon by the operating departments of the AFL-CIO. In the case of education, these would include the Department of Education, the Legislative Department and the Committee on Political Education. Once an education bill is drafted by the AFL-CIO and submitted to Congress, the AFL-CIO, the affiliate international unions and state and local central bodies lobby for the bill's passage. The AFL-CIO will also support education and training legislation sponsored by other organizations if it agrees with its intent. It may work to develop legislative initiatives with the several organizations. In addition to drafting and supporting education legislation and getting it on the books, the AFL-CIO will also support legislation on the appropriations side for education and training. The AFL-CIO's subordinate bodies, the state and local central bodies, perform the same function at the state and local levels. -

TECHNICAL ASSISTANCE

The second major area of AFL-CIO educational concern is technical assistance to affiliates as well as to universities, colleges, and occasionally to related organizations, such as the A. Philip Randolph Institute. The AFL-CIO's Department of Education develops an array of educational materials, workbooks, issue pamphlets and summer school manuals that are available to affiliates, universities and colleges, school systems and other groups, free or for a small fee. In addition, the department has an extensive film library that rents films for information, education and training. The department's professional staff may provide liaison with education associations and professional organizations, such as the Coalition of Adult Education Organizations which has 26 national organizations whose members are concerned with the education of adults.[20] They also serve on national boards, commissions and advisory councils where a formal or informal labor input is needed.

[20]Coalition of Adult Education Organizations, 1981-82 Leadership Directory.

TRADE UNION EDUCATION AND TRAINING PROGRAMS

The third area is the development of trade union education and training programs for unions and their affiliates. The two major educational training units are the AFL-CIO Human Resources Development Institute (HRDI) in the area of education and training and the George Meany Center for Labor Studies that combines labor education, credit and adult and cultural education. There are, in addition, a number of AFL-CIO operating and membership departments that sponsor education and training programs either generally or for the affiliates of the departments on issue-oriented programs, such as health and safety, social security, political education, community services, and so forth.

The AFL-CIO established the HRDI in 1968 to be its vocational training arm for assistance to affiliates and to develop training programs to assist the disadvantaged and to provide job opportunities through placement and training. HRDI provided 67,394 job opportunities from 1978 to September 1980 and 24,207 people were placed directly in jobs through the efforts of HRDI representatives in 59 metropolitan areas.[21] During this same period, HRDI developed 877 programs costing $46 million that offered financing and employment to 22,042 people. HRDI administered 24 targeted outreach programs, a nine-city handicapped placement program, a seven-city youth program, the Veterans Assistance Program, the Apprenticeship Opportunity Center in Houston, Texas, the Navajo Construction Industry Program and the Native American Apprenticeship Outreach program.[22] HRDI views its role as follows: "It is this dual role of serving labor and the disadvantaged that makes HRDI unique among the nation's organizations in the employment and training field. It is also the making of the common interests of the labor movement and the disadvantaged community that has made HRDI one of the most effective programs of its kind in the country."[23] HRDI is another example of the AFL-CIO linking its affiliates, the federal government (through funding, education and training) and business and industry with those needing training and jobs.

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[21] AFL-CIO, Report of the President of the Human Resources Development Institute to the Board of Trustees, 1978-79 Contract Period and to September 1980, p. 2.

[22] Ibid., Programs for Special Groups, pp. 1-8.

[23] Ibid., p. 4.

The Department of Professional Employees, like other membership departments of the AFL-CIO, affects postsecondary education through its research and training programs. This department's Committee on Scientific, Technical and Engineering Personnel, in 1980, developed a study group composed of eight department affiliates that visited three European countries to exchange views on technological change at the workplace. The department has distributed 6,000 copies of its report, "Cooperation or Conflict, The European Experience with Technological Change at the Workplace."[24] This department developed the Labor Institute of Human Enrichment which has developed a program in Employment and Training in the Arts that helped use apprentice standards of stage actors, animators and other technical occupations for the first time. It also developed cooperative arrangements with union employers and local governments to aid technical and professional workers. This program developed 3,000 jobs and training opportunities.[25] In 1980 the Labor Education Advisory Service was created within the Department under a grant from the U.S. Department of Education. The purpose is to provide technical assistance to unions and universities that will assist adult workers to participate in postsecondary education programs. It also attempts to increase the number of education programs open to adult workers. A third program, the Labor Arts Program attempts to provide technical assistance to unions that wish to make arts activities more available to their members and families.[26] The above provides one example of the education and training function of an AFL-CIO department that directly effects postsecondary education.

The crown jewel among the AFL-CIO and the labor movement education and training programs is the residential George Meany Center for Labor Studies, Inc., in Silver Spring, Maryland.[27] This program provides education and training, primarily to full-time union leaders from all AFL-CIO affiliates, at its central campus and sponsors specialized programs at university labor centers in various sections of the country. There were 4,000 students in 1980-81 attending one-week programs, covering such topics as arbitration, organizing, collective bargaining, new staff training, labor

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[24]AFL-CIO, "Report of the Executive Council," p. 319.

[25]Ibid., p. 322.

[26]Ibid., p. 323.

[27]Ibid., p. 71.

law, psychology for union leaders, computers, economics, grant writing, public speaking, union publications and other subjects. The Meany Center also sponsors a Bachelor of Arts in Labor Studies Degree program through Antioch College. The degree program has 213 members and 30 graduates.[29]

The Meany Center received grant monies to carry out several projects. One such project in oral history permitted 49 persons to be interviewed so that their story could add to the store of knowledge on labor history for future scholars. The funding came from the National Endowment for the Humanities.[30] A second project under federal funding was the Tripartite Program for Apprenticeship and Associate Degree in Labor Studies. The purpose was to initiate a working relationship between union-employer apprentice programs and community colleges. The project also commissioned seven texts that would be used in the program, which will be published by the Bureau of National Affairs.[31]

The American Institute for Free Labor Development uses the Meany Center to provide long-term education programs for Latin American and Caribbean unionists who come to this country for education on labor topics as well as industry tours. The Meany Center has great potential to provide a greater tie with postsecondary education and the trade union movement.[32]

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[28] Ibid.

[29] Ibid.

[30] Ibid., p. 72.

[31] Ibid.

[32] Ibid., p. 195.

OTHER FINANCIAL RESOURCES

TUITION AID BENEFITS

Corporate tuition refund plans became available in 1904. But this benefit was not available to workers until the United Automobile Workers' (UAW) contract with the big three--General Motors, Ford and Chrysler--in 1964. In 1980, the UAW auto industry agreement tripled the tuition refund from $350 to $1,000 for each worker enrolled in accredited degree programs and from $250 to $500 for certified craft training.[33] Other unions followed and the amount of potential dollars for education and training purposes rose to very high levels. However, there appear to be two major drawbacks to the use of these funds--union workers and management. Mangement often tightly restricts the use of the funds to direct job-related education and training and the worker may receive his tuition benefits after the fact. This may inhibit the worker from using the funds because of high tuition costs and training fees. The second problem is that union members are not taking advantage of the opportunity to use these funds. Several researchers who have examined this issue concluded that less than one percent of some blue-collar workers and only 3 percent of eligible workers made use of tuition refunds. However, where unions and management make special efforts, the workers do increase their use of the educational benefit.[34] The tuition aid benefit is not a cumulative fund. The monies that are available must be used each year.

EDUCATIONAL TRUST FUNDS

Unions have developed the educational trust fund where the money accumulates.

The trust fund may be used for labor education as well as apprentice, vocational or self-improvement education depending on how it is structured. This fund is usually developed through the collective bargaining process whereby the employer

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[33]Herbert Levine and Carroll M. Hutton, "Financing Labor's Role in Education and Training," New Directions for Experimental Learning Building New Alliances: Labor Unions and Higher Education, No. 10 (San Francisco: Jossey-Bass, 1980), p. 77.

[34]Ibid., p. 78.

agrees to pay either a blanket rate per employee or a cents-per-hour rate into the trust fund. The fund may be jointly managed by management and labor. The advantage of the trust fund is that the money accumulates.[35] The Amalgamated Clothing Workers of America's Chicago Joint Board negotiated an education fund which provided for scholarships for higher education for both members and their children, which, it was later discovered, was illegal until the Taft-Hartley Act was amended by Congress.[36] Since 1969, there has been a rapid growth of these funds among union organizations. One government employee union with 100,000 members has a benefit fund that accrues at the rate of $25 per member per year that generated a budget of approximately $2 million. Students in this union have a range of options open to them: they can choose job upgrading and training, remedial skill, college level courses available at the unions headquarters facility and courses on a college campus that lead to associate and bachelor's degrees in labor studies and applied social sciences.[37]

Local 3 of the International Brotherhood of Electrical Workers, AFL-CIO in New York City provides education and training for its members and their families. This local had a cultural trust fund balance in September 1973 of $10,789,165 with employer contributions of $2,152,537 and investment income of $179,200.[38]

The total funds available nationally to workers through the trust funds has not been established, but they are growing at a rapid rate; the total amount would probably be in the $200 million to one-billion-dollar range.

PAID EDUCATIONAL LEAVE

Another development is the use of paid educational leave for workers. This is new in the United States but the practice is well established in Europe for vocational education. Paid educational leave is available for managerial, technical and

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[35]Ibid., p. 79.

[36]Ibid.

[37]Lawrence M. Weinstein, "Labor Unions," in The Cost and Financing of Adult Education and Training, ed. by Richard E. Anderson and Elizabeth Swain Kasi (Lexington, Mass.: D.C. Heath and Co., 1982), p. 245.

[38]Levine, "Financing Labor Roles," p. 79-80.

professional employees but rarely for production and maintenance workers. The education community has long recognized sabbatical leaves and other forms of education as a necessity for professors and teachers. But few businesses have permitted educational leave for their production, clerical, or maintenance employees. Kimberly Clark Corporation is an exception and permits a controlled number of employees to go on leave with pay and at company expense to pursue education programs that meet company objectives.[39]

UNION SCHOLARSHIPS

Unions have also provided educational funds to their members' children through scholarships. The AFL-CIO reports that there is more than $2,225,000 in scholarship aid money available through international unions and state and local central bodies.[40] In addition, the AFL-CIO notes that its recent compilation of union scholarship funds merely scratched the surface. Union scholarships are usually awarded to the children of union members in good standing. However, certain of the international unions provide scholarships to their members as well as their children. For example, the International Brotherhood of Electrical Workers, AFL-CIO, offers 12 grants of $2,500 per year toward a bachelor's degree in specific fields,[41] and the American Federation of Television and Radio Artists offers eight scholarships to members or their children.[42]

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[39]Ibid., p. 81.

[40]AFL-CIO, AFL-CIO Guide to Sponsored Scholarship, Awards and Student Financial Aid, 1982-1983 (Washington, D.C.: AFL-CIO, 1982), p. i.

[41]Ibid., pp. I-5.

[42]Ibid., pp. I-1.

CHAPTER NINE: EDUCATION AND TRAINING PROGRAMS IN THE FEDERAL GOVERNMENT

EXECUTIVE SUMMARY

Training and education provided by the federal government falls into two broad categories: courses provided primarily for civilian federal employees and programs for the uniformed employees of the Department of Defense. The first category is by far the largest and provided training for 522,000 participants at a cost of $327 million in fiscal year 1980. The military category cost $163 million in fiscal year 1981, with $153.5 million expended for voluntary off-duty education. It is not possible to cite the total number of participants in military education programs as data is only kept on training loads (the average number of students participating in a course) which numbered 1.5 million in 1981.

Costs for training have steadily increased over the years while the number of training instances, hours of training and participants has decreased. The major educational emphasis has been on specialty and technical training during the last ten years, and these fields still account for 48 percent of the total training hours in federal programs. Postsecondary credit courses, basic skills and noncredit classes are almost equally popular in the military, attracting similar training loads.

Government sources provide approximately 80 percent of the training and nongovernment the remaining 20 percent in civilian programs. The military pays $73.5 million for tuition assistance and contracted instruction, of $153.5 million in total education costs.

BACKGROUND

Government training has grown rapidly since the enactment of the Government Employees Training Act (GETA) of 1958 (Public Law 85-507). The intent of the law was to provide training which would improve government productivity. Until that time there had been no governmentwide training or governmentwide entitlement, although some departments and agencies such as the Department of Defense, had received individual training authorities. In 1958, training programs were expected to cost about one million dollars.[1] Over the years the training programs have expanded and the training expenditures exceeded $327 million dollars,[2] for civilian employees and $163 million for military in 1981 (see Table 1).*

Since GETA was enacted, several other laws have affected federal training.

- Chapter 41 of Title 5, United States Code makes available to the head of every agency, the authority to establish training programs needed to develop the skills, knowledge, and abilities that will best qualify employees for the performance of official duties.

- The Equal Employment Opportunity Act of 1972 (Public Law 92-261) amended section 717(b) of the Civil Rights Act of 1964 to require federal organizations to provide a maximum opportunity for employees to advance to their highest potential.

- Section 501 of the Rehabilitation Act of 1973 (Public Law 93-112), as amended by Public Law 93-516 of December 7, 1974 and Sec. 403 of the Vietnam Era Veterans Readjustment Assistance Act of 1974 (P.L. 93-508) of December 3, 1974,

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*Fiscal year 1980 figures for military education and training programs were not available when this paper was written.

[1]U.S. General Accounting Office, Federal Personnel and Compensation Division, The Government Employees Training Act of 1958: A Progress Report, FPCD 77 66 (Gaithersburg, Md: U.S. Government Accounting Office, 1977) p.4.

[2]U.S. Office of Personnel Management, Workforce Effectiveness and Development, Employee Training in the Federal Service, Fiscal Year 1980 (Washington, D.C.: Office of Personnel Management, December, 1981) p.3.

TABLE 1

CIVILIAN FEDERAL TRAINING COSTS, HOURS, COURSES, AND PARTICIPATION FOR 1972-1980

	1980	1979	1978	1977	1976	1975	1974	1973	1972
Total costs (millions)	327.4	288.8	275.8	256.9	237.5	199.3	178.0	174.0	182.4
Total hours† (millions)	32.2	32.4	33.0	36.3	39.9	37.5	33.8	38.3	40.9
Average cost per hour†	$9.80	8.64	8.06	6.86	5.75	5.11	5.05	3.79	3.92
Total courses† (thousands)	828	880	807	883	957	863	732	959	946
Average cost per course†	$395.60	306.20	341.54	290.96	247.80	230.50	242.20	181.00	192.80
Participants (thousands)	522	504	516	556	609	550	not aval	959	946

*Reporting procedures differed in 1973 and 1974.

†Short-term training only 1974-80.

SOURCE: U.S. Office of Personnel Management, Employee Training in the Federal Service, yearly reports for years 1972-1980, (Washington, D.C.).

requires plans for the hiring, placement and advancement of handicapped individuals. Special training costs, such as interpreter fees, taped or Braille materials, are legitimate training expenses.

- Section 5364 of subchapter VI of Title 5 allows agencies to train an employee to obtain qualifications for a position in a different agency.

- The Civil Service Reform Act of 1978 (Public Law 95-454) included provisions for programs to develop candidates for, and members of, the Senior Executive Service; training to improve objectivity and fairness in the evaluation of performance; and retraining of employees' under reduction in force conditions.

CIVILIAN FEDERAL TRAINING AND EDUCATION

PURPOSE OF TRAINING

Employees receive training based on management's decision regarding an individual's need for training. These purposes are reported to the Office of Personnel Management, the most common of which is to improve present performance. This particular training provides the knowledge, skills, and abilities needed to improve or maintain proficiency in a present job (for example, training in telephone techniques for clerks or secretaries).[3]

Training to provide the knowledge, skills and abilities needed to meet future staffing needs through a planned career development program is another purpose of training. It includes executive managerial development programs, management internships, developing occupational specialities and programs to upgrade skills.

The government also provides training to develop unavailable skills--the knowledge and abilities needed for fields of work that are unique to the federal government. This includes training for staffing needs in occupations for which the labor market cannot produce a sufficient number of trained candidates. New work assignments are often listed as training purposes when such training is not a part of a planned career development.

Another offering, training for new technology, is identified as a reason for training when abilities are required to keep abreast of developments in the employee's field or a related field. Examples include the application of new technology, advances in the state of the art, and training programs in the use, maintenance or repair of new and advanced electronic equipment.[4]

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[3]Kent Lloyd, Gail Christensen and Elaine Reuben, "Interagency Task Force Report on Federal Government Staff Development & Training," Report to the Assistant Secretaries for Management Group, photocopy (Washington, D.C.: Interagency Task Force, 1982) pp. 5-6, 15-16 and 21.

[4]Ibid., p. 22.

TYPE OF TRAINING

The emphasis or principal subject matter of federal training is varied, ranging from specific courses in technology to broad orientation sessions:[5]

- Administration and analysis--training in the concepts, principles and theories of such fields as public or business administration, personnel training, equal opportunity, logistics; finance; systems analysis, and policy and planning.

- Adult basic education--in such subjects as remedial reading, grammar, lipreading or Braille.

- Clerical skills--typing, shorthand, keypunch and computer operating, letter writing, filing, telephone techniques and word processing.

- Executive development--a special interest program, provided as part of an agency's executive program.

- Executive and management--training in the concepts, principles and theories of such subjects as public policy formulation and implementation, and quantitative approaches to management.

- Professional disciplines--education or training in the concepts, principles, theories or techniques of disciplines such as law and medicine; the physical, biological, natural, social or behavioral sciences; economics, mathematics and statistics; architecture; engineering; and foreign affairs.

- Orientation training--provides new employees an understanding of the organization and missions of the federal government or the employing agency, and a broad overview and understanding of matters of public policy.

- Specialty and technical--training in the methods and techniques of such fields as investigation, security, police science, supply, procurements, transportation, air traffic control, computer programming, languages or medical, legal or scientific support work.

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[5]U.S. Office of Personnel Management, Employee Training in the Federal Service, Fiscal Years 1974, 1975 and 1976, Pamphlet T 7, (Washington, D.C.: U.S. Government Printing Office, September, 1977), pp. 41-43.

- Supervisory education--training in supervisory principles and techniques in personnel policies and practices; human behavior and motivation, work planning, scheduling and review; and performance evaluation.

- Trades or crafts--training offers the knowledge, skills, and abilities needed in such fields as electrical or electronic equipment installation, maintenance, or repair; tool and diemaking; and welding and carpentry.

- Trade or craft apprenticeship--training provides the classroom portion of formal training in an apprenticeship program that, together with guided work experience, permits the individual to acquire the knowledge, skills and abilities needed to meet the requirements for full performance status.

SOURCE OF TRAINING

The training source indicates where the training was given or who gave it, and whether the training was provided through government or nongovernment sources. Federal agencies report training provided to their employees through sources reported in the annual reports by the U.S Office of Personnel Management, Employment Training in the Federal Service, as described below:

- Interagency government training is that provided by an interagency exercise or by a federal department, agency or independent establishment other than the one in which a trainee is currently employed.

- Internal government training is provided by a federal department, agency or independent establishment for its own employees.

- Nongovernment "off-the-shelf" training is provided through a standard educational experience, such as enrollment in a university or college course, professional symposia, technical, business, or vocational courses and is furnished by a commercial or industrial concern, educational institution, professional society or association, or a consultant under contract.

• Developed nongovernment training is designed to meet unique training requirements of a specific federal department, agency or independent establishment.

• State and local nongovernment training is provided by a state, county or municipal government.

FEDERAL TRAINING IN FISCAL YEAR 1980

Over 30 federal agencies provide either short-term training of 120 days or less or long-term training of more than 120 days, or both, costing $327,362,725.[6] In 1980, 521,659 individuals were trained, some participating in more than one of 827,686 short-term courses lasting eight or more hours. These individuals consist of nearly 25 percent of the 2,097,640 federal civilian employees covered in the report. Approximately 800,000 federal civilians, the largest group is the U.S. Postal Service, and all of the uniformed military are not included in these figures.

Long-term training is provided through nongovernment sources, and represents a small proportion of training. There were 548 training courses of 120 days or more. The number of participants was also 548, an even smaller fraction of one percent of the employees trained.

Areas of Training Emphasis

Specialty and technical training is by far the most popular in terms of subject matter accounting for nearly 50 percent of the total training hours. Legal/medical/ scientific training is next with 16 percent and Administration and Analysis is third with 13 percent of the training time. All but one percent of the remaining amount is devoted to (listed in order of frequency): Supervisory--8 percent; Executive/Management--5 percent; Trades/Crafts 5 percent; and Clerical--4 percent. Orientation, Adult Basic Education and unspecified subject matter absorb the remaining one percent.

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[6]U.S. Office of Personnel Management Employee Training, Fiscal Year 1980.

Expenditures

Short-term training of 120 days or less comprised the great majority of the training expenditures--$322,840,155. Of this amount 80 percent is from government sources and 20 percent from nongovernment sources, as follows:

Training of 120 Days and Less

Government	$261,819,902
In-house	233,508,152
Interagency	28,311,750
Nongovernment (short-term)	60,924,316
Specially developed	8,849,610
Standard catalogued courses	51,496,396
State and local Governments	578,310
Source Not Specified	96,037
Nongovernment training of more than 120 days (long-term)	4,522,570
TOTAL ALL SOURCES	$327,362,725

Of the total training expenditures, approximately 39.1 percent was spent for the salaries of agency training staff assigned to conduct training and development of employees. The remaining 60.9 percent was expended for nonsalary items such as tuition, travel, per diem, contracted services and other related items.

The governmentwide average cost per training course lasting eight or more hours was $395, at an average cost per hour of $9.76. Government sources are the major providers of training to federal employees with in-house training using significantly greater resources than any other source at the higher than average hourly rate of $10.41.[7]

[7]U.S. Office of Personnel Management, Employee Training, Fiscal Year 1980, pp. 3-26.

TRAINING IN THE UNIFORMED MILITARY

The Department of Defense education and training programs can be divided into two broad categories: military, on-duty training and education; and voluntary, off-duty education (see Table 2). Civilian employees of the Defense Department receive training through the federal training programs discussed in other sections of this paper.

MILITARY ON-DUTY TRAINING AND EDUCATION

Military, on-duty training appropriations are allocated for the following programs:[8]

- Recruit training is given to enlisted entrants to the services who have not had previous military service.

- One-station unit training is an Army program which combines recruit training and training in certain skills into a single, continuous course.

- Officer Acquisition Training leads to a commission in one of the services.

- Flight Training is primarily for prospective pilots and navigators before they receive an initial operational assignment.

- Professional Development Education is a program that relates to the advanced professional duties of military personnel or to advanced academic disciplines to meet service requirements.

- Specialized Skill training prepares military personnel for specific jobs in the military services.

Department of Defense training costs were $8,082,300 in 1980[9] and $10,029,400 in 1981.[10] Rather than listing the

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[8]U.S. Department of Defense, Military Manpower and Training Report for 1982 (Washington, D.C.: Department of Defense, March 1981), Appendix C.

[9] Ibid.

[10]U.S. Department of Defense, Military Manpower and Training Report for 1981, (Washington, D.C.: Department of Defense, March 1980), Appendix C.

TABLE 2

SUMMARY OF ALL MILITARY TRAINING LOADS AND EXPENDITURES, 1981

Participants or Training Loads

Voluntary Off-Duty Training	$1,270,157
Military On-Duty Training	229,000
TOTAL	$1,499,000

Expenditures for all military training and education

Voluntary Off-Duty Training	$153,500,000
Military On-Duty Training	10,029,400
TOTAL	$163,579,400

number of students and trainees participating in each program, the Department classifies students and trainees by "training loads." Training loads are the average number of students and trainees participating in formal individual training and education courses during the fiscal year.

During fiscal year 1981 the Department of Defense had a training load of approximately 229,000. Eighty-five percent of this annual load was composed of training for members of the active forces; the remaining 15 percent was training for Reserve members.

The following chart shows the breakdown of training loads by major categories of training in 1981.[11]

Recruit training	52,000
Officer acquisition	17,000
Specialized skill	121,000
Flight training	7,000
Professional development education	8,000
One-station unit	23,000
TOTAL	229,000

VOLUNTARY OFF-DUTY TRAINING AND EDUCATION

Voluntary, off-duty education includes Basic Skills; High School Completion; Non-Credit/Other/Group Study; Foreign Language/ESL; and Postsecondary.[12]

Basic Skills

These programs are 100 percent funded by the Department of Defense. They are designed to upgrade individual performance of service members through instruction in reading, math, English, English as a Second Language (ESL) and composition. Beyond the remedial instruction, these programs support service occupational specialities and are meant to affect job performance. They are also seen as preparing service members for postsecondary study.

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[11]Ibid.

[12]U.S. Department of Defense, "Voluntary Education Factsheer," photocopy, National Commission on Student Financial Aid files.

High School Completion

These programs are designed to provide an opportunity for service members to acquire either a high school diploma or a General Equivalency Diploma certificate. The Department of Defense views these programs as having a direct impact on the quality of the overall force.

Noncredit

These programs are inclusive of a wide variety of special interests. These courses range from personal enrichment and leisure activities to highly technical job-related programs. They also range from voluntary to mandatory as a supplement to job specific training.

Postsecondary Education

These programs are divided into three categories: technical, undergraduate and graduate. They are credit courses that lead to certificates and degrees. The range of programs conducted by the military services are similar to those that are found in postsecondary education throughout the United States.

In fiscal year 1981 there were approximately 1,270,157 service members in Department of Defense voluntary, off-duty education programs at a cost of approximately $153.5 million (see Table 3).

Of the $163 million dollars spent for uniformed military training and education, 84 percent is spent on the voluntary programs. Likewise, of the 1.5 million servicemen receiving training, 84 percent of those training loads are in off-duty training and education. Almost half, 48 percent, are in postsecondary programs.

TABLE 3

OFF-DUTY TRAINING LOANS, INDIVIDUAL EXPENDITURES

Basic Skills	231,004
High School Completion	35,788
Noncredit	281,229
Foreign Language/ESL	119,563
Postsecondary Education	
Technical	210,175
Undergraduate	321,435
Graduate	70,960
TOTAL	1,270,157

Expenditures (in millions)

Personnel costs	$ 47.3
Tuition assistance	43.5
Contract instruction	33.0
VA-sponsored	29.7
TOTAL	$153.5

SOURCE: "Voluntary Education Factsheet," U.S. Department of Defense.

CONCLUDING NOTES: AN AGENDA FOR FUTURE RESEARCH

The Terrain of Postsecondary Education has been prepared to provide a total profile of the postsecondary education and training industry and to establish what information is available on postsecondary education, and how reliable and complete it is. Many information gaps exist. This concluding note summarizes a few challenging areas for future research.

UNDERGRADUATE EDUCATION

Information on undergraduate education is limited in areas of noncredit undergraduate enrollment and extension enrollments. Data on the motivations for student enrollment decisions would be useful to colleges and federal policy makers to forecast college enrollment patterns more precisely. Information on student enrollment patterns would be helpful to obtain data on part-time and full-time students concerning their educational goals, their plans for attending college, the factors affecting their choice of major and the way they are financing their education. Better information is needed about the demand for noncredit instruction and its role vis-a-vis regular credit offerings of colleges and universities. Although the Higher Education Research Institute collects some of this information for first-time, full-time freshmen, data collection should be expanded to include part-time and returning students as well. Especially useful would be longitudinal studies of college students to ascertain dropout, stopout and reentry rates of college students.

Research into ways and areas of vastly improving participation rates for blacks and Hispanic students is essential (although one-half of all federal aid recipients were members of racial and ethnic minority groups).

Information is needed on a timely basis. In July 1982, the Higher Education General Information Survey (HEGIS) data on higher education finances and enrollment for 1980 were not yet available. Census data on school enrollments for Fall 1980 were not available by mid-1982.

Better estimates of the relationship between access and choice of students of all ages and the availability of government funds are needed, a matter that the Commission is currently reviewing. Models to predict the enrollment shifts as various forms of financial support change also need to be developed.

GRADUATE EDUCATION

While a large amount of data is collected pertaining to graduate education, insufficient effort has been devoted to organizing it in a form responsive to policy makers' needs. For example, inconsistencies from year to year and across data sources make it difficult to draw inferences about trends over time.

At the national level, data on graduate applications and admissions are not regularly collected across disciplines (although some organizations collect data on these topics for specific fields). Some national data are available on enrollment by field of study, but they have not been collected or reported in a very systematic fashion. Not enough is known about the paths students take from undergraduate to graduate school and beyond, or the role financial support considerations may play in their choices or the participation rates of people in different circumstances and with different educational and employment experiences.

Review of major data collection procedures and instruments, such as the Survey of Earned Doctorates, HEGIS and others pertaining, in part, to graduate education, is needed in order to develop greater consistency in data collected and reporting on graduate education and to ensure that what is collected is sufficient for planning and policy considerations.

Increasing numbers of international students are enrolling in institutions of higher education in the United States. Policy makers need to know systematically where they come from, what disciplines they enter, how they are supported and the degrees they are awarded. Furthermore, there is a need to determine how effective international students are as teaching assistants in their academic disciplines. In addition, we need to know whether these students remain in the United States or return to their home country.

PROPRIETARY VOCATIONAL SCHOOLS

Important information is currently unavailable for proprietary schools, making future student aid policy decisions difficult. While indicators suggest the GSL program is an

important sourcce of income for many proprietary students, little information is available. Data needs to be collected and analyzed to determine the impact of GSL and other program aid on proprietary students and schools.

Although its relative importance is now declining, the GI Bill played a significant role in the past; yet little data is available for proprietary schools. Data published by the Veterans Administration should be improved.

NDSL default rates should be carefully analyzed to determine patterns. It is important to understand the characteristics of schools with high proportions of defaulters. Studies need to isolate conditions under which students default and collections are delayed.

Careful analysis needs to be made of how individual federal aid program requirements affect the profit-seeking incentives of proprietary schools. For example, do arbitrary minimum course lengths encourage schools to inflate their programs? Do schools substitute grants for loans and work to attract more students? Could proprietary students bear an increased loan and work load without jeopardizing their persistence in school or a school's abilities to recruit students?

Most relationships between student aid, schools and student behavior have been established necessarily by using highly aggregated data, making sensitive comparisons difficult. A carefully designed study of a representative sample of proprietary schools and their students would provide the basis for developing estamates of the impact of student assistance on these schools.

CORPORATE EDUCATION AND TRAINING

The convergence of increased corporate involvement in education and training and changing student needs has implications for postsecondary education policy makers. Individual decisions about postsecondary education could alter the pattern of schooling and the locus of education for some, perhaps many. For traditional institutions, the potential market represented by corporation contracts and joint ventures may be increasingly attractive as financial pressures increase, leading to institutional changes in curricula. financing procedures, scheduling and faculty issues. Information is lacking in many of these areas.

Research on corporate education is as important as it is incomplete. Little is known about training and education in small businesses, yet it is estimated that 60 percent to 80

percent of new jobs created are in this sector. How will job-training needs be met? Because it is expensive and difficult, many corporations do little evaluation and use no formal techniques, yet both corporations and policy makers need to be able to assess the employment and education outcomes of corporate programs.

And we need to understand the impact of public policy on the interaction in postsecondary education among colleges and universities, for-profit institutions and industry. Study is needed on the relation between corporate sector involvement in education and goverment student financial aid.

Knowledge of how public policy can influence corporate involvement in education and training is needed. (For example, while most training is done voluntarily, some programs, such as safety training, are mandated). Also, how public policy may effectively influence who will be the target of education and training in corporations.

EDUCATION AND TRAINING IN LABOR UNIONS

Education and training in the trade union movement is a combination of advocacy through federal and state legislation on behalf of education and training; the developing of both programs and funding for education and training through collective bargaining; providing education and training through universities and colleges through the joint planning process; and, finally, by developing their own dues monies and other resources. The extent of these education arrangements has never been adequately researched or fully written about by the union or outside professionals. The decentralized structure of unions makes research difficult. This is further complicated by the fact that unions often do not collect education figures themselves nor break down the program costs or list them as a special budget item.

Trade unions at various levels do carry on major programs for their members that involve postsecondary educational institutions, business and industry, and the federal and state governments. Unknown millions of dollars are spent on education and training for union members and the disadvantaged using union skills and their business, industrial, governmental and postsecondary relationships.

Needed is a major effort by scholars from within the labor movement or from those outside that understand the union movement. Adequate funds need to be provided to perform a major multi-year study. Part of this study should include developing internal reporting mechanisms within unions and

university and college labor centers for continuing to update such a study. Once completed, the study would be of value to unions themselves, Congress, state legislatures, business and industry and federal agencies as well as postsecondary institutions.

FEDERAL GOVERNMENT PROVISIONS OF EDUCATION AND TRAINING

No central government information collection point exists for pulling together information on the size, scope and total involvement of the federal government in education and training. A thorough research study is needed to accurately assess the scope, nature and effectiveness of these federal efforts, distinct from student aid.

The federal government will continue to play a major role in postsecondary education in the 1980s, but the size of that role is now being debated. Thorough study is needed for making effective equal opportunity for all Americans in the areas of postsecondary education. Further study must be made as to whether general education assistance should be the primary focus of education policy or whether targeted programs to meet specific national priorities should be emphasized.

A broad inquiry is needed into both the paramount role of education and training in creating the American labor force of the future and the nature, size and sources of the financial commitment needed to accomplish the task. Both the pace of technological change and pressures from foreign competitors suggest a need for a systematic review of national and state policies relating to education and the work force. Basic examination of education and training requirements and their most cost effective attainment is needed for:

- new entrants to the work force;
- remedial training for the disadvantaged;
- retraining for displaced workers;
- retraining and upgrading education of existing workers; and
- advanced education and training for critical tecchnical skills.

BIBLIOGRAPHY

Adkins, Douglas L. The Great American Degree Machine: An Economic Analysis of the Human Resource Output of Higher Education. Berkeley: The Carnegie Commission on Higher Education, 1975.

Advisory Commission on Intergovernmental Relations (ACIR). The Federal Role in the Federal System: The Dynamics of Growth. Washington, D.C.: Advisory Commission on Intergovernmental Relations, 1981.

American Council on Education. Fact Book for Academic Administrators, 1981-82. Washington, D.C.: American Council on Education, 1982.

_____. National Guide to Credit Recommendations for Non-Collegiate Courses, Washington, D.C.: American Council on Education, 1978.

_____, and the U.S. Department of Education, National Center for Education Statistics. Trends and Patterns: A Study of Enrollments in Higher Education, 1970-79. Washington, D.C.: American Council on Education, 1981.

AFL-CIO. AFL-CIO Guide to Sponsored Scholarships, Awards, and Student Financial Aid, 1982-1983. Washington, D.C.: AFL-CIO, 1983.

_____. "Report of the Executive Council of the AFL-CIO Fourteenth Convention, New York, New York, November 16, 1981." Washington, D.C.: AFL-CIO.

_____. Union Membership and Employment, 1959-1979. Washington, D.C.: AFL-CIO Department of Research, February 1980.

American Telegraph and Telephone Company. Corporate Tuition Aid Plans 1977--Report on a Survey of Outside Companies and Bell System Companies. Management Training Development Section, American Telephone and Telegraph Co., 1977.

Anderson, Richard E., and Kasl, Elizabeth Swain. The Costs and Financing of Adult Education and Training. Lexington, Mass.: D.C. Heath and Co., 1982.

Applied Management Sciences. Study of Program Management Procedures in the Basic Grant and Campus Based Programs, Final Report. Vol. 1: The Institutional Administration of Student Financial Aid Programs. Vol. 2: Who Gets Financial Assistance, How Much, and Why? Prepared for the U.S. Department of Health, Education and Welfare, Office of Program Evaluation, Washington, D.C., 1980.

_____. Study of the Impact of the Middle Income Student Assistance Act (MISAA), Final Report. Prepared for the U.S. Department of Health, Education and Welfare, Office of Evaluation, Washington, D.C., 1980.

Association of Physical Plant Administrators. Mortgaging the Future. Washington, D.C.: Association of Physical Plant Administrators, 1979.

Atelsek, Frank J., and Gomberg, Irene L. Estimated Number of Student Aid Recipients, 1976-77. Washington, D.C.: American Council on Education, 1977.

_____. Student Assistance: Participants and Programs 1974-75. Washington, D.C.: American Council on Education, 1975.

Barton, Paul E. Worklife Transitions: The Adult Learning Connection. New York: McGraw-Hill, 1982.

Berry, M. and Dunbar, E. "The Proprietary Vocational School: The Need for Regulation in Texas." Texas Law Review, December 1970.

Bowen, Howard R. The State of the Nation and the Agenda for Higher Education. San Francisco: Jossey-Bass, 1982.

Breneman, David W., and Finn Jr., Chester E. Public Policy and Private Higher Education. Washington, D.C.: Brookings Institution, 1978.

Brubacker, John S., and Rudy, Willis. Higher Education In Transition. Revised and enlarged edition. New York: Harper & Row, 1968.

Carnegie Council on Policy Studies in Higher Education. A Classification of Institutions of Higher Education. New York: McGraw-Hill, 1978.

_____. Three Thousand Futures: The Next Twenty Years for Higher Education. San Francisco: Jossey-Bass, 1981.

Cartter, Allen M. PhD's and the Academic Labor Market. New York: McGraw-Hill, 1976.

Casey, Max. "Occupational Employment Growth Through 1990." Monthly Labor Review, August 1981.

Choate, Pat. "Retooling the American Workforce." Washington, D.C.: Northeast-Midwest Institute, 1982.

_____, and Epstein, Noel. "Workers of America Retool." Washington Post, Outlook Section, May 9, 1982.

Chronicle of Higher Education, 1979, 1981, and 1982.

College Board. The College Cost Book, 1980-81. New York: College Board, 1981.

Consortium on Financing Higher Education. Graduate Admission Trends in Selected Departments of COFHE Graduate Research Project Institutions 1970-1980. Boston: Consortium on Financing Higher Education, 1982.

Collins, Huntley. "Corporate Campus: Learning Your Way to a Better Job." Change, July-August 1979.

Council for Financial Aid to Education. Voluntary Support for Higher Education, 1980. Washington, D.C.: Council for Financial Aid to Education, 1981.

Craig, Robert L. The History of Training. New York: McGraw-Hill, 1976.

_____, and Evers, Christine J. "Employers as Educators: The Shadow Education System." In New Directions for Experimental Learning: Business and Higher Education-Toward a New Alliance, edited by Garard Gold. No. 13. San Francisco: Jossey-Bass, 1981.

Cross, Patricia. "New Frontiers for Higher Education: Business and the Professions." In 1981 Current Issues in Higher Education, No. 3: Partnerships with Business and the Professions. Washington, D.C.: American Association for Higher Education, 1981.

Denison, Edward. Accounting for Slower Economic Growth: The United States in the 1970s. Washington, D.C.: Brookings Institution, 1979.

Dresch, Stephen P. "A Demographic-Economic Perspective on the Future of Higher Education." Mimeographed. New Haven: Institute for Demographic and Economic Studies, 1979.

_____. An Economic Perspective on the Evolution of Graduate Education. Washington, D.C.: National Board on Graduate Education, 1974.

Editorial Projects for Education. The Fifteen Minute Report. Washington, D.C.: Editorial Projects for Education, October 1981.

Fenwick, Dorothy. Business-Campus Linkages. Washington, D.C.: American Council on Education, forthcoming.

Finn, Chester E. Scholars, Dollars, and Bureaucrats. Washington, D.C.: Brookings Institution, 1978.

Flaim, Paul, and Fullerton, Howard. "Labor Force Projections to 1990: Three Possible Paths." Monthly Labor Review, December 1978.

Forbes, Roy. "The Information Society: Will Our High School Graduates be Ready?" Denver: Education Commission of the States, 1982.

Gladieux, Lawrence E. "The Future of Student Financial Aid." In Student Financial Aid: A Handbook for Practitioners and Administrators, edited by Robert H. Fenske and Robert P. Hoff. San Francisco: Jossey-Bass, forthcoming.

_____, Hansen, Janet S., with Byce, Charles R. The Federal Government, the States, and Higher Education: Issues for the 1980s. New York: College Board, 1981.

_____, and Wolanin, Thomas. Congress and the Colleges. Lexington, Mass.: D.C. Heath and Co., 1976.

Goldstein, Harold. Training and Education by Industry. Washington, D.C.: National Manpower Institute, 1980.

Halstead, D. Kent, ed. Higher Education Planning: A Bibliographic Handbook. Washington, D.C.: U.S. Government Printing Office, 1979.

Hyde Jr., William D. Metropolitan Vocational Proprietary Schools. Lexington, Mass.: D.C. Heath and Co., 1976.

Jencks, Christopher, and Riesman, David. The Academic Revolution. Chicago: University of Chicago Press, 1969.

Kinzer, Joan L., and El-Khawas, Elaine H. Compensation Practices for Graduate Research Assistants: A Survey of Selected Doctoral Institutions. Washington, D.C.: American Council on Education, 1974.

Levine, Herbert, and Hutton, Carroll M. "Financing Labor's Role in Education and Training." In New Directions for Experimental Learning Building New Alliances: Labor Unions and Higher Education, No. 10. San Francisco: Jossey-Bass, 1980.

Levine, Marsha, and Doyle, Denis P. "Private Meets Public: An Examination of Contemporary Education." In Meeting Human Needs: Toward a New Public Philosophy, edited by Jack Meyer. Washington, D.C.: American Enterprise Institute, 1982.

Lloyd, Kent; Christensen, Gail; and Reuben, Elaine. "Interagency Task Force Report on Federal Government Staff Development and Training." Photocopy. Report to the Assistant Secretaries for Management Group. Washington, D.C.: Interagency Task Force, 1982.

Lusterman, Seymour. Education in Industry. New York: Conference Board, 1977.

Lynton, Ernest A. "A Role for Colleges in Corporate Training and Development." In 1981 Current Issues in Higher Education, No. 3: Partnerships with Business and the Professions. Washington, D.C.: American Association for Higher Education, 1981.

MacKenzie, John R. "Labor Education." In Serving Personal and Community Needs Through Adult Education, edited by Edgar J. Boone, Ron W. Shearman and Estelle E. White. San Francisco: Jossey-Bass, 1980.

Marjorie Webster Junior College, Inc. v. Middle States Association of Colleges and Secondary Schools, Inc., Federal Supplement, vol. 302, District Court, 1969, Washington, D.C.

Miner, Mary Green. Management Training and Development Programs. PPF Survey No. 116. Washington, D.C.: Bureau of National Affairs, 1977.

Murray, Thomas J. "Silicon Valley Faces Up to the 'People' Crunch." Dun's Review, July 1981.

Naisbitt, John. Megatrends: Ten New Directions Transforming Our Lives. New York: Warner Books, 1982.

National Advisory Committee on Black Higher Education and Black Colleges and Universities. Target Date, 2000 AD: Goals for Achieving Higher Education Equity for Black Americans, vol. 1. Washington, D.C.: U.S. Government Printing Office, 1980.

National Association of College and University Business Officers. Business Officer, April 1981, Washington, D.C.

National Board on Graduate Education. Federal Policy Alternatives Toward Graduate Education. Washington, D.C.: National Board on Graduate Education, 1974.

National Center for Higher Education Management Systems. An Examination of Possible Statewide Applications and Extensions of the NCHEMS Program Classification Structure, Technical Report 50. Boulder: NCHEMS, 1974.

National Research Council. A Century of Doctorates: Data Analyses of Growth and Change. Washington, D.C.: National Academy of Sciences, 1978.

_____. Summary Report: Doctorate Recipients from United States Universities, 1979 and 1980. Washington, D.C.: National Academy of Sciences, 1980 and 1981.

National Science Foundation. - Academic Science-Graduate Enrollment and Support, Fall 1980. Washington, D.C.: National Science Foundation, 1981.

_____. Graduate Student Support and Manpower Resources in Graduate Science Education, Fall 1969. Washington, D.C.: National Science Foundation, 1970.

_____. Science Indicators 1980. Washington, D.C.: National Science Foundation, 1980.

Newsweek, June 30, 1980.

Northcutt, Norvel. Adult Functional Competency. Austin: Industrial and Business Training Bureau, University of Texas, 1975.

Olson, Lawrence. "Dynamic Labor Shortage in the Offing." Aging and Work. Vol. 5, No. 1, 1982.

Pennsylvania State University, Department of Labor Studies. Directory of Member Institutions and Professional Staff, 1982. College Park, Pa.: Pennsylvania Univeristy, 1982.

Peterfreund, Stanley. "Education in Industry--Today and in the Future." Training and Development Journal, May 1976.

Peterson, Richard E. et al. Toward Lifelong Learning in America: A Sourcebook for Planners. Berkeley: Educational Testing Service, 1978.

_____ and Associates. Life Long Learning in America. San Francisco: Jossey-Bass, 1979.

Porter, Jack. "Corporations that Grant Degrees." Business and Society Review, Spring 1982.

"Regressing into the Eighties: Annual Report of the Economic Status of the Profession." Academe 66, September 1980.

Ricketts, Jean Marie, Foreign Affairs and National Defense Division, Congressional Research Service, Library of Congress. "Letter to the Honorable William D. Ford, U.S. House of Representatives, August 4, 1982." National Commission on Student Financial Assistance files.

Rivlin, Alice. The Role of the Federal Government in Financing Higher Education. Washington, D.C.: Brookings Institution, 1961.

Rogers, Anne, and Shore, Jane. Making Tuition Aid Work for You: An Action Guide for Managers, Labor Officials, Workers and Educators. Washington, D.C.: National Institute for Work and Learning, 1980.

Rogin, Lawrence. "Labor Unions." In Handbook of Adult Education, edited by Robert M. Smith, George Aker and J.R. Kidd. New York: Adult Education Association of USA and the MacMillan Co., 1970.

Schultz, Theodore W. Investing in People: The Economics of Population Scarcity. Berkeley: University of California Press, 1981.

Shtob, Eric F., and Hackney, Nathaniel. "Social Education: The District 1199 Training and Upgrading Fund." In Building New Alliances: Labor Unions and Higher Education, edited by Hal Stack and Carroll M. Hutton. New Directions in Experimental Learning, Series No. 10. San Francisco: Jossey-Bass, November 1980.

SRI International. "The Outlook for the Proprietary School Industry." Discussion draft of a Final Memorandum Report, Project #8354, Menlo Park, California, 1979.

Steinmetz, C.S. "The History of Training." In Training and Development Handbook, edited by R.L. Craig. New York: McGraw-Hill, 1976.

Taggart, Robert. "The Hardship Consequences of Labor Market Problems." Unpublished report. Washington, D.C.: Center for Social Policy Studies, George Washington University, 1982.

U.S. Congress, Congressional Budget Office. Federal Student Assistance: Issues and Options. Washington, D.C.: U.S. Government Printing Office, 1980.

_____, Joint Economic Committee. Human Resources and Demographics: Characteristics of People and Policy, December 12, 1980.

U.S. Department of Commerce, Bureau of the Census. "Population Profile of the United States." Current Population Reports, Series P-20, No. 363. Washington, D.C.: U.S. Government Printing Office, 1981.

_____, _____. "School Enrollment." Current Population Reports, Series P-20, No. 362. Washington, D.C.: U.S. Government Printing Office, 1981.

_____, _____. Statistical Abstract of the United States, 1981. Washington, D.C.: U.S. Government Printing Office, 1981.

_____, National Bureau of Standards. "An Overview of Artificial Intelligence and Robotics V.II-Robotics." NBSIR 82-2479. Washington, D.C.: U.S. Department of Commerce, March 1982.

_____, Office of Telecommunications. Information Economy Definition and Measurement. Washington, D.C.: OT Special Publications, 1977.

U.S. Department of Defense. Military Manpower Training Report for 1982 and 1983. Washington, D.C.: Department of Defense, March 1981 and March 1983, respectively.

_____. "Voluntary Education Factsheet." Photocopy. National Commission on Student Financial Assistance files.

U.S. Department of Education.* "Annual Evaluation Report on Education Programs." Photocopy. Washington, D.C.: U.S. Department of Education, 1982.

_____. Higher Education General Information Survey (HEGIS) Financial Surveys, 1970-1980. Washington, D.C.: U.S. Department of Education.

*U.S. Office of Education prior to May 1980.

_____. The Impact of Section 504. Washington, D.C.: U.S. Government Printing Office, 1980.

_____, National Center for Education Statistics. The Condition of Education. Series 1975-1980. Washington, D.C.: U.S. Government Printing Office, 1975-1982.

_____, _____. Digest of Education Statistics. Series 1966-1981. Washington, D.C.: U.S. Government Printing Office, 1967-1981.

_____, _____. Enrollments and Programs in Noncollegiate Postsecondary Schools, 1978. Washington, D.C.: U.S. Office of Education, 1979.

_____, _____. Faculty Salaries, Tenure, and Benefits, 1980-81. Washington, D.C.: U.S. Government Printing Office, 1981.

_____, _____. Fall Enrollment in Higher Education. Series 1966-1978. Washington, D.C.: U.S. Government Printing Office, 1968-1981.

_____, _____. Financial Statistics for Institutions of Higher Education. Washington, D.C.: U.S. Government Printing Office, 1970, 1972, 1974, 1975, 1976 and 1978.

_____, _____. Financial Statistics of Colleges and Universities, 1979. Washington, D.C.: U.S. Government Printing Office, 1981.

_____, _____. Projections of Education Statistics. Series 1966-1981. Washington, D.C.: U.S. Government Printing Office, 1968-1982.

_____, Office of Student Financial Assistance. OSFA Program Book, July 1981. Washington, D.C.: U.S. Department of Education, 1981.

U.S. Department of Health, Education and Welfare, Office of Civil Rights. Data on Earned Degrees Conferred from Institutions of Higher Education by Race, Ethnicity, and Sex, Academic Year 1975-76 and 1976-77. Washington, D.C.: HEW, April 1978.

U.S. Department of Labor. Directory of National Union and Employee Associations. Bulletin 2079. Washington, D.C.: U.S. Department of Labor, 1979.

_____. Labor Organization Participation in National Employment and Training Programs. Washington, D.C.: U.S. Department of Labor, 1977.

_____, Bureau of Labor Statistics. Employment Trends in Computer Occupations. Bulletin 2101. Washington, D.C.: U.S. Department of Labor, October 1981.

U.S. Federal Trade Commission. "Proprietary Vocational and Home Study Schools." Final Report to the Federal Trade Commission and Proposed Trade Rule. 16CFR 438. Washington, D.C.: U.S. Government Printing Office, 1976.

_____. "Revision to Trade Regulation Rule Pertaining to Proprietary Vocational and Home Study Schools (16CFR 438; Revision)." Washington, D.C.: Undated memorandum.

U.S. General Accounting Office, Comptroller General of the United States. "Better Evaluation Needed for Federal Civilian Employee Training: Report to Congress." FPCD 75 120. Gaithersburg, Md: U.S. General Accounting Office, August 12, 1975.

_____, Federal Personnel and Compensation Division. "Federal Employee Use of Off Campus College and University Programs." FPCD 82 14. Letter to Senator David H. Pryor and Senator Jim Sasser, January 29, 1982.

_____, _____. The Government Employees Training Act of 1958: A Progress Report. FPCD 77 66. Gaithersburg, Md: U.S. General Accounting Office, November 17, 1977.

_____, _____. "Management Training Seminars Sponsored by the National Institutes of Health." FPCD 81 75. Letter to Senator Max Baucus, September 1981.

_____, _____. "OPM Needs to Provide Better Guidance to Agencies for Approving Government Funded College Courses for Employees: Report to William Proxmire, U.S. Senate." FPCD 86 61. Gaithersburg, Md: U.S. General Accounting Office, September 20, 1982.

U.S. Office of Personnel Management,* Workforce Effectiveness and Development. Employee Training in the Federal Service, fiscal years 1973-81. Washington, D.C.: U.S. Government Printing Office, Pamphlet T 7, 1973-77, and U.S. Office of Personnel Management, 1978-81.

U.S. Veterans Administration, Office of Reports and Statistics. Veterans Benefits Under Current Educational Programs, Fiscal Year 1981. Washington, D.C.: U.S. Veterans Administration, February 1982.

---

*U.S. Civil Service Commission prior to January 11, 1979.

University and College Labor Education Association. Directory of Member Institutions and Professional Staff, 1982. College Park, Pa.: Pennsylvania State University, Department of Labor Studies, 1982.

Veysey, Laurence R. The Emergence of the American University. Chicago: University of Chicago Press, 1965.

Weinstein, Lawrence. "Employer as Sponsor" and "Labor Unions." In The Cost and Financing of Adult Education and Training, edited by Richard E. Anderson and Elizabeth Swain Kasi. Lexington, Mass.: D.C. Heath and Co., 1982.

Western Interstate Commission on Higher Education, National Institute of Independent Colleges and Universities, Teachers Insurance and Annuity Association. High School Graduates: Projections for the Fifty States. Boulder: Western Interstate Commission on Higher Education, 1979.

Wilms, Wellford W. Evaluation of the University of California's Independent Study Program. Unpublished technical report. University of California, 1976.

_____. Public and Proprietary Vocational Training: A Study of Effectiveness. Lexington, Mass.: D.C. Heath and Co., 1975.

_____, and Hansell, Stephen. "The Dubious Promise of Postsecondary Vocational Education: Its Payoff to Dropouts and Graduates in the USA." International Journal of Educational Development, Spring 1982.

Wolanin, Thomas and Gladieux, Lawrence. "The Political Culture of a Policy Arena: Higher Education. In What Government Does, edited by Matthew Holder, Jr. and Dennis I. Dresang. Beverly Hills: Sage, 1975.