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ABSTRACT

A review of issues in California postsecondary education in the 1980's begins with an overview: what postsecondary education is, who it serves, how it is funded, state priority goals, and identifying important policy questions in the near future. The coming environment for postsecondary education is analyzed according to population trends, college participation rates, costs of energy, the overall economy, and public opinion of education. A section on California's students looks at student needs and goals, and postsecondary education's obligations to them. Statistical tables present considerable data in this and the preceding section. Faculty issues are discussed: collective bargaining, faculty affirmative action, part-time faculty, and faculty mobility, development, and retirement. Statewide planning is viewed both at the state and segmental levels. Essential elements in the planning process are outlined, including the following: strong executive leadership and commitment, examination of underlying assumptions, definition of the mission and goals of the institution or system, inclusion of a participatory process, and inclusion of an effective program review. (MSE).

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INTRODUCTION

The primary responsibility for State-level planning for all of postsecondary education rests with the California Postsecondary Education Commission. Created in 1973 by the Legislature, one of the Commission's major responsibilities is to "prepare a five-year state plan for postsecondary education which shall integrate the planning efforts of the public segments and other pertinent plans . . . and update the state plan annually." The Commission's first Five-year Plan, issued in December 1975, set forth certain assumptions about the future of California postsecondary education, projected enrollments and expenditures, enunciated State goals for postsecondary education, identified the priority problems for 1976 and the following five years, and proposed plans of action for dealing with specific issues and problems. As the Plan itself stated, it was "problem oriented, with the priorities set in terms of those major problems that face the State of California during the last half of the decade of the seventies."

The Commission's planning activities in the latter part of the 1970s were characterized by broad consultation and by an issue- or problem-oriented process. The Commission, with the help of the public and independent segments, identified the major issues facing postsecondary education in California; described what was being done, and what needed to be done, to resolve those issues; and made recommendations to the segments and to the Legislature concerning appropriate activities. Successive updates of the Plan analyzed the extent to which the problems were being resolved, and articulated new issues facing postsecondary education and the steps to be taken to address them.

The decade of the eighties promises to add to the previously identified problems and issues, a whole list of uncertainties about the educational enterprise. California's educational system must now cope with a series of new issues: how to plan for decline rather than growth; how to anticipate the effects of fiscal constraints and government spending limitations; how to respond to the needs of a new, and perhaps underprepared, student clientele; and how to add new faculty, continue with program innovations, and increase program vitality, while at the same time reducing costs and increasing accountability. These and other such basic uncertainties threaten to overshadow the no less important but more narrow concerns of individual segments and interest groups. Finding ways of helping the postsecondary system to anticipate, as well as cope with, the effects of such uncertainties requires a different approach to planning, one that stresses the planning process itself as much as the particular problems and issues. During a time of uncertainty, fiscal constraints, and retrenchment, the health of California's educational institutions and its statewide system may well depend upon the effectiveness of its planning process and procedures.

It was with this conviction about the need for a new and different planning process that the Commission embarked on the development of a Five-Year Plan for the 1980s. Rather than identifying issues and addressing each one in a separate chapter of the Plan itself, Commission staff began an extensive consultation process in the spring of 1979 to identify the major areas of concern to the postsecondary system as a whole. Each segment was asked to provide a list of the most serious problems it would face in the eighties. Commissioners were queried for their own lists of concerns, as were the Student Advisory Committee and other interested groups.

Commission staff talked with the Department of Finance and with legislative staff about their concerns and expectations for postsecondary education in the 1980s. Finally, the issues and uncertainties were narrowed, and Commission staff began to address some of the most difficult questions of the eighties in a series of planning papers under five broad headings: (1) the environment for California postsecondary education; (2) financing postsecondary education; (3) student needs and characteristics; (4) faculty issues and concerns; and (5) State and segmental planning. These papers not only sought to explore these complex issues, but also to speculate--based upon considerable research and experience--about the effects of some of the changing influences on postsecondary education. In contrast to the draft chapters of the previous Plan and updates which sought consensus on how to resolve issues, these planning papers were intended to generate discussion and debate about the issues, the uncertainties, and the alternatives facing the California segments and the system as a whole.

"An Overview of California Postsecondary Education," was the first in the series of staff planning papers brought to the Commission. It was discussed with the Intersegmental Planning Advisory Committee and, as was the case with all the papers, segmental comments were solicited and reflected in the final draft. (These comments are available, under separate cover, from the Commission upon request.) The "Overview" paper provides not only historical and current information about California's system of postsecondary education, but also the context within which discussions about planning for the 1980s can begin.

The second paper in the series, "The 1980s Environment for Postsecondary Education," examines major factors which may be expected to affect California postsecondary education in the coming decade. These factors include demographic trends, the changing ethnic population of California, college participation rates, energy costs, the economy, and public attitudes toward postsecondary education.

The third planning paper, "California's Students," discusses the changing profile of college and university students and some of the issues this changed profile poses for the 1980s, including student preparation for college, preparation for graduation and careers, special student needs, admissions and articulation, academic standards and requirements, retention and persistence, and the quality of the educational experience.

"Faculty Issues for the 1980s," the fourth planning paper, discusses questions of particular concern to college and university faculties. The issues are grouped into four major areas: collective bargaining; faculty affirmative action; part-time faculty; and faculty mobility, development, and retirement.

The fifth paper in the series, "State and Segmental Planning for California Postsecondary Education," discusses the need for planning, describes segmental and statewide planning processes in California, and delineates the essential elements for successful segmental and statewide planning.

In December 1979, Commission staff prepared a preliminary issue paper on the system of State finance for the public segments of postsecondary education. Primarily because of constitutional initiatives and a projected State deficit, the circumstances made the finance situation extremely uncertain and rendered most conclusions suspect. Therefore, the decision was made to postpone a summary statement on finance until the 1980-81 budget had been adopted and the political situation was more stable. Commission staff, however, has prepared several papers during the past months on specific aspects of finance, which are available upon request. Titles include: (1) "Proposition 4 and Public Postsecondary Education in California," (Commission Agenda, Tab 2: Item E, January 21, 1980); (2) "Proposition Nine: California's Income Tax Initiative of 1980," (Director's Report, February 1980); (3) "Proposition Nine: An Up-Date," (Director's Report, April 1980); and (4) "The State's Fiscal Forecast for 1980-81," (Director's Report, June 1980).

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AN OVERVIEW OF CALIFORNIA POSTSECONDARY EDUCATION

For two decades, postsecondary education policy in California has been based on the 1960 Master Plan for Higher Education. This document has served the State well, even though the system for which it was designed has changed in some important respects, has grown many times larger, and now exists in an environment that is quite different from that in which the Master Plan was drafted.

Periodically, it is helpful to those responsible for making and administering policy to view and to assess in its entirety the enterprise of postsecondary education. How different is our "system" of postsecondary education from what it was when those fundamental policies of the Master Plan were developed? How has the environment changed and what implications do these changes have for the shape of postsecondary education in the future?

In several respects this current period is an historical watershed for postsecondary education. Student enrollments, which grew rapidly from 1960 through the 1970s--from 600,000 to 1,756,000--in public higher education are now expected to decline by as much as 15 percent over the next decade. The amount and rate of that decline could be changed by public policy decisions or by factors in the social environment. Decisions affecting student charges or admission standards, for example, might have the effect of moderating the enrollment decline if charges or standards were lowered and, conversely, might actually increase the decline if charges or standards were raised. Since postsecondary educators generally have not had to face pervasive, long-term enrollment declines in recent history, their response to this new era will require a new management style, one which can maintain the quality and vitality of the system and implement change without relying on the new revenues that enrollment growth provides.

In addition to the expected decline in enrollments, educators must cope with these issues:

- As enrollments grew during the past two decades, the State was willing to maintain or increase its support of public postsecondary education. Now, for the first time in recent years at least, General Fund support (1978-1979) per full-time equivalent student has declined in constant dollars for both the University of California and the California State University and Colleges. The taxpayers' willingness to bear the cost of postsecondary education at current levels of support is unclear.
- The Master Plan made no reference to the special needs of minority students. The first "equal opportunity programs" in

the State were initiated by the University of California in 1963 with the University's own funds. In 1968, the Legislature approved State appropriations to initiate similar programs in both the State University and the Community Colleges. Since that year, State funding for increasing educational opportunities for minority students has risen by 650 percent. With the proportion of minority populations increasing during the 1980s, the cost of maintaining these programs will continue to rise significantly.

- In the expanding educational system of the sixties and seventies, the State could accommodate new programs to meet the demands of new clientele. With the declining enrollments of the 1980s, however, institutions will find it difficult to shift resources to new programs and services to better serve minorities and the changing educational needs of society.
- The Community Colleges evolved from the secondary school system during the sixties and became the communities' "open door" to postsecondary education, locally funded (about 65 percent came from local property taxes) and locally governed. Now, the 1978 property tax relief initiative (Proposition 13) has resulted in a major shift of financial support from local property taxes to the State's General Fund. The result has been intensive discussions about new support strategies for the Community Colleges and the relationship of such support to both the mission and the governance structure of this system.
- Since 1960, the amount of public funds for student financial aid has increased from approximately \$1 million to nearly \$500 million in State and federal funds. The methods by which these funds are distributed and their responsiveness to the needs of middle- as well as lower-income families will need to be monitored carefully.
- There has been criticism of the use of public research funds for what are perceived to be trivial purposes or for projects that may have benefits for one group but harm another. The State has considerable resources in its universities for research on current needs of the society, but more attention must be given to how research policy is developed.
- The public service/community service function through which public institutions employ their resources for a variety of nondegree-oriented educational purposes has suffered considerable cutting as a result of recent budgetary reductions. It is not clear whether this function is still as desirable for postsecondary education as it once was, or whether it should be assumed by other public agencies.

- The ability of postsecondary institutions to retain recently hired faculty will be greatly diminished during the coming decade as a result of declining enrollments and the high proportion of tenured faculty. Even the maintenance of current numbers of minorities and women in some segments will be difficult because of declining enrollments. Responding to shifts in societal priorities and changing student interests when new faculty positions are not available will require new types of faculty-development programs.

Such issues as these require a re-examination of California's complex postsecondary enterprise and a re-thinking of priorities within this system of public and private educational services.

WHAT IS POSTSECONDARY EDUCATION?

Postsecondary education is the part of society's educational activities that one engages in after leaving the compulsory education school system (elementary and secondary school). The California Community Colleges, the California State University and Colleges, and the University of California (all of which are public institutions), together with the independent colleges and universities (such as Pomona College and the University of Santa Clara) fall within this definition. These institutions also have been referred to as higher education institutions and were thus included in the 1960 Master Plan for Higher Education.

"Postsecondary education" is a more encompassing term than "higher education." It includes all formal, societal efforts to aid adult learning. These efforts are found not only in the public and independent colleges and universities and the private vocational schools, but also in the formal instructional activities of business, industry, government (including the military) and labor; adult education; the regional occupational program/centers; the learning exchanges, educational brokers, and information/advisory centers; the special programs by libraries and museums; and telecommunication entities.

The private vocational schools, identified in Figure 1 below as private, nondegree-granting institutions, appear to be one of the potential growth areas in postsecondary education because of their large numbers, their availability, and their sensitivity to the educational market. Educational programs offered business, industry, government, and labor (BIGL) are likewise a large and growing area, although little comprehensive information is available for making reasonable estimates of the rate of growth. In California alone, perhaps as many as 250,000 individuals in BIGL avail themselves of educational opportunities within their organizations.

More than 100,000 additional fully-employed persons in BIGL enroll in the more traditional educational institutions. Because they serve the continuing education needs of the growing numbers of older adults (30 years and above) both the private vocational schools and BIGL could expand during the coming decade while the more traditional institutions decline.

In order to assist in policy development and budgeting at the State level, the Commission gives primary attention in its planning to the public institutions and their programs. This is the sector that serves the largest clientele and receives the largest amount of public funds. For many reasons, however, the independent and private sectors figure increasingly in statewide planning and in policy development. Each year larger amounts of public funds in the form of student aid flow to independent and private institutions and more students turn to these institutions as alternative sources of education. The dynamics of the student flow among the independent, private, and public sectors are important to understand at the State level. All three are described in the profile of postsecondary education that follows:

Numbers of Institutions and Enrollments

The public sector of postsecondary education is composed of the University of California, the California State University and Colleges, the California Community Colleges, the adult education units of the secondary and unified school districts, and three other institutions--the California Maritime Academy, Hastings College of Law, and United States Naval Postgraduate School. The number of campuses and enrollments are compared with the independent/private sectors in Figure 1.

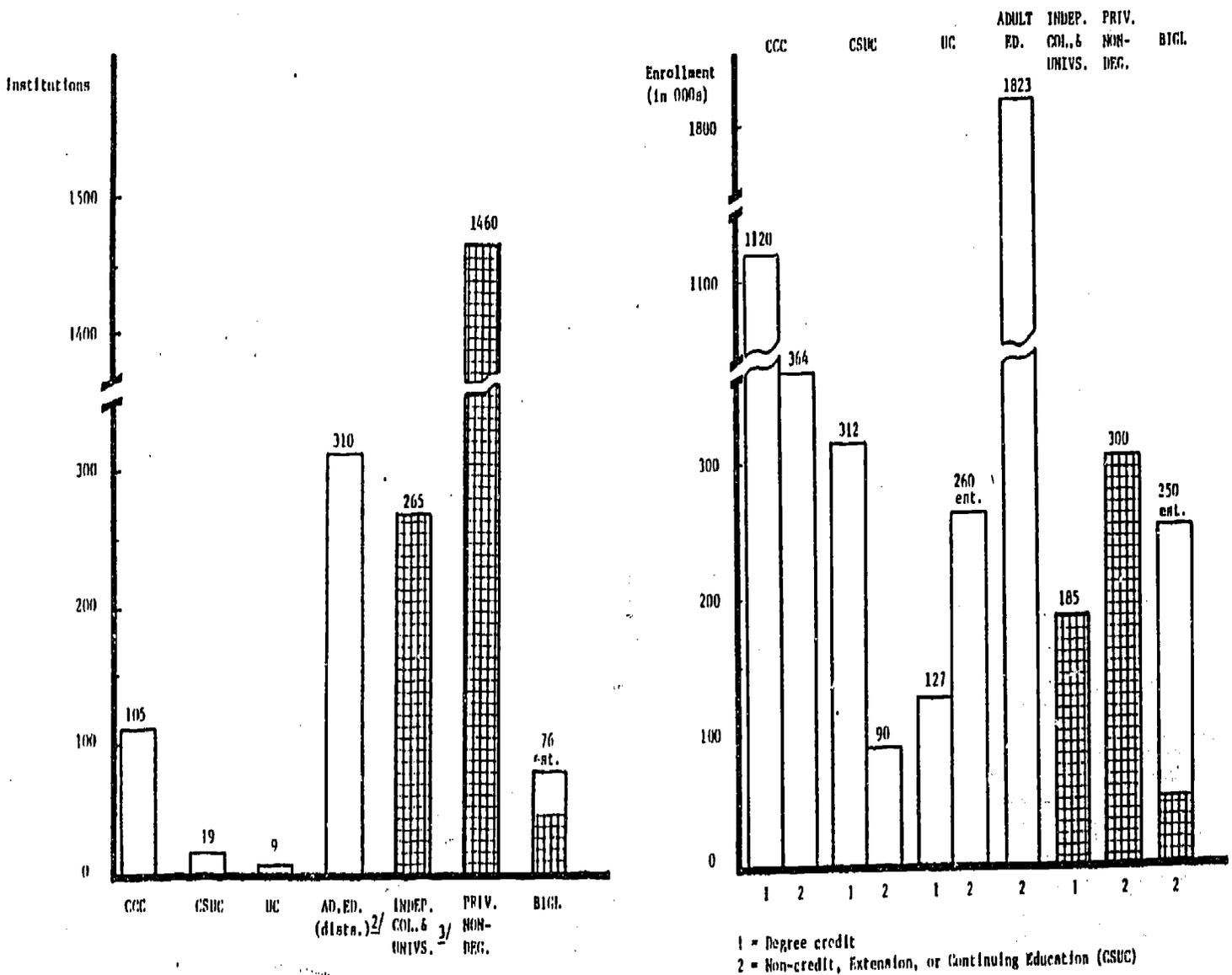
The independent/private sector of postsecondary education is composed of several groups of institutions, the accredited and the non-accredited degree-granting institutions and the private nondegree granting schools, often referred to as the vocational schools. In the number of institutions, the accredited colleges and universities are smallest; this group is composed of 124 institutions (1977). There are 141 unaccredited degree-granting institutions and an estimated 1,460 vocational schools. As a combined group, the independent/private institutions provide a wide choice of educational opportunities, ranging from graduate and professional programs of national reputation to short-term vocational certificate programs.

FIGURE 1

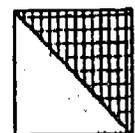
THE NUMBER OF POSTSECONDARY INSTITUTIONS, TRAINING CENTERS AND ENROLLMENTS IN CALIFORNIA, PUBLIC AND PRIVATE, 1977 1/

Number of Institutions and Training Centers

Enrollments



1/ Information on the number of training sites and enrollments in business, industry, government and labor is incomplete. The numbers in Figure 1 relating to BIGL are approximations based on various sources of information summarized in the Commission's 1978 report, Formal Education and Training Programs Sponsored in California by Business, Industry, Government and the Military. This number represents the secondary and unified school districts sponsoring adult education programs.



Public

Independent/Private

^{2/} Includes both accredited and non-accredited degree-granting institutions.

Functions and Programs.

The delineation of functions among the three public segments of higher education, as contained in the 1960 Master Plan, dealt with the primary functions of instruction and research. In brief, this delineation granted to the University of California the sole authority for awarding the doctoral degree (except that it may agree with the State University to award joint doctoral degrees in selected fields), and exclusive jurisdiction over training for the professions of dentistry, law, medicine, veterinary medicine and graduate architecture. (Subsequently, the State University was allowed to offer graduate architecture also.) The Master Plan also declared the University to be the primary State-supported agency for research. The California State University and Colleges (then the State Colleges) was granted the function of liberal arts and sciences instruction and some professional instruction through the master's degree. The California Community Colleges (then the Junior Colleges) were restricted to "instruction through, but not beyond the 13th and 14th grade level "in standard collegiate courses and vocational-technical fields leading to employment."

While this delineation of functions remains the cornerstone of California's public higher education system, it governs only a portion of the instruction offered in the State (see the shaded portion in Table 1) and provides little guidance for the coordination of additional functions such as advising and counseling, diagnosis and evaluation, remediation, certification of prior learning, public service, community service, adult education, and affirmative action outreach.

The major function of educational institutions is, of course, instruction. Table 1 shows that there are three natural sub-groupings within this function (indicated by the broken lines) where planning and coordination are desirable. These include (1) doctoral programs, (2) master's and baccalaureate programs, and (3) technical/vocational certificate programs (often of less than two years in length) and non-credit instruction. The degree programs at all three levels have been the focus of past planning and coordination at the statewide level; in the future, vocational and noncredit programs (as well as programs in business, industry, government, and labor) will require more attention during the coming decade. The reasons why are suggested by demographic trends which are considered later in the discussion of the expected environment of the 1980s.

During the 1970s, additional educational functions became important inside and outside traditional collegiate institutions. While instruction retains its pre-eminent status (along with research in the University of California), such auxiliary functions as diagnosis

TABLE 1

LEVELS OF INSTRUCTION OFFERED IN THE PUBLIC AND PRIVATE SEGMENTS OF POSTSECONDARY EDUCATION IN CALIFORNIA, 1977-78

Levels of Instruction

<u>Segment</u>	<u>No. of Insti- tutions</u>	<u>Doctorate</u>	<u>Masters</u>	<u>Bacc.</u>	<u>Assoc.</u>	<u>Tech/Voc Certif.</u>	<u>Non- Credit</u>
University	9	[Shaded area covering University, St. University, Comm. Coll., Univ. Exten. & Cont. Ed., and Adult Ed. segments]					
St. University	19						
Comm. Coll.	105						
Univ. Exten. & Cont. Ed.							
Adult Ed.	310						
Indep. Coll. & Univ. ^{1/}	265	X	X	X	X	X	X
Priv. non- degree	1460					X	X
Business, industry, government labor						X	X

- Legend: X - regular function and level of instruction
 ● - noncredit work offered at this level of instruction may be credited toward a degree at this level in limited amounts and by special arrangement
 [Shaded box] - shaded portion designates the levels of instruction and the segments covered under the 1960 Master Plan

^{1/} Includes both accredited and non-accredited degree-granting institutions

(of learning strengths and weaknesses), counseling (academic and occupational), and certification (separate and apart from instruction in the classroom) are tending to become separate functions in their own right. The emphasis during the 1970s on providing educational opportunities to an increasingly diverse student clientele necessitated the expansion of these functions. The clientele of the 1980s will continue to diversify (i.e., more women, ethnic minorities, older students), thus these functions should be expected to grow and mature.

As suggested above, planning for and coordinating these functions are relatively new tasks at the statewide level. Current efforts to establish interinstitutional and community advisement centers represent only one of many strategies which might prove needed. The expansion of institutions offering to certify prior learning is a source of increasing concern, for the expertise to assess the integrity of this function has yet to be developed among those responsible for evaluating the operations of these schools.

WHO IS SERVED BY POSTSECONDARY EDUCATION?

The educational enterprise provides vast general benefits for society at large and more specific benefits for the immediate clientele of its three primary functions: instruction, research, and public/community service. Among these three functions, information about the clientele of postsecondary instruction is most available. The public institutions and their extension units serve about 2.3 million students, or an estimated 47 percent of the individuals involved in some form of postsecondary education in California. Enrollments for degree credit (including those in accredited independent institutions) currently number about 1.6 million. These enrollments have been distributed among the four degree-granting segments in roughly the same proportion over the past six years (Table 2).

TABLE 2
DISTRIBUTION OF OPENING FALL ENROLLMENTS AMONG THE FOUR
DEGREE-GRANTING PUBLIC SEGMENTS OF CALIFORNIA
POSTSECONDARY EDUCATION (UNDERGRADUATE AND GRADUATE)

1973, 1976, 1978

	UC		CSUC		CCC		INDEP(ACCRED)		TOTAL	
	No.	%	No.	%	No.	%	No.	%	No.	%
1973	118,854	8.5	286,633	20.5	852,817	61.0	138,008	9.9	1,396,312	100
1976	128,648	7.8	303,734	18.3	1,073,104	64.6	154,403	9.3	1,659,889	100
1978	127,881	7.7	306,175	18.5	1,047,167	63.4	169,994	10.3	1,651,217	100

A number of important changes are taking place in the composite profile of these students:

- An increasing proportion of the students are women, especially at the undergraduate level (Table 3).

TABLE 3

PERCENT OF WOMEN STUDENTS AMONG UNDERGRADUATES IN THE UC, CSUC, CCC AND INDEPENDENT INSTITUTIONS, 1973, 1976 AND 1978

	UC	CSUC	CCC	INDEP*
1973	45.2%	42.7%	45.0%	N/A
1976	46.6	46.3	50.2	39.3%
1978	47.9	48.9	53.2	41.2

*Accredited only; percentages include graduate students for this segment since data for undergraduates alone were not available. The inclusion of graduate students here may account for the lower proportion of women.

- The average age of the student bodies is rising. An increasing proportion of the students is older than the traditional college-age" group (18-24 year olds).
- As with the population of the State, the ethnic diversity of the student population appears to be increasing slowly, although current data are not reliable enough to state this as an unqualified fact. Table 4 displays the most complete information available about the present ethnicity of the three public segments of higher education and the independent institutions in the State.
- The average credit load carried by students is declining. Older students (25 and older) tend, more than their younger peers, to be part time, and those who do become fulltime students tend to take lighter course loads (Table 5).

TABLE 4

Enrollment in the University of California,
the California State University and Colleges,
the California Community Colleges
and Independent Institutions, Fall 1978
by Age, Sex and Ethnicity

UNIVERSITY OF CALIFORNIA, FALL 1978

	TOTAL ENROLLMENT							Total
	NON-RESIDENT ALI-EN	BLACK (NON-HISPANIC)	AMERICAN INDIAN OR ALASKAN NATIVE	ASIAN OR PACIFIC ISLANDER (INCLUDING FILIPINO)	HISPANIC	WHITE (NON-HISPANIC)	OTHER OR NO RESPONSE	
MALE								
FULL-TIME..	4,292	1,746	291	6,054	3,142	42,970	8,434	66,949
PART-TIME..	208	206	34	363	291	2,969	539	4,610
Total.....	4,500	1,952	325	6,417	3,433	45,939	8,993	71,559
FEMALE								
FULL-TIME..	1,357	2,127	235	5,151	2,356	36,435	4,762	52,423
PART-TIME..	80	251	36	271	221	2,654	386	3,899
Total.....	1,437	2,378	271	5,422	2,577	39,089	5,148	56,322
Total								
FULL-TIME..	5,649	3,873	526	11,205	5,498	79,405	13,216	119,372
PART-TIME..	288	457	70	634	512	5,623	925	8,509
Total.....	5,937	4,330	596	11,839	6,010	85,028	14,141	127,881

CALIFORNIA STATE UNIVERSITY AND COLLEGES, FALL 1978

	TOTAL ENROLLMENT							Total
	NON-RESIDENT ALI-EN	BLACK (NON-HISPANIC)	AMERICAN INDIAN OR ALASKAN NATIVE	ASIAN OR PACIFIC ISLANDER (INCLUDING FILIPINO)	HISPANIC	WHITE (NON-HISPANIC)	OTHER OR NO RESPONSE	
MALE								
FULL-TIME..	4,192	4,666	972	3,674	6,051	48,859	21,716	92,144
PART-TIME..	2,078	2,883	609	3,903	3,839	30,337	17,105	60,424
Total.....	6,270	7,223	1,581	9,577	9,890	79,196	38,821	152,568
FEMALE								
FULL-TIME..	1,561	6,368	920	5,958	5,704	50,601	19,561	90,673
PART-TIME..	910	3,473	623	3,529	3,475	34,439	16,485	62,934
Total.....	2,471	9,841	1,543	9,487	9,179	85,040	36,046	153,607
Total								
FULL-TIME..	5,753	11,043	1,892	11,632	11,755	99,460	41,277	182,817
PART-TIME..	2,988	6,026	1,232	7,432	7,314	64,776	33,590	123,358
Total.....	8,741	17,074	3,124	19,064	19,069	164,236	74,867	306,175

TABLE 4 (Continued)

CALIFORNIA COMMUNITY COLLEGES, FALL 1978

	TOTAL ENROLLMENT							Total
	NON-RESIDENT ALI-EN	BLACK (NON-HISPANIC)	AMERICAN INDIAN OR ALASKAN NATIVE	ASIAN OR PACIFIC ISLANDER (INCLUDING FILIPINO)	HISPANIC	WHITE (NON-HISPANIC)	OTHER OR NO RESPONSE	
MALE								
FULL-TIME.	4,824	16,377	2,035	10,047	16,807	91,492	69	141,651
PART-TIME.	3,292	29,807	5,438	19,109	35,468	225,056	122	318,291
Total.....	8,116	46,184	7,473	29,156	52,275	316,548	191	459,942
FEMALE								
FULL-TIME.	2,293	15,799	1,969	8,039	15,160	86,432	63	129,755
PART-TIME.	2,525	35,745	5,933	18,456	34,952	296,203	173	393,987
Total.....	4,818	51,544	7,902	26,495	50,112	382,635	236	523,742
Total								
FULL-TIME.	7,117	32,176	4,004	18,086	31,967	177,924	132	271,466
PART-TIME.	5,817	65,552	11,371	37,565	70,420	521,259	295	712,279
Total.....	12,934	97,728	15,375	55,651	102,387	699,183	427	983,745

INDEPENDENT INSTITUTIONS (ACCREDITED AND NON-ACCREDITED) FALL 1978

	TOTAL ENROLLMENT							Total
	NON-RESIDENT ALI-EN	BLACK (NON-HISPANIC)	AMERICAN INDIAN OR ALASKAN NATIVE	ASIAN OR PACIFIC ISLANDER (INCLUDING FILIPINO)	HISPANIC	WHITE (NON-HISPANIC)	OTHER OR NO RESPONSE	
MALE								
FULL-TIME.	8,904	3,121	332	4,126	3,660	50,588	886	71,617
PART-TIME.	3,061	1,485	145	1,537	1,490	24,643	227	32,588
Total.....	11,965	4,606	477	5,663	5,150	75,231	1,113	104,205
FEMALE								
FULL-TIME.	3,362	3,354	251	3,178	3,066	37,309	2,096	52,616
PART-TIME.	1,029	1,189	77	970	865	15,553	371	20,054
Total.....	4,391	4,543	328	4,148	3,931	52,862	2,467	72,670
Total								
FULL-TIME.	12,266	6,475	583	7,304	6,726	87,897	2,982	124,232
PART-TIME.	4,090	2,674	222	2,507	2,355	40,196	598	52,642
Total.....	16,356	9,149	805	9,811	9,081	128,093	3,580	176,874

TABLE 5

COMPARISON OF AVERAGE STUDENT CREDIT LOAD BY AGE
(24 vs. 25) BY PUBLIC SEGMENT, FALL 1976-1978

	<u>Fall 1976</u>	<u>Fall 1977</u>	<u>Fall 1978</u>
CCC			
age 24 & below	n/a	9.69	9.35
age 25 & above	n/a	6.12	5.62
CSUC			
age 24 & below	13.33	13.23	13.14
age 25 & above	10.45	10.28	10.22
UC			
age 24 & below	14.38	14.24	14.10
age 25 & above	12.74	12.66	12.72

The clientele of nontraditional or noninstitutional instruction (off-campus or mediated instruction) are identifiable only through scattered reports. For example, evaluations of such noncampus-based services as University Extension and broadcast instructional television show that they tend to serve an older student clientele (average age of 35-40) which is 65 to 70 percent women, is roughly comparable in ethnic composition to that of the sponsoring institution, is composed of high school graduates with some college experience, and which tends to come from families whose incomes are average to slightly above average (although about 20 percent of these students do come from families with below-average incomes).

The significance of this information lies in the fact that most of these characteristics describe that segment of California's population which will be increasing dramatically during the decade of the eighties. The same population wave--the post-World War II baby boom--which caused the campuses to fill with college-age students during the late 1960s could, during this coming decade, cause the emphasis in educational programming to shift toward noncampus-based services and programs.

The Clientele of Research

The 1960 Master Plan designated the University of California as the "primary State-supported agency for research." The University, with its more than 120 organized research units, carries on basic and applied research for the State and the nation. Other significant research efforts in the State are provided by such institutions as

the California Institute of Technology, Stanford University, the University of Southern California, and such organizations as the Rand Corporation (now accredited to offer the Ph.D., thus a "postsecondary institution" by one definition) and the Stanford Research Institute (formerly affiliated with Stanford University). However, these institutions receive relatively little State money for research.

Each year about \$155 million in State funds is spent for research by the University. An estimated 18 percent of the instructional budget (approximately \$83 million), goes into individual faculty, or departmental, research. An additional \$72 million is provided for mission-oriented research. By far the largest portion of these research funds goes to agriculture (\$35 million). Other major research areas include the health sciences (\$4.5 million) and marine sciences (\$4.2 million). While in the past questions have been raised at the State level regarding the relative merits of some agricultural research--who benefits and who is negatively affected--a general discussion of State policy as it pertains to research has been lacking.

The State has both a fresh opportunity and a growing urgency to direct its attention to the long agenda of accumulated issues and problems requiring new research in the 1980s. The pressure for substantial increases in new funds created by the enrollment growth of the last two decades has diminished. Now the State and the nation must find ways to cope with the energy crisis, deterioration of our physical environment and the increasing violence of our society; these are among the pressing topics about which we need more knowledge. By design the University is the State's primary instrument for developing this new knowledge.

The Public Service and Community Service Clientele

The use of institutional resources to enhance the cultural, educational, and occupational interests of the community at large is the general purpose of the University's public service function and the Community Colleges' community service function. At the University, the major investment of State funds for this function is made through Cooperative Agriculture Extension, which uses its nearly \$24 million allocation to distribute information about and to apply the technologies derived from agriculture research to solve specific, often local, problems.

The Community Colleges' community services programs provide a variety of activities of an instructional and recreational nature. Prior to Proposition 13, approximately \$38 million annually was spent by the seventy Community College districts to provide these

services of which nearly \$30 million was supplied by local property taxes. A 1976 study of the population served by community services courses found a large percentage (76%) were women and the largest age group (men and women) was composed of those between 25 and 35.

HOW IS POSTSECONDARY EDUCATION FUNDED?

Postsecondary education in California is a \$6 billion enterprise, the support of which is broadly shared by three levels of government (local, State, and federal) and private agencies and individuals. In Fiscal Year 1977-1978, these revenue sources provided the following amounts of support: State (\$2.126 billion); federal (\$1.3 billion); local government (\$849 million); and other sources--including tuition and fees, private grants, income from auxiliary enterprises--(\$1.965 billion). Figure 2 shows the amount and percentage distribution of these funds for fiscal years 1977-78 and 1978-79. Of particular interest in this comparison of the two fiscal years is the shift in support from local to State sources which resulted from the passage of Proposition 13. This shift of funding affected both the Community College system and adult education programs.

Table 6 provides details on the source of operating revenues (1978-1979) for each postsecondary segment and agency. It is important to note that in addition to the \$4.1 billion in public funds represented as "source totals" (1978-79) (Columns 2-4) in this table, State and federal funds provided an additional \$362 million in financial aid in 1978-1979 (see Table 6). These funds overlap to some extent the revenues in the "other" category, since a considerable portion of student aid flows to the postsecondary institutions in the form of tuition, fees, and other charges.

Student Financial Aid

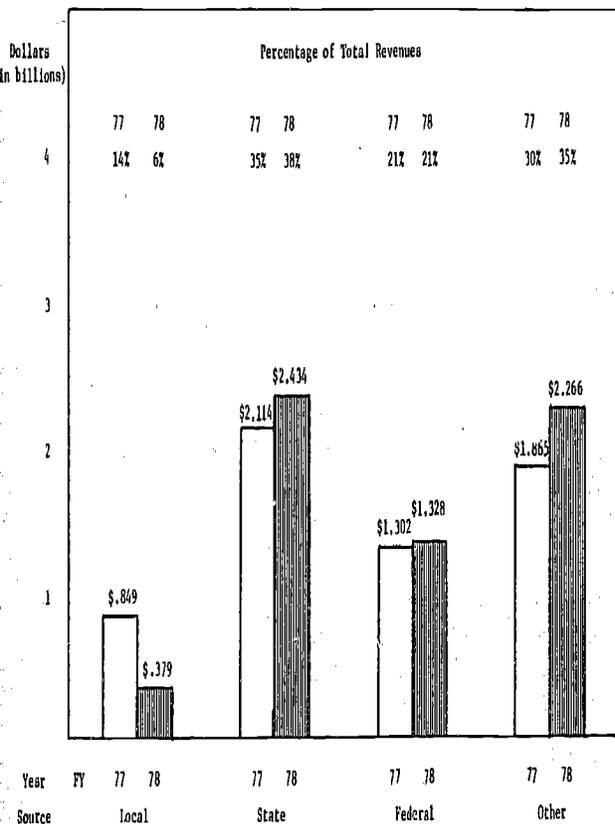
The growth of State-funded student aid programs has been dramatic, both in the numbers of students served and in the dollars available. Federal financial aid for California students is also significant and comprised over 80 percent of available student aid funds to the State in 1978-79 (Table 7).

The purposes which student financial aid programs were designed to serve have changed significantly over time. The California State Scholarship Program (now Cal Grant A) was initially designed in the 1950s to enable "a group of qualified students to attend the college of their choice," and was aimed at those who "because of financial considerations, would be unable to attend the particular college without the scholarship assistance." With the dramatic increase in enrollments during the 1960s, these purposes were expanded to

ACTUAL AND ESTIMATED OPERATING REVENUES
BY SOURCE AND SEGMENT OF POSTSECONDARY EDUCATION
1977-1978 AND 1978-1979

(in thousands)

FIGURE 2
AMOUNT AND PERCENTAGE OF OPERATING REVENUES FOR
POSTSECONDARY EDUCATION BY SOURCE, 1977-1978 AND 1978-79 (ESTIMATED)^{1/}



	1	2	3	4	5	
	Segment	FY	Local	State	Federal	Other
Univ. of California		77	- 0 -	740,099	962,601	747,197
		78	- 0 -	767,674	976,946	851,267
Cal. State Univ. & Colls.		77	- 0 -	666,372	45,629	159,367
		78	- 0 -	691,934	46,639	160,000
CCC - Bd. of Governors		77	- 0 -	18,497	- 0 -	- 0 -
		78	- 0 -	23,503	- 0 -	- 0 -
CCC - Dist. Gen. Fund		77	725,068	585,018	102,886	- 0 -
		78	348,168	814,796	79,729	- 0 -
Ad. Ed. - St. Operations		77	- 0 -	285	798	4
		78	- 0 -	287	812	59
Ad. Ed. - Dist. Operations		77	123,594	92,390	5,935	- 0 -
		78	30,600	122,400	6,914	- 0 -
Indep. Colls. & Univ. ¹		77	- 0 -	10	180,941	955,243
		78	- 0 -	1,428	212,780	1,248,820
Priv. Non-degree Schools		77	n/a	n/a	n/a	n/a
		78	n/a	n/a	n/a	n/a
Other - Hastings		77	- 0 -	4,150	938	1,546
		78	- 0 -	4,207	897	1,546
- Cal. Maritime Ac.		77	- 0 -	2,187	673	977
		78	- 0 -	2,337	507	1,326
State Admin. - Dept. of Ed.		77	- 0 -	83	817	397
		78	- 0 -	116	1,071	396
- CPSC		77	- 0 -	1,512	1,057	- 0 -
		78	- 0 -	1,740	1,693	- 0 -
- WICSE		77	- 0 -	39	- 0 -	- 0 -
		78	- 0 -	39	- 0 -	- 0 -
- St. Aid Com.		77	- 0 -	2,844	30	- 0 -
		78	- 0 -	3,079	30	- 0 -

Source Totals		77	848,662	2,113,786	1,302,325	1,864,731
		78	378,768	2,423,540	1,327,838	2,366,414
Student Financial Aid Awards ²		77	- 0 -	109,570	239,592	124,776
		78	- 0 -	121,189	240,367	115,204

Total public support excluding Student Financial Aid: 1977-1978 - \$4,264,773
1978-1979 - \$4,140,146

Total public support including Student Financial Aid: 1977-1978 - \$4,603,935
1978-1979 - \$4,502,202

Total revenues from all sources excluding Student Financial Aid: 1977-1978 - \$6,129,504
1978-1979 - \$6,406,560

Sources: Governor's Budget, FY 1979-80
Department of Finance

- In the absence of aggregate data for the independent institutions for 1977-1978, we have used 1976-1977 information reported by 70 of the largest accredited institutions in California as an estimation of the level and source of revenues for this segment.
- A large portion of student financial aid is spent by students for tuition and fees, which then become institutional revenues classified above as "other" revenues (Column 5). For that reason, a total of all revenues (public and other) which would include student aid revenues would be a fictitious and misleading figure.

TABLE 7

STATE AND FEDERAL STUDENT AID IN CALIFORNIA
1957 - 1979State Programs¹

FY	State Scholars		Cal Grant B		Cal Grant C		Educational Opp. Programs CCC/CSUC ²	Bilingual Teacher Corps/Dev. Grants	Total State Funds	
	# of Students	\$ (000s)	# of Students	\$ (000s)	# of Students	\$ (000s)	\$ (000s)	# of Students	\$ (000s)	\$ (000s)
1956-7	602	\$ 232							232	
1957-8	1,280	519							519	
1958-9	1,920	817							817	
1959-60	2,560	1,092							1,092	
1960-1	2,560	1,120							1,120	
1961-2	3,240	1,717							1,717	
1962-3	3,882	2,214							2,214	
1963-4	4,511	2,572							2,572	
1964-5	5,142	3,542							3,542	
1965-6	5,120	3,589							3,589	
1966-7	6,042	4,397							4,397	
1967-8	6,902	4,860							4,860	
1968-9	10,467	7,434							7,434	
1969-70	13,541	11,050	1,000	\$ 833			2,807		14,690	
1970-1	15,914	13,190	1,720	1,645			4,327		19,162	
1971-2	20,201	16,249	2,293	2,158			2,193		20,600	
1972-3	23,090	21,336	3,811	3,975			4,824		30,135	
1973-4	27,403	26,622	4,762	5,318	500	\$ 424	6,593		38,957	
1974-5	32,185	34,003	6,695	6,906	578	973	6,496		43,378	
1975-6	36,096	41,075	8,162	8,852	885	1,137	8,729	379	685	60,478
1976-7	39,090	46,634	12,666	13,540	1,596	2,256	11,808	575	1,119	75,357
1977-8	39,845	51,605	15,577	17,406	1,928	2,655	13,172	1,102	1,551	88,389
1978-9	39,871	55,584	19,037	19,892	2,166	3,218	14,893	1,135(est.)	1,716	95,303
1979-80	41,527	56,809	20,853	23,358	2,389	3,311	16,123	960(prop.)	1,811	101,412

Sources: State Programs: Governor's Budgets: 1958-59 through 1979-80

Federal Programs: National Institute of Independent Colleges and Universities, Federal Student Assistance and Categorical Programs, Washington, D.C., 1979.

1. These programs do not include fee waivers, student loans, college work-study and part-time-on-campus employment programs.
2. Numbers of students served not available. Also the exact amount of dollars allocated by the CCCs to student financial aid was not available for the years 1969-70 through 1974-75. For this period of time, an estimated proportion of 0.55 of the total EOP/S funds (CCC) was included in the combined total for CSUC and CCC.

TABLE 7 (Continued)

STATE AND FEDERAL STUDENT AID IN CALIFORNIA

Federal Programs
Total State and Federal Student Aid

FY	BEQG	SEOG	SSIG	CIS	NDSL	Total Federal	Total State
	\$(000s)	\$(000s)	\$(000s)	\$(000s)	\$(000s)	Funds ⁴ \$(000s)	and Federal Funds ⁴ \$(000s)
1956-7							
1957-8							
1958-9							
1959-60							
1960-1							
1961-2							
1962-3							
1963-4							
1964-5							
1965-6							
1966-7							
1967-8							
1968-9							
1969-70							
1970-1							
1971-2							
1972-3							
1973-4		\$ 23,695 ³		\$ 24,362 ³	\$ 30,908 ³	\$ 78,965	\$ 127,506
1974-5		22,201 ³	\$ 2,757 ³	23,237 ³	31,123 ³	80,318	133,376
1975-6	\$ 78,794	26,353	3,137	36,466	34,257	179,007	244,875
1976-7	126,611	26,834	6,269	34,933	34,783	229,430	314,136
1977-8	127,642	27,516	10,010	33,777	33,524	232,469	331,123
1978-9	182,952	29,454	10,236	37,120	36,892	296,654	406,319
1979-80	222,498	37,411	12,050	47,960	34,279	354,198	471,881

- The source for this information is Robert Coates, Division of Student Financial Aid, Bureau of Student Financial Assistance, OE, DHEW, Washington, D.C. as quoted in CPEC Report 78-3, State Policy Toward Independent Postsecondary Institutions (June, 1973).
- Adequate information on federal student financial aid prior to 1973-74 is not currently available.

include encouragement of "independent institutions to expand enrollment facilities and absorb a large portion of the student's educational cost without a burden on the taxpayers for capital investment in instructional facilities and operating costs."

During the late 1970s, the Cal Grant A program's explicitly stated goals have shifted almost entirely from encouraging the expansion of independent institutions to preserving options for students. With continued slow enrollment growth and potential enrollment declines projected for the near future, political and fiscal pressures have caused what appears to be a return to the objectives of the original State Scholarship program.

The College Opportunity Grant program (Cal Grant B), developed in the late 1960s, was a response to growing demand for educational opportunities on the part of those who had previously been denied them. The newest of the Cal Grant programs, the Occupational Education and Training Grants, was designed to respond to two unmet needs: (1) assistance for occupationally oriented and talented students with financial need, and (2) alleviating manpower shortages in fields requiring occupational skills training.

In the mid-to late-sixties, each of the three public segments of postsecondary education developed Educational Opportunity Programs to assist disadvantaged students in various ways. Financial aid to needy students was (and is) a major objective of these programs. Both the program in the State University and the program in the Community Colleges are funded by General Fund allocations from the State (in 1979-80, an estimated \$16 million will be spent by both these segments). In addition, the University of California spends more than \$21 million (1975-76 - latest available information) of its own funds for a similar purpose. In all three segments, the allocation of such aid is coordinated with other types of student financial aid at the institutional level in order to design complete financial aid packages for students.

State-funded student aid programs have had a variety of objectives, including meeting State fiscal and educational priorities, indirectly providing institutional support, serving a variety of student needs, and assisting in the achievement of broad social goals. It should be pointed out that while the goals and objectives of California's financial aid programs have changed and been expanded, there has been little examination of the mechanisms for achieving those goals. The Legislature, concerned with just such an examination, established a Student Aid Policy Group in 1978 for that purpose.

The Student Financial Aid Policy Group is charged with reporting to the Legislature by December 30, 1979, on the overall purposes,

relationships, and mechanisms of financial aid programs. The resulting study may indicate changes in the financial aid programs needed to respond to the changing demographics and the social and educational priorities of the 1980s.

FOCUSING ON THE STATE'S PRIORITY GOALS FOR POSTSECONDARY EDUCATION

Two complementary efforts were made in the mid-1970s to identify goals or objectives for postsecondary education which could then form the basis for planning by the segments and the Postsecondary Education Commission. The Joint Committee on the Master Plan for Higher Education identified ten "objectives critical for the next decade" which were subsequently adopted in 1974 by the Legislature in Assembly Concurrent Resolution No. 149 (Attachment A). These objectives, which focussed on such desirable achievements as academic freedom, equal and universal access, lifelong learning, diversity and flexibility in institutions, services and methods, were further expanded upon by the Postsecondary Education Commission in its first Five-Year Plan.

Recognizing that the 1960 Master Plan was silent on the subject of State goals for higher education, ^{1/} and perhaps reflecting the need for an explicit statement of direction during a period of social unrest, the Commission developed its statement of thirty-one goals (Attachment B) and used many of them upon which to base subsequent sections of its Five-Year Plan. The Commission's expansive list did not diverge from legislative direction as expressed in ACR 149, but added greater detail to general statements about access, diversity, accountability, quality, and other goals.

Neither the language of the goals' statements adopted by the Legislature nor of those adopted by the Commission reflected any of the tension that inevitably exists between their collective purposes and the resources available to achieve these purposes. It is characteristic of such statements of purpose to leave the question of means to subsequent discussions of implementation. Thus, while the discipline of identifying and clearly expressing goals had value in establishing a general commitment or intent, these goals have left largely unresolved the difficult problem of how much of our finite resources in the future should be allocated to achieving individual goals.

1/ The Master Plan for Higher Education in California, 1960-1975, did, however, contain some sixty-seven separate recommendations which were the basis for subsequent decisions and actions on behalf of higher education in the State.

Priorities among desirable goals must be established. In 1974 the Legislature set such a priority in ACR 150, which included this statement of intent:

. . . it is the intent of the Legislature that a major goal of California for the remainder of the 1970s shall be to insure that considerations of quality of early schooling, ethnic grouping, family income, geographic location, and age no longer impede the access of any citizen to the benefits of higher education;

Legislative actions which followed this statement of intent were, in large measure, consistent with this priority. For example, State student aid funds increased 110 percent in the six years following this statement of intent. (Cal Grant B funds increased 229 percent during this period--from \$7 million to \$23 million!) As this example illustrates, commitment to a priority goal can be translated easily into action when sufficient State funds are available.

With the prevailing political and economic climate in the State, however, such an expansion of funding for a priority goal is not likely to occur from "new monies." Financial support for the priorities of the 1980s may need to be derived more and more from a reallocation of funds currently assigned to lower-priority programs. It has not been considered de rigeur for advocates of postsecondary education to speak of the internal reallocation of resources as a means for changing the system. The State's budgeting system does not readily lend itself to this type of decision making. In the incremental budgeting approach used by the State, the base budget (previous years' experience) is generally not examined for revenue savings which can be redirected to new or expanding programs.

The goals for postsecondary education have been exhaustively considered and stated by both the Legislature and the Postsecondary Education Commission. Since what is desirable is not necessarily what is possible, priorities for the 1980s must be set from among these goals. The process for setting these priorities must be deliberate and broadly based in its consultation, for emphasis on one program will more often than not lead to a de-emphasis of another. Such will be the nature of decisions in the 1980s.

IDENTIFYING THE IMPORTANT POLICY QUESTIONS FOR THE 1980s

The system of public higher education for which the 1960 Master Plan was developed is now mature and well intact. The chief principles of the delineation of functions and the open-door access to the system through the Community Colleges are not being seriously challenged and seem to be as appropriate for the current environment as they were during the 1960s, the era of rapid growth.

The times are different now, though, and rather than having to develop a system to provide access to increasing numbers of students, California must now consider how much effort and how many resources should be devoted to maintaining stable enrollments and to increasing services to the minorities, the handicapped, and the older adult population.

Also, the educational system is different now. "Postsecondary education" is a more comprehensive term than higher education: it represents a different way of defining educational services and reflects a public policy which acknowledges the fact that a diverse population has diverse educational needs.

This new era with all its challenges and this mature educational system with its imposing size and diversity together suggest the need for the State to review (and, perhaps, revise) the several major policy areas upon which most legislative and administrative decisions about postsecondary education have been made. Not an exhaustive agenda for the 1980s, but the reexamination of some basic principles in the context of new conditions, may best serve the State at this point in history.

ATTACHMENTS

ATTACHMENT A

Assembly Concurrent Resolution No. 149

RESOLUTION CHAPTER 140

Assembly Concurrent Resolution No. 149—Relative to public post-secondary education.

[Filed with Secretary of State August 23, 1974.]

LEGISLATIVE COUNSEL'S DIGEST

ACR 149, Joint Committee on the Master Plan for Higher Education (Assemblyman Vasconcellos, Chairman). Public postsecondary education: goals.

Expresses intent of Legislature re statewide goals for public post-secondary education during the next decade.

Resolved by the Assembly of the State of California, the Senate thereof concurring, That it is the intent of the Legislature that statewide goals for public postsecondary education during the next decade shall be as follows:

- (a) Academic freedom and responsibility.
- (b) Equal and universal accessibility to the system for persons of both sexes and all races, ancestries, incomes, ages and geographies in California.
- (c) Lifelong learning opportunities for persons with capacity and motivation to benefit.
- (d) Diversity of institutions, services, and methods.
- (e) Flexibility to adapt to the changing needs of students and society.
- (f) Cooperation between institutions in assessing area educational needs and resources and meeting those needs.
- (g) Involvement with local communities in providing educational services and utilizing community resources in the educational process.
- (h) Increased understanding of the learning process—to be sought and applied throughout higher education.
- (i) Discovery of qualitative and quantitative evaluation methods for learning, research, and teaching.
- (j) Accountability throughout postsecondary education including:
 - (1) Accountability of institutions to the individual (for instruction and related services),
 - (2) Accountability of institutions to the public and its representatives,
 - (3) Accountability of the individual (faculty, student, staff) to the institutions, and
 - (4) Accountability of the public and its leaders to the institutions (for support and development)
- (k) Discovery and communication of knowledge; and be it further

4 149 30 63

Resolved, That the Chief Clerk of the Assembly transmit copies of this resolution to the Regents of the University of California, the Trustees of the California State University and Colleges, the Board of Governors of the California Community Colleges, California Community Colleges district governing boards, and the California Postsecondary Education Commission.

ATTACHMENT B
STATE GOALS
FOR
POSTSECONDARY EDUCATION

I. ACCESS AND RETENTION

- A. Insure that all persons have convenient access to educational and career counseling in order that they be encouraged to make informed choices from among all available options.
- B. Maximize physical access to educational institutions, centers, programs, or services.
- C. Insure that all learners be provided adequate student support services to enable them to participate fully in postsecondary education.
- D. Foster postsecondary education services which allow an individual to pursue educational and career goals throughout life.
- E. Work to eliminate financial barriers which prevent students from selecting and pursuing the educational or occupational program for which they are qualified.
- F. Foster a well-articulated system of programs and services in postsecondary education which is responsive to individual educational needs, in order to provide the opportunity for students to progress at a rate appropriate to their abilities.
- G. Utilize admissions and registration procedures which will facilitate each person's pursuit of an educational or occupational program appropriate to his/her ability and aspirations.
- H. Work toward the equitable participation of ethnic minorities and women in the admission and retention of postsecondary education students.

II. ACCREDITATION AND CREDENTIALING

- A. Encourage the increased effectiveness of accreditation of postsecondary education institutions in the State.

- B. Encourage postsecondary education to develop a comprehensive system of valid measures for knowledge gained both inside and outside formal academic programs.
- C. Encourage the establishment of educational requirements for licensure that are appropriate and reasonable in certifying occupational competency and the development of means for meeting these requirements including both educational programs and competency testing.
- D. Work toward public understanding of the nature and significance of academic degrees, including their strengths and limitations as a measure of ability and skills.

III. FINANCING

- A. Insure that State funds are allocated and employed in a manner which will provide for the optimum utilization of all postsecondary education resources in the State.
- B. Provide adequate funding to meet operating and capital needs of public postsecondary education and to employ the most effective methods for determining the adequacy of State funding for postsecondary education in California.
- C. Determine the financial needs of independent institutions and the extent to which the State should aid in meeting these needs.
- D. Develop a process for insuring that federally funded postsecondary education programs in California are in harmony with State priorities in postsecondary education.

IV. ORGANIZATION AND GOVERNANCE

- A. Maintain a proper distribution of authority among institutions, segments, and the State in order to achieve effective coordination of educational resources without inhibiting creativity at the institutional or segmental level.
- B. Encourage regional interinstitutional or intersegmental cooperation which will facilitate and enhance the effective coordination and delivery of educational services.

- C. Insure that in the process of collective bargaining, the operations and philosophy of postsecondary educational institutions be retained in the context of academic freedom and collegiality.
- D. Work toward achieving an equitable participation of ethnic minorities and women in administrative, faculty, and staff positions in postsecondary education institutions.
- E. Encourage the participation of independent colleges and universities and private vocational institutions in the statewide planning process to insure orderly development of postsecondary education in California.
- F. Determine the need for new services to part-time adult students and the best means for meeting this need.
- G. Develop a series of comprehensive state-level systems of information collection, storage, retrieval and dissemination which will facilitate the making of informed decisions about postsecondary education.
- H. Recognize the interests of students, faculty, staff, administrators, and the general public in the governance of postsecondary education.

V. PROGRAMS AND SERVICES

- A. Improve the collection and dissemination of information on State and national manpower needs and consider this information in the planning and evaluation of related education programs.
- B. Assess the quality of academic and vocational programs, and the means used for establishing, maintaining, or improving such quality.
- C. Provide maximum flexibility in the mode and format of instruction and in the use of instructional media in order to encourage and facilitate individual learning.
- D. Maintain and periodically review the effectiveness of the differentiation of functions among the public segments of California postsecondary education including the designation of specialized missions for campuses within the segments.

- E. Continue to affirm the worth of teaching, research, and public service in order to provide appropriate incentives and rewards to those who carry out these activities.
- F. Develop and maintain an integrated statewide vocational education planning process involving all affected State agencies concerned with vocational education planning at both the secondary and postsecondary levels.
- G. Assure that adequate public support is directed to the discovery of new knowledge.

THE 1980s ENVIRONMENT FOR POSTSECONDARY EDUCATION

The social and economic environment in which postsecondary education operates influences in many perceptible ways the amount and quality of the educational services which public and private institutions provide. Those who make decisions about the provision of such services are to some degree continually scanning the past and present for information about the effects of particular events (or decisions or movements or trends), estimating the likelihood of their re-occurring in the near future and their potential impact upon the system of postsecondary education. While more often than not it is impossible to draw strong cause-and-effect inferences from such observations, some effort at tracking social and economic trends and estimating the possible occurrence of certain types of events is worthwhile. In a complex society such as today's, it is desirable to have a number of indicators to track, in order to increase sensitivity to changes in the environment.

One of the most predictable elements in California's future is the size of its population, but recent experience shows that changes in the environment can affect the proportion of this population which will participate in postsecondary education. Initial questions about the effects of the future environment upon postsecondary education are reducible to this one. If x event (trend, etc.) happens, what will be the effect upon the number of people to be served?

From the coincidence of certain recent events and changes in participation rates in postsecondary education we tend to infer causal relationships. For example, during the economic recession of the mid-1970s California's unemployment rate rose from 7.0 percent in 1973 to 9.9 percent in 1975, and then declined to 8.1 percent in 1977. The participation rate of California's 18- and 19-year olds peaked in 1975--rising from 430 to 466 per 1,000--and then declined to 438 in 1977. One explanation of this phenomenon is that the "peaking" in participation rates reflected a response to the tight job market.

This explanation runs counter to the findings of many economists who have studied the responses of students to labor market conditions over longer periods of time. In general, such findings suggest that over periods longer than a single student generation, participation rates are affected negatively by a declining labor market, although the effects on total enrollments and graduation rates obviously lag behind as the waves of affected students pass through the system.

If predicting the effects of fairly quantifiable social phenomena, such as unemployment, upon enrollments must be approached with

caution, other social indicators should likewise be used with great discretion. Nevertheless, even imperfect information about the future is preferable to operating on collective hunches, and so decision makers must proceed to try to learn what they can about how the society and economy may change in the future.

There are at least four major social or economic factors that can be predicted to have significant effects upon postsecondary education in the future: (1) population trends, (2) college participation rates, (3) the energy "crisis," and (4) inflation. These four factors are interrelated in many ways and, except perhaps for college participation rates, lie outside the ability of the postsecondary system to change in any short-term or direct way. These factors will have profound effects on the shape of educational policy over the next few years, since all four conditions now exist to one degree or another and even now can be observed to be affecting the system. Any uncertainty about their continuing effects is largely a question of degree.

POPULATION TRENDS

The remarkable variation in the nation's birth rate between 1950 and 1970 produced what one journalist has characterized as the "boom-to-bust" cycle. Both the population bubble of the post-World War II "baby boom" and the "baby-bust" of the 1960s are well-known phenomena. Their effects on the age profile of the State's population for the next decade will result in a substantial growth in the proportion of older adults (Figure 1).

Among the more important results of these coming changes in the age profile are:

1. The college-age population (18-24) is projected to decline from a peak of 2.9 million in 1982 to a low of about 2.45 million in 1992 (Figure 2).
2. The young adult population (25-34), which is made up of the post-World War II babies, will continue to grow until it is nearly double the size of the 18- to 24-year-old population in the early 1990s (Figure 2).
3. The older adult population (65 and above) will again outnumber the college-age cohort toward the end of the 1980s (Figure 3). Not since about 1961 has the number of older adults been larger than the 18- to 24-year-old group.

These projections are relatively dependable because they are based upon California's current (living) population--except for the 18- to

FIGURE 1
HOW AGE MIX WILL CHANGE IN CALIFORNIA

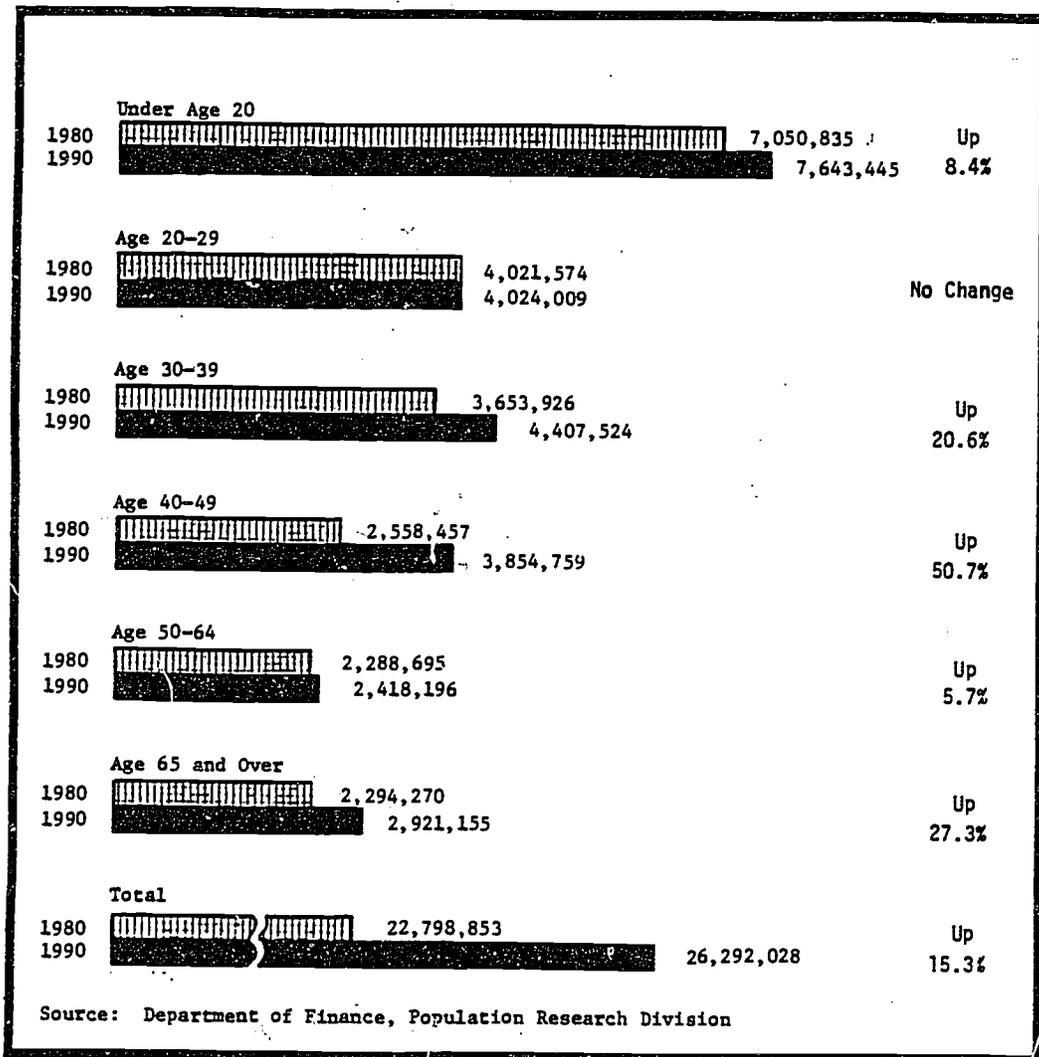
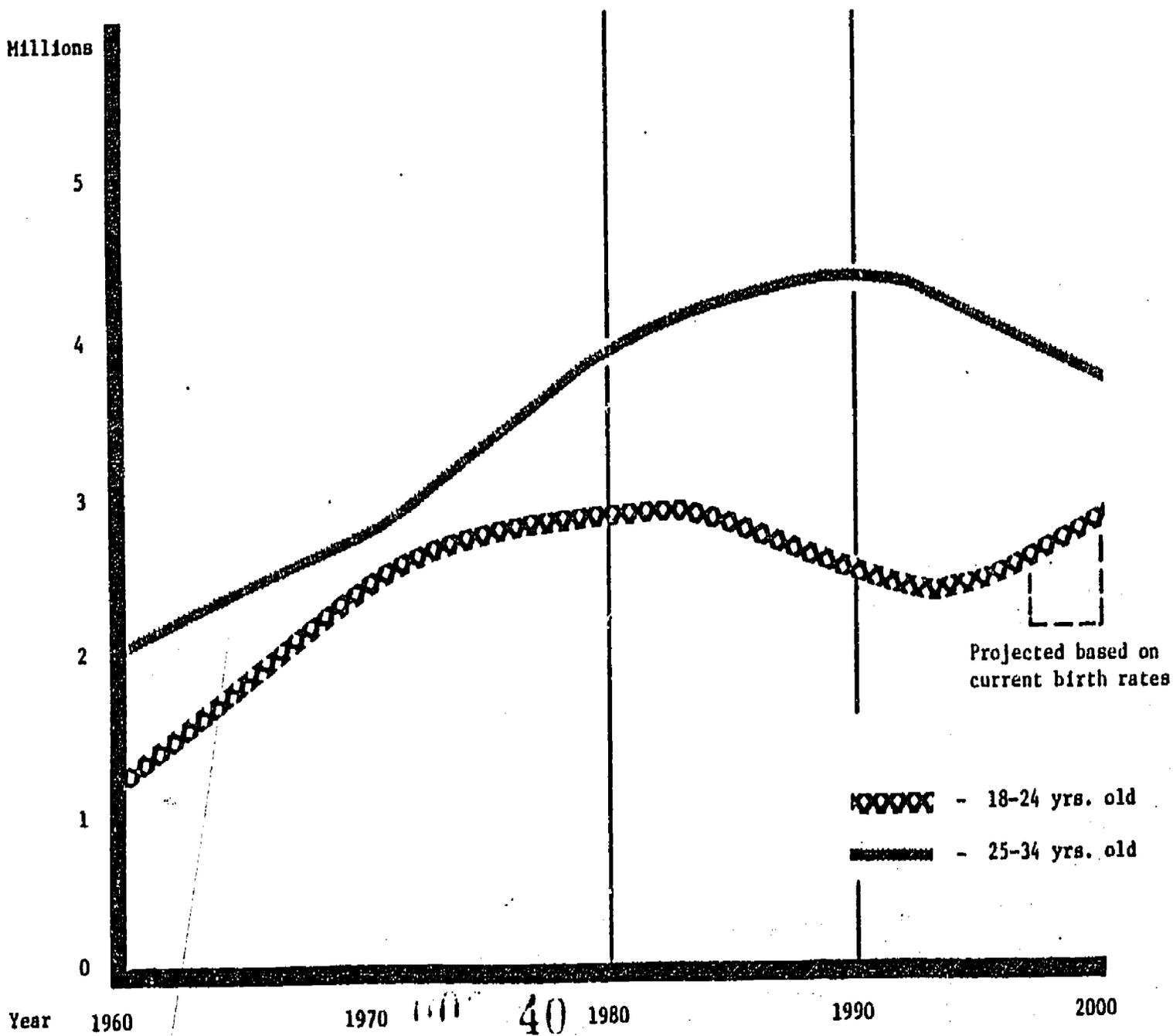


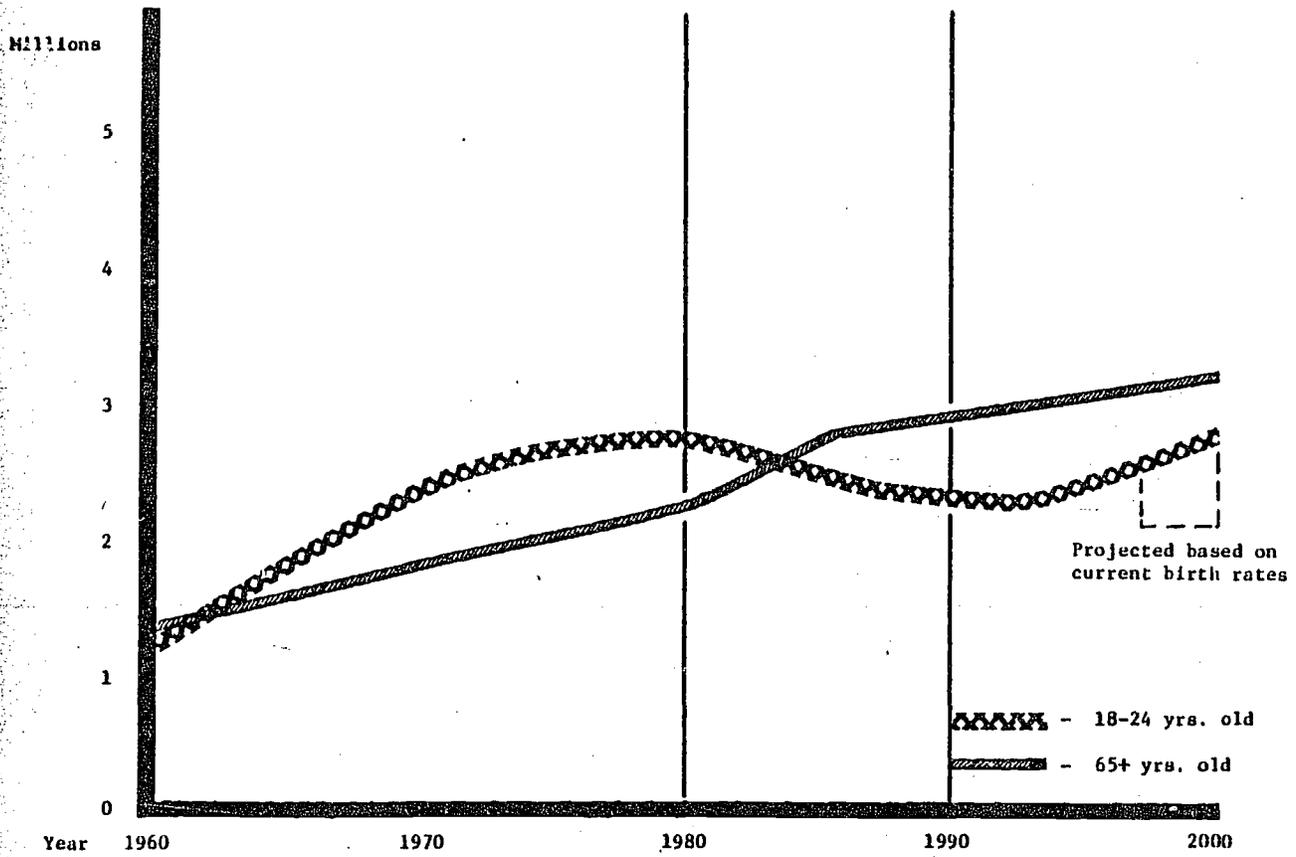
FIGURE 2

ACTUAL AND PROJECTED CALIFORNIA POPULATION,
18-24 YEARS, 25-34 YEARS - 1960-2000



Source: Department of Finance

FIGURE 3
 CALIFORNIA'S ADULT POPULATION - AGES 65+
 COMPARED TO THE 18-24 YEARS OLD POPULATION
 (1960-2000)



Source: Department of Finance

24-year-old population from about 1995 on, as indicated in Figure 2-- and because the mortality rates which, while declining somewhat are relatively stable. Barring a catastrophe, such as a major war, a significant change in the State's immigration rate would be the only likely factor to influence these projections. Current projections are based upon a moderate, positive net immigration rate of about 300,000 people per year. The continuation of this rate of influx is a reasonable assumption.

A second important population trend is the increase in the proportion of minorities in California. This trend is clearly evident, especially in some of the larger metropolitan centers such as San Diego, Sacramento, Los Angeles, and San Francisco. The State Department of Education recently reported that the proportion of racial and ethnic minority students in the public school system increased from 25 percent in 1967 to 36.5 percent in 1977. The ethnic distribution in four selected districts is illustrated in Table 1.

TABLE 1
DISTRIBUTION OF STUDENTS BY ETHNICITY IN THE SAN DIEGO,
SACRAMENTO, LOS ANGELES AND SAN FRANCISCO
SCHOOL DISTRICTS, FALL 1977

<u>Ethnicity</u>	<u>School District</u>			
	<u>San Diego</u>	<u>Sacramento</u>	<u>Los Angeles</u>	<u>San Francisco</u>
American Indian	0.3%	1.6%	0.7%	0.6%
Hispanic	14.7	16.6	34.9	14.3
Black	14.9	21.0	24.6	28.8
Asian	3.9	10.6	4.9	24.0
Filipino	2.3	n/a	1.3	10.3
White	63.8	50.2	33.6	22.1

Source: Intergroup Relations, State Department of Education.

With the intercultural richness that such diversity creates come some difficulties as well. Although there are notable exceptions, minorities still appear to encounter problems with the traditional educational system of the majority culture. Minorities generally (1) have a lower rate of persistence in high school, (2) have a lower eligibility rate for entering college, and (3) have more severe English-language problems, particularly the Hispanic and Asian students.

The combined effects of the first two problems result in lower participation rates in postsecondary education, which, as these groups become proportionately larger in the State's population, significantly affect statewide enrollments.

The third problem--the language handicap of some minorities--contributes to the dilemma of the colleges and universities in dealing with underprepared students--although the lack of preparation for college-level work is not solely a "minority problem."

The effects of all three problems--high school attrition, low eligibility for college, and the lack of preparation in English--are felt by the postsecondary institutions in lower enrollments and in the demand for remedial education in college, even though these educational needs should be addressed primarily in the elementary and secondary schools before the students reach the postsecondary level.

While the changing ethnic composition of the State's population merits close attention and sensitive response, the changing age profile undoubtedly will have a greater effect on the numbers of students attending college. Clearly, the size of the population pool from which colleges and universities draw their students will diminish, leading to a general decline in enrollments. Although enrollments may be expected to decline across the board--except perhaps for the most selective institutions--the amount of that decline most likely will vary widely, depending upon the type of institution, its location, and many other factors beyond the scope of this paper.

By the end of the 1980s--perhaps even sooner--the diminishing number of college graduates will produce a greatly increased demand for their services (assuming a healthy economy), a condition, David W. Breneman, a Brookings Institute economist, believes should be brought to the attention of students who will be graduating in this period. In this more favorable job market, Breneman suggests that students, having less cause to be anxious about employment opportunities, may return to the liberal arts curricula. A "rebirth" of student interest in the liberal arts would support and extend the current, growing emphasis on these curricula in many of the nation's leading universities. (See, for example, a discussion of the return to a "core curriculum" in Educating for Survival by Ernest L. Boyer and Martin Kaplan.)

The growth in the number of 25- to 34-year olds, as illustrated in Figure 2, has its own particular significance for postsecondary education. This age group has a level of participation in postsecondary education second only to that of the 18- to 24-year

olds, although in recent years its participation rate, like that of the 18- to 24-year olds, has declined (from 12.7 percent to 11.6 percent). There are several points to be noted concerning the characteristics of this age group and their implications for postsecondary education. During the 1980s these adults:

1. Will comprise the largest segment of the adult population and, thus, will be an important force in determining public policy; and
2. Will have the highest average educational level of any of their predecessors. There is strong evidence that the higher the educational level of a group, the more likely are its members to participate in continuing education throughout their lives. Thus, the participation of this segment of the adult population in further education can be expected to be higher than at present, assuming current policies affecting educational opportunity remain in effect.

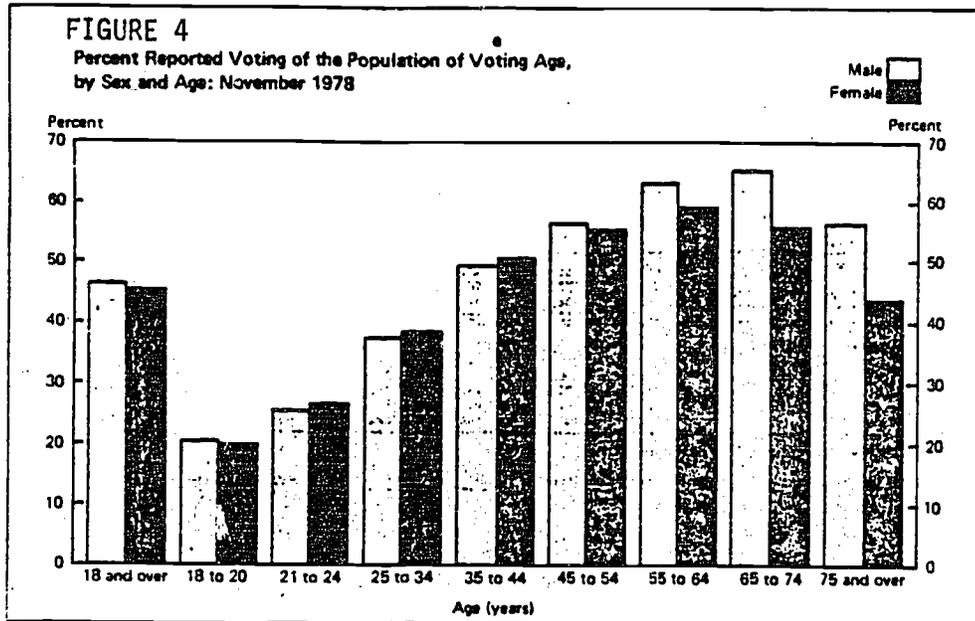
It should be noted, however, that both research and recent experience with budgetary reductions caused by Proposition 13 indicate that these older adults (over 25) are more affected by changes in policy related to educational fees or geographic accessibility of services than are younger adults. Policy decisions which increase student fees or restrict off-campus programs thus have a greater impact upon enrollments in this age group. The converse could also be expected, however; that is, lower fees and expanded off-campus instruction--by means of instructional media, for example--might result in a substantial increase in enrollments of older adults.

The increase in the proportion of older adults in the State's and nation's populations will lead almost inevitably to increased public attention to their interests and needs. Where competition for limited public funds is an issue between young adults (education) and older adults (social security, retirement, health insurance, rent subsidies) the overwhelming political force, as measured in numbers and voting record (Figure 4), will be found in the older adult population.

Interest in the public policy shifts that may be created by the coming changes in the nation's population profile is growing. Both the Joint Economic Committee of Congress and the Administration have broken new ground in extending their analysis of long-term population trends and relating them to budgets and public policy. Policy development at the State level also will need to consider more thoroughly the implications of these population changes.

FIGURE 4

PERCENT REPORTED VOTING OF THE POPULATION OF VOTING AGE,
BY SEX AND AGE: NOVEMBER 1978



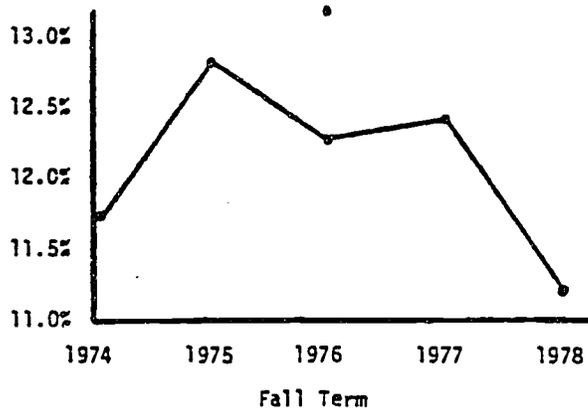
Source: Current Population Reports, Series P-23, No. 85,
U.S. Department of Commerce, Bureau of the Census.

COLLEGE PARTICIPATION RATES

Since reaching an all-time high in 1975, the rate at which Californians enroll in college has been declining. The relatively stable enrollments in both the public and private institutions through 1977 have masked this decline because the college-age population from which these enrollments come has been, and is still, growing at a rate of approximately 1.5 percent per year. In 1978, a year in which Proposition 13-related budget cuts were first felt, enrollments in public institutions fell by 129,313, due to, in large measure, the cutbacks made in courses in the Community Colleges and the State University system. (This happened despite the continuing growth in the 18- to 24-year-old population and the even more rapid increase in the 25- to 34-year olds. Figure 5 illustrates the extent of the drop in college-going rate from their historic high in 1975.

FIGURE 5

PERCENTAGE OF CALIFORNIA POPULATION AGE 18 AND ABOVE ENROLLED
IN DEGREE-GRANTING POSTSECONDARY EDUCATIONAL INSTITUTIONS



Source: Statewide Population - Department of Finance.

According to recent Commission research, this decline does not appear to be caused by a decline in the proportion of recent high school graduates going on to college. Their college-going rate has remained relatively constant over the past decade. There appear to be two explanations for the decrease in the participation rates of the population as a whole:

1. Greater attrition among high school students means that a smaller proportion of the population graduates from high school. (An earlier Commission study found that the percentage of high school sophomores who finally graduate from high school has fallen from 81 percent in 1965 to about 70 percent in the latter seventies.)
2. There is reason to believe that there also is increasing attrition among students who do go on to college. Thus, while college-going rates of high school graduates remains constant, their increasing lack of persistence contributes to the declining participation rates.

The State Department of Finance now is projecting that enrollments in postsecondary education will decline steadily over the next ten years, due largely to the decline in 18- to 24-year olds. The

significance of lower participation rates is that if they continue downward, the enrollment decline could be more severe than expected. It is possible to influence these rates through judicious public policy but, by and large, the most effective actions for stimulating participation--for example, expanding the number of campuses--seem to run counter to demographic, fiscal, and political realities.

COSTS OF ENERGY

Although the nation might avoid an energy shortage severe enough to require rationing, the problem of rising energy costs--one element in the larger problem of an inflationary economy discussed below--will continue to be a negative factor in the socio-economic environment.

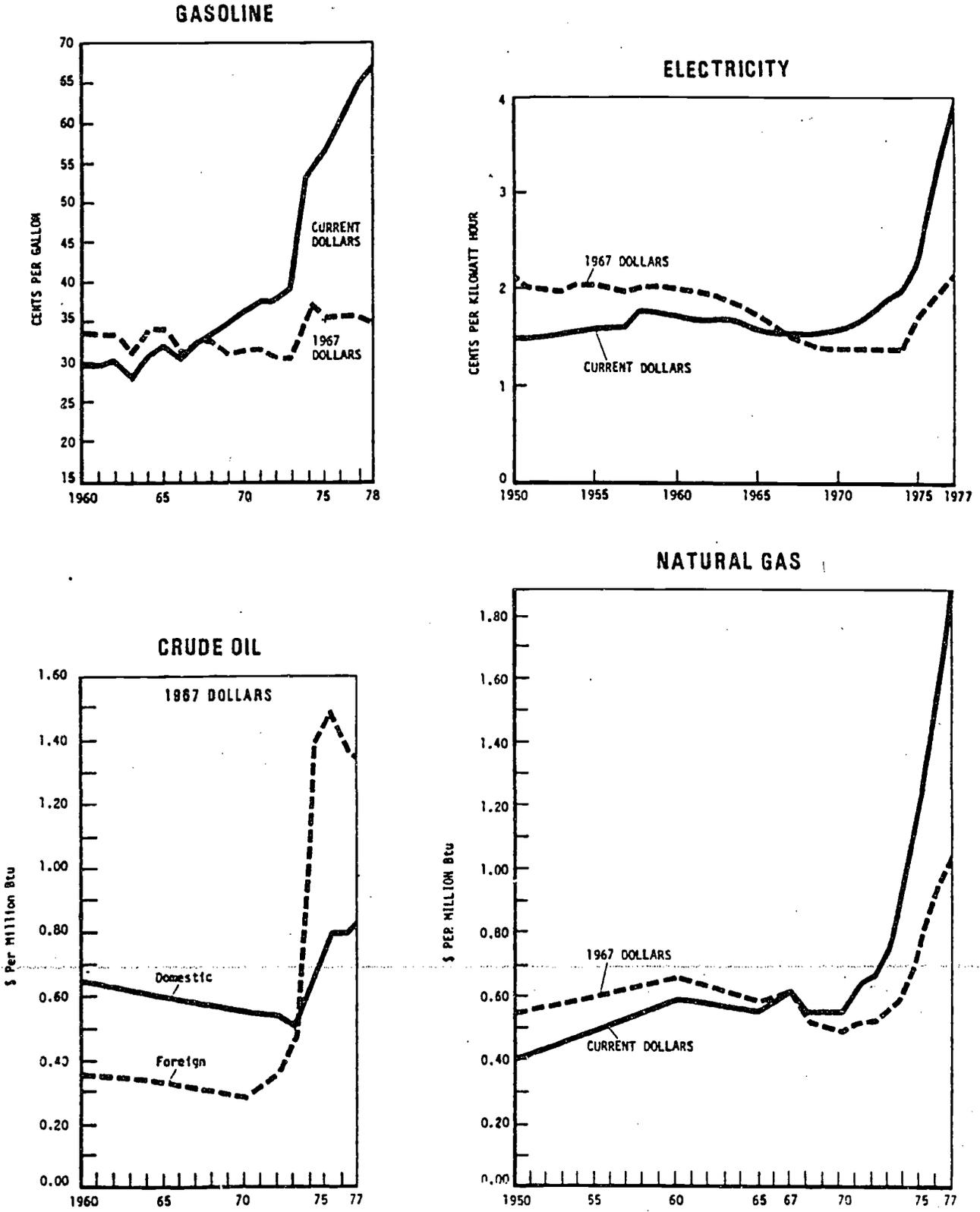
Figure 6, provided by the California Energy Commission (CEC), illustrates the recent abrupt rise in prices of various energy sources. From personal experience, most readers will be able to extend at least the trend line of gasoline prices to approximately one dollar per gallon for 1979. This increase in gasoline costs to the consumer amounts to about a 150 percent rise over the last six years! For Californians, these costs have to be considered in public policy development.

Transportation consumes 42 percent of the total amount of energy consumed in California and is the fastest growing sector of energy consumption. It is also the most inefficient. Of the 5,131 trillion btu's of energy reaching the consumer in 1977, 52 percent was lost to productive use. The transportation sector, according to the CEC, was responsible for 59 percent of that loss.

The continuing "energy crunch" poses both opportunities and problems for postsecondary education. Clearly, with the rise in the costs of energy, the costs of education will rise. Effective facilities management has been successful in reducing the amounts of utilities used by various sectors, including some colleges and universities. Energy consumption in 1977, in both the residential and nonresidential sectors, was below that of 1975 as a result of successful conservation measures. As might be inferred from the discussion above, however, the transportation sector has not been an area where conservation efforts have succeeded and the rising costs in this area has an immediate and direct impact upon students. Revised course schedules, off-campus classes, and telecommunications are remedies which institutions will need to consider more seriously in an effort to moderate the effects of students' skyrocketing commuting costs.

Figure 6

ENERGY PRICE TRENDS



Source: Looking Ahead for California, Energy Choices for California.
California Energy Commission, 1979, p. 36.

New educational programs will be needed to help the State produce new energy sources, while conserving present ones. For example, the Governor's Office of Appropriate Technology is developing a six-month solar training curriculum aimed at meeting the needs of at least a part of the 50,000 people who, the CEC estimates, will be employed by the emerging solar industry by 1985.

Finally, universities will be called upon for applied and basic research that will help develop new energy sources and better conserve present ones. Without a major scientific breakthrough, the prospects for the next ten to twenty years hold little hope for an improvement in the supply of energy required for continued expansion of the economy. Therefore, the expectation of a greater concentration of financial resources and expertise in the area of energy research and education is more than warranted.

THE ECONOMY OF THE 1980s

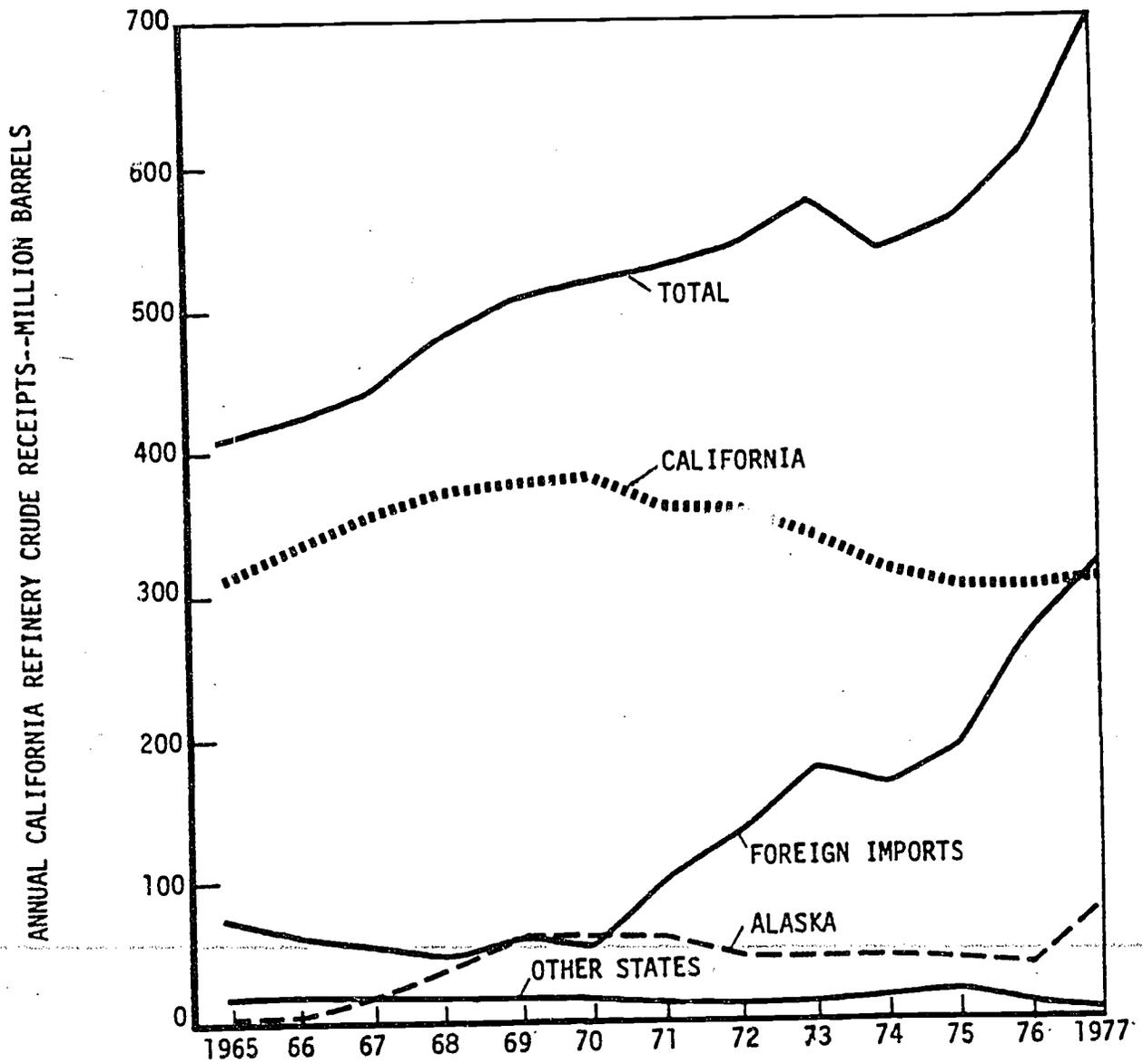
There is both consensus and disagreement among economists regarding how the nation's economy will weather the 1980s. While there is substantial consensus about the inevitability of inflation, for example, and a widely shared expectation that the recent double-digit inflationary spiral will gradually moderate, there is some disagreement on the extent to which inflation will be brought under control. Breneman reports "virtually all economists" agreeing on a range of 6 to 10 percent for the foreseeable future. Economists employed by U.S. News and World Report see a downward drift to 5 percent by 1990, with an average of 6.2 percent through the 1980s.

During the 1970s, there has been a measurable decline in the standard of living for the average American. Disposable personal income fell to a low of 85.1 percent in 1977, from above 90 percent in the 1950s and around 88 percent throughout the 1960s. In part, the nation's economic "stop-and-go" policy of shifting between concern for inflation and concern for high unemployment has been blamed for the sluggish economy. However, the economy is expected to improve. "Bad as things are at the end of the 1970s, they will be better in the 1980s," Walter Heller has said. But the change for the better will come toward the middle and end of the decade not in the first few years.

There is a need for an economic policy which comes to terms with supply constraints, especially those imposed by limited and costly energy supplies. Economists generally agree that the nation's growing dependence upon foreign sources of energy is the most negative aspect of the economy as the nation enters the 1980s. California's economy reflects this growing dependence (Figure 7). The prospects of a better decade ahead rest heavily upon the nation's and the State's responses to this fundamental problem.

Figure 7

ANNUAL CALIFORNIA REFINERY CRUDE OIL RECEIPTS
1965-1977



Source: Looking Ahead for California, Energy Choices for California. California Energy Commission, 1979, p. 35.

California's economy is expected to fare somewhat better than the nation as a whole. Many of the industries which are expected to be the fastest-growing during the next decade--aerospace and airlines, TV production and broadcasting, home electronics, computers, health care--are found in California. The State's growing population also is expected to boost its economy. As one of the sunbelt states, California will be growing faster than the nation as a whole, especially in the age categories over 40 (Figure 8).

The large increases in the 30- to 49-year-old population (Figure 8) will provide a healthy demand for cars, homes, furniture, clothing, recreational equipment, and leisure-time services. The population of older adults, 65 and over, will be larger, healthier, and wealthier than today's senior citizens and will provide an expanding market for the leisure industry in California.

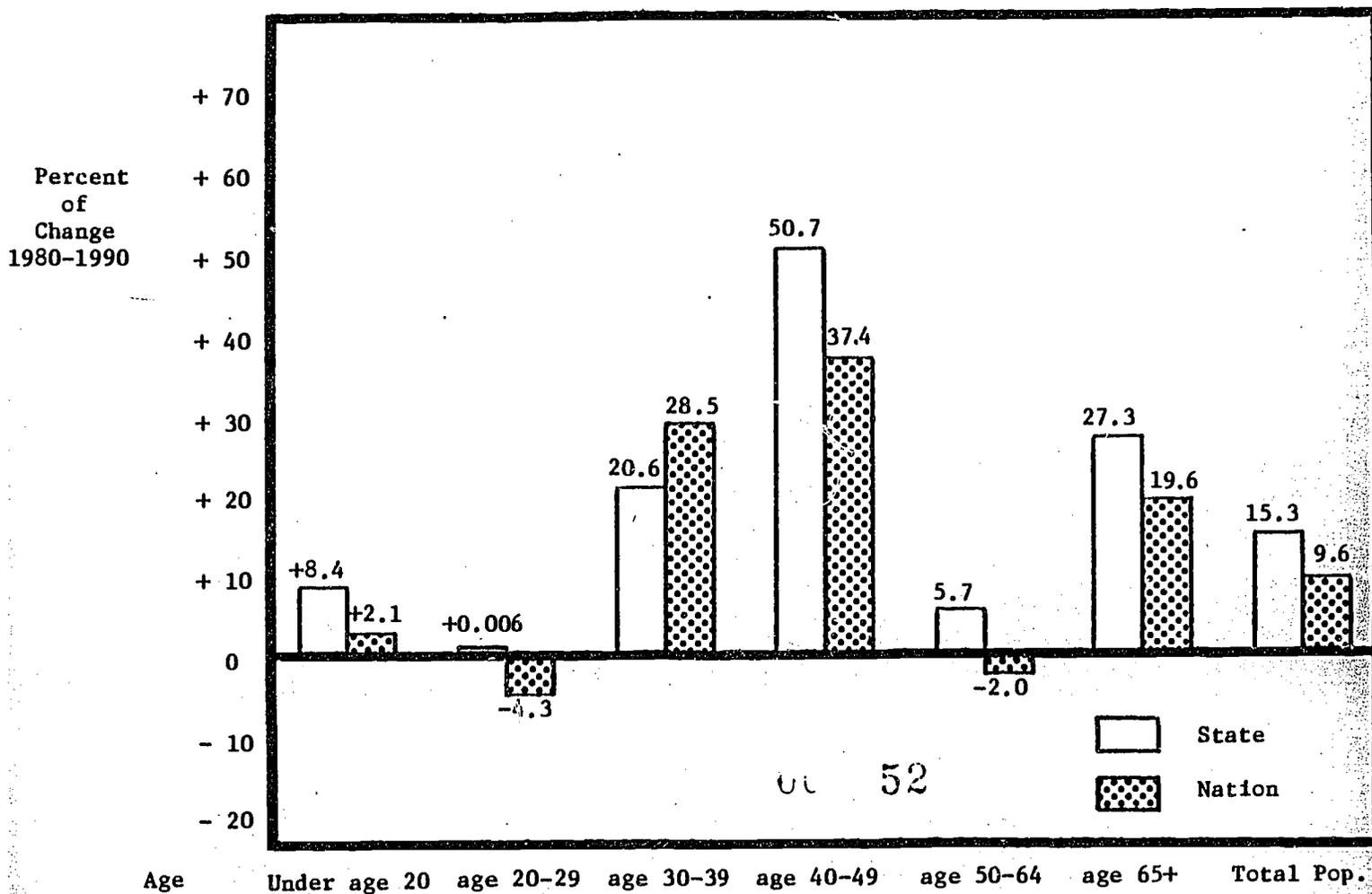
For postsecondary education, the mixed economic outlook has some good news and some bad news. After the current recession has abated, the financial outlook for both public and private institutions should improve. By the mid-1980s, moderating inflation, combined with a healthy economy, should enable the State and private donors to offer postsecondary institutions the support they require to maintain quality programs. For public education, however, measures to limit public spending and tax reform initiatives remain a cloud on the horizon. The degree to which the State's voting taxpayers will be willing to continue supporting public postsecondary education is presently quite uncertain.

As was mentioned in the discussion of population trends, the potential for greater competition for limited public funds confronts postsecondary education. If the current period of fiscal conservatism persists, and declining enrollments are translated into shrinking support for education generally, the needs of middle-aged and older adults will receive increased attention. Figure 8 dramatically illustrates that the State's population profile in 1990 will be weighted toward the older age groups to even a greater degree than the nation's.

For the short term, the "bad news" for postsecondary education, as for all other sectors of the economy, is double-digit inflation. The rising costs of providing educational services as well as the impact of inflation on basic living costs can be expected to take its toll in a lower quality of education and in a lower college-going rate. Nationally, it is reported, public institutions have raised their tuition and fees by an average of 121 percent over the past ten years, while private institutions, starting from a higher base, have increased tuition an average of 91 percent during the same period.

FIGURE 8

THE CHANGING AGE PROFILE OF CALIFORNIA AND THE NATION
1980 - 1990



The effects of inflation on postsecondary education could have the following results:

- . Faculty salaries could continue to decline in purchasing power, creating a disincentive for the most promising individuals to enter the profession. Salaries in the University and the State University have declined 44.3 and 40.1 percent in purchasing power over the past ten years.
- . Direct educational costs to students could rise faster than their ability to pay and thus further depress participation rates in all segments of postsecondary education.
- . Costs for instructional resources could continue to increase at a double-digit rate each year while instructional budgets were increasing at a much lower rate. Over time, a substantial dilution of such resources would undermine the quality of educational programs generally.

PUBLIC OPINION OF POSTSECONDARY EDUCATION

Public opinion about postsecondary education--its merits, its benefits to the individual and society at large--is of considerable importance to the educational enterprise. Individual and collective decisions about attending or supporting a college, as well as local and statewide policy decisions of governing bodies, are influenced in part by a certain secular faith (or lack of faith) in the institution of education. To some extent during the 1970s, public education was caught in society's general skepticism about the integrity of its political institutions. During this period, however, national opinion polls indicate that the public did not waver significantly in its opinion that education itself was a high priority and that the nation was spending too little to improve its educational system.

Although support for education as a national and State priority can be observed, there is, nevertheless, a clear concern on the part of the public for better management of the educational system. A public opinion poll conducted in California soon after the passage of Proposition 13 revealed--to the surprise of many--widespread support for the public schools (elementary and secondary education) but a strong desire for greater accountability. This concern undoubtedly extends to the management of public higher education.

In a recent report by the National Task Force on the Accountability of Higher Education to the State, formed by the Education Commission of the States, the authors conclude that state government must provide greater direction to higher education in this matter. Although states have tried a variety of means for providing

accountability to the public--e.g., fiscal audits, "sunset" legislation, and performance audits--most have not developed a comprehensive approach. Accountability takes on a new importance in an era in which "straight line projections" of increasing populations, participation rates, and budgets are no longer appropriate.

Part of the uncertainty about the environment with which post-secondary education now must contend and will continue to deal with during at least the early 1980s is the lack of consensus about appropriate content, standards, and modes of learning for the baccalaureate degree. This is not to suggest that public opinion should be the sole arbiter of postsecondary education goals; however, to the extent that institutions hold to widely divergent standards and practices in awarding degrees, to that extent the public will be led to charge the system with a lack of integrity that may be detrimental to all. The question of legitimacy is raised with respect to lifelong learning, awarding credit for life experience, instruction via various media, and off-campus programs. Postsecondary education will need to continue dealing openly and candidly with this question.

CALIFORNIA'S STUDENTS

STUDENT NEEDS AND GOALS IN THE 1980s

Overview

The face of California higher education has changed markedly during the 1970s, although there was less change than some had hoped for. There were more dark faces, more women, older students, and more students who entered college without the skills deemed necessary for college work. The rate of change in student characteristics and needs is expected to accelerate in the 1980s, in large part as an outcome of student affirmative action programs mounted in the 1970s, but also as a result of demographic changes in California's population--for example, more ethnic minorities and an older population. The result is likely to be greater diversity of needs, abilities, and goals in what is probably going to be a shrinking student population.

The Commission's 1979 Information Digest provides the data for the snapshot of public higher education which appears in Figure 1. Over a recent five-year period, California's college and university population experienced a 42 percent increase in the enrollment of women, compared with a 10 percent increase for men, and a 39 percent increase in part-time students, compared with an 8 percent increase in full-time students.

Programs to attract larger numbers of disadvantaged students, especially ethnic minorities, date back to 1964, when the University of California began its Educational Opportunity Program (EOP). The California State University and Colleges EOP and the California Community Colleges EOPS were enacted into statute in 1969.

In 1974, the Legislature approved Assembly Concurrent Resolution 151, which directed the segments to propose plans

. . . addressing and overcoming, by 1980, ethnic, economic, and sexual underrepresentation in the make-up of the student bodies of institutions of higher education as compared to the general ethnic, economic, and sexual composition of recent California high school graduates.

Two other groups of potential students whose underrepresentation in higher education has been of concern both to the segments and the Legislature during the 1970s are people with disabilities and those beyond the traditional college-going age of 18 to 24. The goals of student affirmative action for these several target groups will not be reached by 1980 and are therefore a high priority for colleges and universities in the 1980s.

FIGURE 1
SNAPSHOT OF CALIFORNIA HIGHER EDUCATION, FALL 1978*

<u>Variable</u>	<u>University of California</u>	<u>California State University & Colleges</u>	<u>California Community Colleges</u>	<u>Accredited Independent Colleges and Universities</u>	<u>Total</u>
<u>Percent of Opening Enrollment in Each Segment:</u>					
Lower Division	3.4%	7.2%	85.0%	4.4%	100.0%
Upper Division	19.9	61.7	--	18.4	100.0
All Post-baccalaureate	22.2	40.8	--	37.0	100.0
<u>Percent at Levels Within Segments:</u>					
Lower Division	33.4	28.9	100.0	29.1	74.8
Upper Division	37.7	48.9	--	24.8	14.6
Master's, Post-baccalaureate	7.3	22.2	--	28.7	7.7
Professional	11.6	--	--	12.1	2.1
Doctorate	10.0	--	--	--	0.8
Unclassified	--	--	--	(5.3)	--
Total	100.0	100.0	100.0	94.7	100.0
<u>Percent Men and Women Within Segments:</u>					
Lower Division--					
Men	50.9	47.6	46.6	51.8	46.9
Women	49.1	52.4	53.4	48.2	53.1
Upper Division--					
Men	53.3	53.2	--	53.6	53.5
Women	46.7	46.8	--	46.4	46.5
Graduate--					
Master's, Post-baccalaureate					
Men	61.0	45.2	--	65.7	54.2
Women	39.0	54.8	--	34.3	45.8
Professional					
Men	65.5	--	--	71.8	68.6
Women	34.5	--	--	28.2	31.4
Doctorate					
Men	68.4	--	--	**	68.4
Women	31.6	--	--	**	31.6
<u>Percent Fulltime:</u>					
Undergraduate	92.7	70.4	27.2	84.4	41.8
Graduate	95.0	22.2	--	48.4	48.1

FIGURE 1 (Continued)

Variable	University of California	California State University & Colleges	California Community Colleges	Accredited Independent Colleges and Universities	Total
<u>Percent at Least 30 Years Old:</u>					
<u>Lower Division--</u>					
Men	1.5%	3.7%	30.2%	--	26.9%
Women	2.2	5.5	39.6	--	35.7
<u>Upper Division--</u>					
Men	4.4	17.6	--	--	14.4
Women	8.4	21.6	--	--	18.4
<u>Graduate--</u>					
Men	37.2	46.3	--	--	42.3
Women	39.7	46.7	--	--	44.9
<u>Percent Ethnicity (Undergraduate):</u>					
<u>Black--</u>					
Men	3.0	5.1	8.7	5.3	7.5
Women	4.3	7.0	8.4	6.5	7.8
<u>Hispanic--</u>					
Men	5.4	6.9	10.3	6.6	9.1
Women	4.8	6.5	8.8	6.3	8.1
<u>Asian--</u>					
Men	10.9	6.4	4.9	6.3	5.7
Women	10.8	6.6	3.9	6.0	4.8
<u>American Indian--</u>					
Men	0.5	1.1	1.4	0.5	1.2
Women	0.5	1.1	1.3	0.4	4.2
<u>White--</u>					
Men	68.8	52.4	61.7	67.7	61.0
Women	70.9	55.3	65.7	70.3	64.7
<u>Non-Resident Alien--</u>					
Men	3.0	3.8	1.0	12.1	2.4
Women	1.4	1.5	0.4	6.2	1.0
<u>Other/No Response--</u>					
Men	8.4	24.3	12.0	11.5	13.1
Women	7.3	22.0	11.5	4.3	12.4
Total	100.0%	100.0%	100.0%	100.0%	100.0%

Data were obtained from the Commission's Information Digest 1979: Postsecondary Education in California, and from the Higher Education General Information Survey.

Included in Master's, Post-baccalaureate category.

Institutional response in the 1970s to the needs of new kinds of students was primarily that of trying to re-form them into more traditional molds by means of special programs and services, for example, EOP/S and learning assistance centers, rather than adapting to their special needs. Disadvantaged students with potential for success were admitted--often in exception to the regular requirements or as special admissions--and then tutored, counseled, remediated, and otherwise nurtured until they were ready for the educational mainstream. Higher education has met with only limited success in attracting and retaining these new students through the approach of helping them to adapt to traditional institutions.

Towards the end of the 1970s, colleges and universities began to reach out to potential students in new constituencies while they were still in junior or senior high school, in an attempt to overcome their special problems before they entered the institutions as freshmen. Several years must elapse before the success of this approach can be measured, at least in terms of increased numbers of students from new constituencies who enroll and succeed in higher education.

A major challenge to California colleges and universities in the 1980s may be to find new ways to accommodate the special, changing needs of new kinds of students in addition to helping people adapt to the system. Adaptations may be needed in policies and practice, courses and curricula, modes of instruction, types of student services, and, of course, staffing. Failure of institutions to make more adaptations to new student needs may well result in enrollments declining below present projections.

Important changes in the students' role in governance evolved during the past decade which are probably unrelated to the demographic changes which were occurring in the student population. Student participation in governance increased at both the campus and the State levels, with students now serving on the University Board of Regents, the State University Board of Trustees, and the Board of Governors of the Community Colleges. Systemwide student organizations gained new prominence, with student lobbies established in Sacramento to represent student interests in the legislative process and elsewhere in State government. A Student Advisory Committee was created by the Commission which has been effective in giving advice on important issues and recommendations being considered by the Commission. Issues relating to student rights as consumers will continue to be debated in the 1980s. Three areas in which student roles are now being discussed, in at least one segment, are collective bargaining; planning involving the allocation of resources; and faculty evaluation with respect to retention, tenure, and promotion.

Preparation for College

Most available evidence suggests that high school graduates are less well-prepared for college now than they were about ten years ago, at least with respect to the basic skills deemed necessary for successful college work. Scores obtained by students on high school proficiency tests, college admissions tests, and freshman placement examinations all support faculty opinion that large numbers of their students lack adequate preparation for college. The major evidence to the contrary is the grades awarded to students in college courses, insofar as the numbers of unsatisfactory and failing grades appear to have decreased significantly during the 1970s, as have the numbers of students dismissed for poor scholarship.

At the same time, students entering college now are probably more broadly educated than those of a generation ago, although less proficient in reading and writing skills. A considerable amount of out-of-school learning takes place through increased opportunities for travel by young people, work outside the home (or off the farm), and some television viewing. Young people tend to mature earlier now, with experiences involving the use of drugs and alcohol, sex, rejection of parental guidance and authority occurring before they leave high school, rather than in college. Many stay out for a year or more between high school and college, often to work or travel. Colleges were thus faced with a kind of paradox toward the end of the 1970s, with students who were less well-prepared with respect to the attainment of the basic skills needed for college-level work, but more ready than before for the kinds of educational experiences that college might be expected to provide.

California colleges and universities are responding in at least two ways to the problem of poor preparation in the basic skills. The first is the long-term solution of improving the quality of the teaching of English composition in the secondary schools by in-service education of teachers, primarily in the California Writing Project. The more immediate solution has been for colleges to establish courses and programs to remedy deficiencies in basic skills after students have enrolled, as an alternative to refusing admission until deficiencies have been removed. While it was once thought to be primarily a Community College function, remediation is now being given by both the University and the State University systems to large numbers of their entering students. The emphasis to date in both testing and remediation has been on writing skills, largely to the exclusion of those in reading, computation, and logic. Thus, the typical entering student with some deficiencies in basic skills takes some remedial work but enrolls in "regular" courses to fill out his or her freshman course load, while postponing the standard Freshman English Composition course until remediation is completed. Little information is available about the success (or

failure) of students needing remediation in the basic skills, either in the other freshman courses in which they were enrolled or in subsequent years in college.

A glance at the broader question of preparation for college shows that the University requires freshman applicants to have taken a specific pattern of academic courses in high school. University staff reviews and approves courses which high schools offer to meet University requirements. A recent Commission analysis of the eligibility of high school graduates for freshman admission to the University showed that fewer than one-fourth of the sample studied had completed the required pattern of subjects. The State University does not require specific preparatory courses in high school, but advises potential students to acquire appropriate preparation for the kinds of programs they plan to pursue. Because they offer very diverse programs, the Community Colleges do not prescribe the kind of preparation potential students should have and may admit high school dropouts, as well as graduates.

It is unclear at this time whether the overall level of preparation for college will improve, remain the same, or decline in the 1980s. It will surely improve among the kinds of students who now constitute the majority enrolled in California colleges and universities; they should benefit from better high school teaching of writing skills and related subjects. More students from ethnic minority groups should be able to gain regular admission to the University and State University as a result of the student affirmative action programs which are being mounted.

However, optimism about the future preparation of high school graduates for college is tempered somewhat by projections of demographic changes which show an increasing proportion of non- or limited-English-speaking people in the California population, many of whom have still other educational and economic disadvantages. Thus, the task of improving the preparation of the kinds of students who now constitute the majority is relatively simple compared with the larger challenge of helping California's minority groups obtain adequate preparation for college. Under the statute enacted into Education Code, Chapter 856 (AB 3408, Hart, 1976), high schools will begin assessing the competencies of their students and withholding diplomas from those who are unable to perform at a satisfactory level, as determined by local school boards, by the time they would graduate. Districts have been establishing their own programs to assess student competencies in accordance with guidelines provided by the State Board of Education, for implementation in 1980. Thus, the problem of improving preparation for college will be made still more complicated by (1) differing standards of competency established by the State's 378 unified school districts; (2) an unclear relationship between such standards and the levels of skills

needed for successful college work; and (3) the creation of a new type of high school nongraduate, with whom postsecondary education institutions are probably not prepared to cope.

Changes appear to be needed in the ways students may move from high school to college, particularly if preparation for college remains a serious problem for disadvantaged students, especially ethnic minorities, in the 1980s. Among the alternatives which should be considered are two which would require somewhat radical structural changes for which the educational establishment may not be ready. One involves adding a pre-college year which might be offered by a postsecondary education institution, in which extensive remediation, tutoring, and counseling would be provided for potential college students with minimum competencies for high school graduation. Little or no college credit would be awarded, but there would be greater assurance of steady progress to the baccalaureate degree once students were regularly enrolled as freshmen. A second alternative is to encourage overprepared students to leave high school for college after the tenth or eleventh grade, with the possibility of a high school diploma being awarded after successful completion of one year of college work. Some students have acquired the skills, knowledge, and maturity needed for successful college work before their senior year and have little or no interest in what is still available to them in high school. Some drop out before graduation; others get into trouble as a result of their boredom. Some restructuring of the senior high school might well make it possible to give more attention to the students who will not be ready for graduation or college without special help, by moving the most capable students on to college as soon as they are ready. The claim of former U.S. Commissioner of Education Ernest Boyer that the American high school may have become obsolete appears worthy of analysis in California, particularly with respect to the problem of student transition from high school to college.

Preparation for Careers

One of the most important changes in student goals and interests during the last decade is heightened interest in postsecondary education directly related to employment opportunities. Most Californians, including women, now work during all or most of their adult years between full-time schooling and retirement. Still, a healthy majority of recent California high school graduates are going on to college before entering the labor force. Therefore, the problems associated with responding to the increased interest of young people in preparing for employment are critical for colleges and universities in their planning for the 1980s, particularly those whose goal is to retain their students to graduation.

The number of associate and baccalaureate degrees awarded by the public segments was smaller in 1977-78 than in 1973-74 (1974-75 in the case of the University), although enrollments of both first-time freshmen and transfer students were increasing between 1970-71 and 1973-74. The decline in the number of undergraduate degrees awarded would have been still larger if the increased enrollment of undergraduate women had not occurred during the 1970s. Some of the decline in the number of undergraduate degrees awarded may be attributable to reductions in the average credit load for which students were enrolled. However, part of the decline appears to be related to lower retention of undergraduate students. More students than in the past enrolled without degree objectives, particularly in the Community Colleges where the number of students transferring to four-year institutions has also been declining. Still others may have intended to work toward degrees when they first enrolled but dropped out in order to work full time, or out of a sense of frustration over not being able to obtain employment-related programs.

Finally, the special needs of older students for postsecondary education related to their job experiences and aspirations constitute a different dimension of planning. Many entered the labor force without any formal education beyond high school, and acquired some skills and knowledge on the job which students are acquiring while enrolled in college. Their objectives may include "validating" the learning which took place on the job, broadening their outlook through general education, upgrading, retraining, or personal development (or some combination of these). Others may be college dropouts or graduates who need retraining for new careers or mid-career changes, liberally educated women who have had little or no job-related postsecondary education or experience, and graduates who have been unable to find employment in the fields for which they prepared. In planning career-related education, colleges and universities sometimes consider only the needs of recent high school graduates with no significant work experience. While their needs have high priority, those of new student constituencies who are already part of the work force are important in planning in the 1980s.

Heightened student interest in career preparation has created several dilemmas for higher education institutions as they try to respond in ways that will attract and retain students. First, less than 30 percent of the labor force needs any kind of specialized training at the postsecondary level, beyond what can be learned in on-the-job training over a period of a few weeks. The minority of the labor force needing postsecondary education includes personnel ranging from welders to physicians--that is, skilled workers, technicians, semiprofessionals, and professionals. With at least 60 percent of California's young people going to college before

entering the labor force--but only 30 percent of the labor force needing specialized training--the problem of responding to increased student interest in preparing for employment is extremely serious, both for colleges which have had a strong occupational orientation in the past and for universities which have concentrated in large part on preparing students for graduate and professional studies.

Although student choice is somewhat responsive to good labor-market information, student demand for many undergraduate programs greatly exceeds the need for new and additional trained personnel in the fields. The health professions are an example of one major area in which student interest greatly exceeds the need for additional personnel at all levels, from the technician and paraprofessional through the high level professions.

State and federal goals for affirmative action for women and ethnic minorities in both postsecondary education and employment make responding to overall student interests all the more difficult. Student interests are not necessarily congruent with governmental affirmative action goals for employment and related training. There may be a basic conflict within the Community Colleges between (1) the recent legislative request that they increase the rate of transfer on the part of women, ethnic minorities, and other disadvantaged groups; and (2) the federal government's urging that they enroll more women and minorities in one- and two-year vocational programs where they have been seriously underrepresented in the past. Affirmative action guidelines established by governmental agencies may ignore the principle of student choice among institutions and programs, while assuming that underrepresentation is always the result of some kind of bias.

Increased student interest in employment-related curricula presents two additional issues for collegiate institutions. The first is the extent to which four-year institutions should recognize less-than-degree objectives as a legitimate part of their mission. The second issue involves society's need for people educated through the associate and baccalaureate degree levels. Would a decline in numbers of students pursuing liberal arts degrees which do not lead directly to employment be harmful to future developments in the State before the end of the century? The projected decline in the numbers of college-age youth is likely to result in fewer baccalaureate degrees being awarded, unless college-going rates for young people or adults already in the labor force, or both, increase in the 1980s. When the factor of decreased interest in college and university degrees is added to the projection of fewer college-age youth, California might have a problem of an undereducated citizenry by the end of the century.

The problem of demand for career-related education exceeding manpower needs may lessen slightly during the 1980s when the number of California residents between the ages of 18 and 24 is expected to decrease below what it is today. However, interest in career education is highly related to student perceptions of need for specialized preparation for employment, and changes in numbers of young people alone will not solve the problem. New kinds of curricular responses in the liberal arts may be needed for students who want but do not need specific preparation for employment--for example, for entry-level government jobs for which some college or university education is a prerequisite. College students apparently need some feeling of security that they will not be un- or under-employed when they graduate, because of their failure to obtain preparation for appropriate jobs.

Finally, colleges and universities may need to work more closely in the 1980s with other types of providers of occupational education at the secondary and postsecondary levels, including regional occupational centers, adult schools, private postsecondary institutions, government agencies, and business and industry. In order to respond to student interests in career preparation without foregoing the values of a liberal education.

Preparation for Graduation

Although college and university students are more eager than in the past to prepare for employment, those who earn undergraduate degrees are taking longer to do so. The simplistic explanation is that students are enrolling for lighter course loads, making it impossible for them to complete baccalaureate degree requirements in four years (or associate degrees in two). The reasons for lighter student course loads are more complex and could become the subject of some control by the institutions themselves. Examples are unnecessary transfer between campuses, resulting in loss of credit, and withdrawal from courses after deadlines for adding courses, resulting in part-time enrollment status. Between 1976 and 1978, the average credit load at the undergraduate level declined in the three public segments and was, in all cases, less than the load a student would have to maintain in order to graduate "on time." This finding is somewhat surprising since the University of California has a general policy that students be enrolled full time. Through the early 1970s, undergraduate students were likely to be enrolled full time for a number of reasons. For men, the reasons related to maintaining their exemption from the draft or their eligibility for G.I. benefits. In the past, students with scholarships or other forms of student financial aid were also required to enroll full time in order to remain eligible for aid. Finally, students who depended upon their parents for most of their financial support tended to

enroll full time under the threat of having that support terminated after four years.

Much of the increase in part-time attendance since the early 1970s may be attributed to (1) the enrollment of larger numbers of older students who cannot attend full time; (2) the expiration of both the draft for military service and G.I. benefits; (3) the eligibility of part-time students for financial aid; and (4) the decreasing dependence of college students on parental support. In addition, there has been an influx of part-time students who would not have enrolled at all in the past--for example, women with family or job responsibilities which precluded full-time enrollment, and older adults without degree objectives. Increases in the enrollment of educationally disadvantaged students have also contributed to lengthening of the time taken to complete degree requirements. This new student constituency usually needs remedial programs and other special services which limit the amount of degree credit which they are able to earn during at least the freshman year.

Student expectations about the amount of time needed to earn an undergraduate degree appear to have been changing in the 1970s. In the State University, the norm is not four years, or five, but more than six years. Fewer than 10 percent of Community College students are awarded associate degrees within three years of their first enrolling, and only 6 percent are still enrolled beyond the third year. On one campus of the University, about one-third of the entering freshmen graduate at the end of four years, and somewhat more than one-half after five years. Since many students find it difficult to complete all degree requirements within four years, they enroll for less than a full load each term and spread their program over five years. Students appear to be increasingly selective about the courses they complete, the mechanism for selection being to enroll for a full credit load (or overload) and then to drop courses which do not meet their needs before whatever penalty date is established by the institution. A study of Community College students completed in 1976 showed that new students earned only 64 units of credit per 100 for which they were enrolled at the first census week. Dropouts after one term had earned less than half that amount while they were enrolled.

Transfer between campuses in the same or different segments also appears to be increasing, except between Community Colleges and four-year institutions. Increased availability of federal student aid for the cost of subsistence may be one factor in student decisions to change campuses--for example, from a campus to which the student could commute from home to one with student housing available. Reasons for transfer appear to be personal more often than programmatic--for example, dissatisfaction or boredom with the campus environment after one or two years, rather than a need to

transfer in order to enroll in a particular program. Program articulation between Community Colleges and the University and State University appears to be satisfactory in terms of students being able to progress toward a degree with a minimum amount of disruption or loss of credit. However, undergraduate students transferring between four-year campuses have fewer guarantees that courses taken on one campus will meet graduation requirements on another, whether in the same or a different segment. Counselors are becoming reluctant to advise University and State University students about transfer because of their campus' interest in retaining as many students as possible in a period of declining enrollments.

Undergraduate students in the late 1970s appear to feel that they need or want more time to complete the requirements for a degree. They take part-time course loads; explore a variety of courses, subject areas, and majors; make up deficiencies in basic skills; gain independence from home and family; earn a living while going to college; and change campuses when they become bored or dissatisfied. Some students progress without interruption in their enrollment, except to change campuses in some cases, while others stop out for one or more terms to work, travel, or rest, sometimes enrolling on a different campus when they return. The increased freedom on the part of students to meet their own needs as they see fit appears, at least on the surface, consistent with the principle of supporting student choice in postsecondary education. However, there may be increased costs to the State and the student of producing undergraduate degrees under this increased freedom which have not been considered. Colleges and universities in the 1980s may need to give greater attention to such potential time-saving mechanisms as better counseling, advising and placement of entering freshmen; increased use of student aid as a means to encourage full-time enrollment; cooperative planning of educational leaves when students want to "stop out" for a term or more; and limitations on the conditions under which intercampus transfer may be approved. In addition, improved preparation for college in the 1980s should result in some shortening of the time spent in earning an undergraduate degree.

The Special Needs of Other Students

The face of higher education in California has changed sufficiently during the 1970s that it no longer seems appropriate to characterize some students as "nontraditional." Although young, middle-class, Caucasian students are still the dominant group among undergraduates, this majority is being lessened by increasing numbers of students from ethnic minority groups, low-income families, and older age ranges. This increasing diversity of students will test postsecondary education's ability to respond to the needs of individuals--for example, by individualizing instruction and

matching teaching and learning styles. A major issue for the 1980s will be institutional adaptation to the special educational needs of diverse students--that is, the need for and desirability of postsecondary institutions to adapt to the changing needs of their students to a greater extent than in the past. A related issue concerns the continued use of Community Colleges as the institutions primarily responsible for making the adaptations, with the understanding that they would also serve as a transitional agency for students who are ineligible for University or State University admission as freshmen, but with potential for and interest in a baccalaureate degree.

The special needs of racial/ethnic minorities who are educationally disadvantaged have been documented extensively in other Commission reports. Their needs may be expected to grow in both size and diversity in the 1980s by virtue of the additional minority groups with whom postsecondary education will have to cope, and the increased numbers of minorities for whom special programs are now being mounted. Refugees from southeast Asia are one new minority group needing special programs. California appears to be attracting large numbers of foreign students with limited English language skills, many of whom are from non-Western countries. They also have special needs which must be attended to if they are to be an asset in college and university classrooms, rather than a liability.

Women, the new majority in higher education, tend to have fewer--but different--special needs than disadvantaged minorities. A case could be made for the point of view that women were neglected as a minority group in the 1970s, except for a few specially funded reentry programs for older women with special counseling and child care needs. Undergraduate women continue to have a need for role models on college and university faculties and in administrative posts, and in occupations or at levels of occupations which have been dominated by men in the past.

The scope of the discussion to this point has been limited to undergraduate students, to the exclusion of students in graduate and professional schools. Some needs are common to students at all levels; others are unique. The special needs of graduate and professional school students are probably of lesser concern to planners for the 1980s, simply because there are fewer such students. However, while undergraduate women were perhaps a questionable target group for student affirmative action in the 1970s, they continue to be seriously underrepresented in the University's graduate programs, in which the ratio of men to women was almost two to one in Fall 1978. While the enrollment of women at the graduate level in the State University exceeded that of men, women received only 40 percent of the master's degrees awarded in 1978. (In the University, women received 23 percent of the doctorates, 29 percent of the first

professional degrees, and 40 percent of the master's degrees awarded in 1978). Student affirmative action programs for ethnic minorities have not yet been implemented fully at the graduate level, although the need is acute. Some of the same issues of student interest versus labor force need are relevant at both the undergraduate and graduate levels--for example, high minority student interest in medicine and relatively low interest in some fields in which the doctorate is offered, together with few minority faculty members.

Other groups with special needs as students, most of whom the Commission has been concerned with at one time or another, are: (1) students with disabilities; (2) older, part-time students, including the aging; (3) the institutionalized--in penal institutions, mental health facilities, and convalescent homes; (4) ex-felons; and (5) the dependent children of college and university students. It is not possible in a paper of this length to address the special needs of these new minorities in postsecondary education. However, their needs should not be ignored in planning for the 1980s.

POSTSECONDARY EDUCATION'S OBLIGATIONS

An Overview

California society, in general, and students, in particular, have a variety of needs for educational programs and services to which the public colleges and universities are trying to respond, with what will surely be a decreasing amount of State funds to do an ever more difficult job. Fundamental to planning for the 1980s is a consideration of the question of State, segmental, and institutional obligations to meet the special needs of all potential student constituencies. How far must institutions go and for how long must they continue with respect to making adaptations, some of which may involve altering their standards and traditions? What kinds of changes would have to be made in college and university policies?

Practices? Requirements? Standards? Programs? Student services? Staffing? Are colleges and universities obligated to make any adaptations to the special needs of the changing student population in the 1980s, or may they rely on pre- and post-admission programs to bring about the necessary changes in potential students which will enable the students to adapt to the institutions?

The student-related areas in which policy issues are likely to be central to planning for and in the 1980s appear to be admissions, including student flow between institutions; academic standards and requirements; student services; retention and persistence; and residential education.

Admissions and Articulation

Admissions is one of the most critical areas in which the question of institutional versus student change needs to be addressed. The 1960 Master Plan for Higher Education in California gave the University and the State University strong guidance with respect to the size and nature of the applicant pools from which they were to draw their first-time freshmen. Although the recommendations were not enacted into law, the segments have adhered faithfully (and willingly) to the Master Plan guidelines that they select from the top one-eighth and one-third of all California high school graduates, respectively. The Master Plan Survey Team was, in a sense, color-blind, insofar as it did not perceive that disproportionate numbers of most ethnic minority groups would be excluded by such guidelines. No information about the ethnic composition of student populations was available at the time of the Master Plan, and there initially was no concern that very small numbers of minority students would be enrolled. Several years after implementing the Master Plan provisions for admissions, the University and State University doubled the percentage of freshmen to be admitted through special action in order to respond better to the need of disadvantaged students from ethnic minority groups for access to higher education. When the University recently adopted somewhat more restrictive criteria for freshman admission, it again increased the percentage of disadvantaged students who might be admitted by special action, in an effort to compensate for excluding some students who would have been eligible under the earlier criteria. In the meantime, both the University and the State University have mounted various outreach programs in junior and senior high schools which are designed both to improve the preparation of their incoming students and to increase the numbers of ethnic minorities eligible for regular admission.

The following are a few issues relating to admissions which appear to be pertinent to planning for the 1980s:

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1. Are the segments admitting some students who have a very low probability of academic success because of (a) deficiencies in preparation, or (b) an inflated grade-point average in high school which drops below C in college and university work? (Are any students flunking out?)
 2. Would student choice (or self-selection) be enhanced by making information available concerning differences in the characteristics of successful students enrolled in different undergraduate programs and on different campuses within each segment?
 3. Should the University and the State University experiment with the use of more subjective approaches to the measurement of

potential for academic success, particularly in the admission of students who graduated from high school several years ago? Should some weight be given to noncognitive characteristics in making admissions decisions?

4. Should admissions testing be phased out? If so, what alternatives could be developed to compensate for differences among high schools in academic standards, quality of instruction, and other factors which tend to reduce the predictability of success in college?
5. Should the 1960 Master Plan guidelines be revised to enlarge the eligibility pools of high school graduates from which first-time freshmen are admitted to the University of California and the California State University and Colleges? Are some students now being denied admission who would have a reasonable probability of success?
6. Should the University attempt to recruit a larger percentage of high school graduates who are eligible for freshman admission but are either (a) enrolling in a Community College, or (b) not going on to college at all? Should the State University do the same?
7. Should the open door to the Community Colleges be closed slightly, to divert to other types of educational institutions students who (a) are seriously deficient in basic skills, or (b) do not have degree, certificate, or transfer objectives?

The free flow of transfer students from the Community Colleges to the University and the State University was an important plank in the 1960 Master Plan, under which some 50,000 students who would have enrolled in the four-year institutions were to be diverted to Community Colleges for their lower division work. The Survey Team had concluded that the large expansion in enrollments which had been projected for the 1960s could best be accommodated in Community Colleges, and that such expansion in the four-year segments would be inconsistent with the best interests of the State. Increases in Community College enrollments exceeded the Master Plan projections, and the number of students transferring to the University increased by more than 170 percent and to the State University by more than 140 percent between 1965 and 1975. At the same time, first-time freshmen increased by only one-fourth in the University and two-thirds in the State University.

California has depended to a considerable extent upon voluntary mechanisms for achieving good articulation between the segments, within a framework of segmental policies and regulations which en-

courage transfer from Community Colleges. The Legislature intervened only when it appeared that the upper division programs could not absorb all the qualified students who wanted to transfer from Community Colleges in the late 1960s. Community College transfers include students who would have been eligible for freshman admission to the University or the State University and those who were ineligible on the basis of their high school records. The University recently adopted a policy which simplifies transfer requirements for students who would have been ineligible for freshman admission, with respect to their having to make up high school subject deficiencies.

The State University has given the Community Colleges broad authority for certifying that their students have completed lower division general education requirements, and that certain of their courses are baccalaureate-level and should qualify for transfer with degree credit. Faculty groups have expressed dissatisfaction with the results of this delegation of authority, and with some aspects of Community College student preparation. The University does not delegate such authority to the Community Colleges, but its faculty has also made known its reservations about current procedures for awarding transfer credit.

Last year the University instituted a system for reporting information to the Community Colleges about the performance of their transfer students. The initial University reports showed that both "eligible" and "ineligible" students from Community Colleges performed generally at a satisfactory level after transfer.

Some of the current issues relating to transfer and articulation between Community Colleges and the University and State University are:

1. Can the decline in the number of Community College students transferring to the University of California and the California State University and Colleges be attributed to ~~course or program articulation problems needing attention?~~ Are students less interested in baccalaureate education? Has there been a de-emphasis of the transfer function in the Community Colleges?
2. Do variations in the performance of transfer students from different Community Colleges constitute a problem which requires State-level action? Would the problem be alleviated by improved information flowing to the Community Colleges about the performance of their students after transfer?
3. Have Community College transfer students acquired the levels of reading and writing skills which are necessary for success in upper division work? If not, what kind of remediation

should be required (or should such students not be permitted to transfer)?

4. How far can or should the segments go in developing statewide articulation policies and agreements with respect to requirements, procedures, programs, and the like, to replace regional or bilateral agreements between institutions? Do differences among campuses in the University or State University system in what is acceptable for transfer now constitute a serious barrier to transfer?
5. What priority should be given to University and State University students or graduates who want to transfer into Community College programs which are impacted--for example, nursing and dental hygiene?
6. Can Community Colleges develop articulation agreements with private postsecondary institutions offering similar kinds of occupational programs, so that proprietary school students would have opportunities to work toward an associate degree with credit awarded for coursework completed prior to transfer?

Standards and Requirements

Educators and society at large are concerned about what they perceive to be a long period of declining standards in the elementary and secondary schools, as well as in colleges and universities. There is a pervasive impression that students are seriously underprepared as they move from elementary to secondary school and into college, and that the grades awarded are highly inflated. College and university faculty members express dissatisfaction with their students' writing and other skills when they enter college, as they move from the lower to upper division, and when they graduate. However, faculty dissatisfaction with student performance is often unrelated to the grades awarded. Currently, there appears to be a lower incidence of academic probation and dismissal than when students were regarded as better prepared for postsecondary education.

There has been no clear definition of the role that the Commission should play in the area of standards; beyond insuring that student flow between segments is not impeded by problems related to grading standards. Grades and credits are in a sense the currency of higher education, particularly at a time when standardized testing is in low repute. In the past, grades and grade-point averages have in large part determined whether students would be (1) placed on academic probation or dismissed; (2) accepted as a transfer student at another institution; (3) graduated; (4) admitted to graduate or professional

school, in competition with students from the same and different institutions; and (5) offered employment, also under competitive conditions.

A few of the factors associated with the phenomenon of declining standards are related to changes in grading policies during the 1970s. With good intentions, colleges and universities adopted what were characterized as nonpunitive grading policies, whose principal feature was forgiveness for unsatisfactory work resulting in grades of "D" and "F." One impetus for change was a desire to help older students--particularly veterans of military service--by reducing or eliminating penalties for earlier failures in college-level work. Another was the desire of faculties to encourage students to get breadth by taking courses outside their major fields of interest, without fear of receiving penalty grades in such courses. The result of these policies has been the reduction--or, in the case of some colleges, elimination--of grades of "D" and "F," and liberalization of the use of "W" (Withdrawal) and "NCR" (No Credit) for students who in the past would have received unsatisfactory or failing grades. At the extreme, "W's" may be substituted for failing grades on final examinations or in completed courses. Additional support was enlisted for nonpunitive approaches to grading when colleges and universities began admitting large numbers of disadvantaged students who were not prepared for college-level work. In order to avoid institutional as well as student failure, recourse was sought in nonpenalty grades. There now may be some movement away from the practices of the early 1970s, toward the reinstatement of penalty grades of "D" and "F" or limitations on the use of "W," or both.

Standards for awarding grades of "A," "B," and "C" may also have declined as another aspect of grade inflation. However, there is little documentation of this type of decline, which differs from the substitution of "W" and "NCR" for grades of "D" and "F." Finally, the problem of lowered standards may have resulted in part from students being allowed to repeat courses when they were not satisfied with the grades they received--for example, a pre-medical student wanting to raise a grade in a course in Anatomy from "C" to "B" in order to improve his chances for admission to medical school.

Some of the issues relating to standards for both preparation for college and progress in college and university work are:

1. Would students who plan to attend the State University or a Community College be better prepared if they were required to take a pattern of preparatory courses similar to that required of applicants to the University of California--that is, the A-to-F pattern--or some portion thereof?

2. Can colleges and universities expect that regularly admitted students will have reading, writing, and computing skills adequate for college-level work by the mid-1980s? Under what circumstances might institutions then insist that underprepared students obtain remediation elsewhere?
3. Should the Board of Governors of the California Community Colleges establish a floor below which remediation in reading, writing, and mathematics skills would not be offered as part of the college curriculum? Should the University and the State University also set such a floor?
4. How can the declining quality of preparation of high school students for college (as evidenced by their performance on tests, and faculty opinion that entering students are less well-prepared for college than before) be reconciled with grade inflation and an apparently low rate of failure in college and university work?
5. Have colleges and universities, particularly the Community Colleges, gone too far in adapting teaching methods and course requirements to the declining levels of student skills and abilities? Do students who cannot read and write at the college level receive passing grades in college courses? (Probably yes, in many/most courses, but why?)
6. Is there any common understanding among campuses and segments about academic probation and dismissal--their meaning, extent of their use, actions flowing from them? Is there a need for greater commonality in practice?
7. Should there be special consideration for disadvantaged students from low-income and ethnic minority groups in awarding punitive grades and imposing academic probation and dismissal?

Retention and Persistence

Issues related to retention of undergraduate students were given relatively little attention by the public segments when enrollments were increasing rapidly. One possible exception was students admitted into EOP/S programs or in exception to the regular requirements where their success was monitored during at least their freshman year. Attitudes concerning persistence to the degree appear to vary considerably among the segments, with the Community Colleges giving greatest credence to short-term student objectives which do not involve the attainment of certificates or degrees, or admission to a baccalaureate program as a transfer student. A study performed by Commission staff showed that about 15 percent of a

sample of about thirty-five thousand Community College students had earned an associate degree by, or were still enrolled at, the beginning of the fourth year after entrance. About 13 percent of the total sample, including graduates, had transferred to the University or the State University within a year or two after leaving the Community Colleges. The numbers of students awarded certificates by the Community Colleges could not be determined.

A State University study published in 1979 showed that about 30 percent of the first-time freshmen who entered in Fall 1973 had graduated by the end of their fifth year from the same or a different State University campus, and that both retention and graduation rates varied significantly among the campuses. A comparison with a sample of first-time freshmen admitted in Fall 1963 showed a slightly higher graduation rate for the earlier group--.265 for Fall 1973 freshmen and .299 for Fall 1963 freshmen--for graduation within five years from the campus where they were first enrolled as freshmen. The three-year graduation rate for Community College transfer students entering the State University in Fall 1973 was found to be 34 percent, with considerable variation among the campuses. No information is available concerning the grade-point averages earned by students who did and did not persist to graduation from the State University. There are no recent, comparable data for University students available at this time. However, graduation rates are known for one large college on one campus (Letters and Science at Berkeley) for a period of several years. Of the first-time freshmen entering in Fall 1973, 36 percent graduated within four years and 55 percent within five, with the likelihood of another 10 percent graduating by the end of the sixth year. The total percentage graduating had not changed appreciably since the Fall 1969 freshman class, although significantly lower percentages are now graduating after four or five years. Sixty-three percent of the junior-level transfer students from Community Colleges in Fall 1975 had graduated by the end of the third year, and as many as 5 percent might be expected to graduate the following year. As in the case of first-time freshmen, transfer students are taking longer to complete baccalaureate degree programs, and the percentage completing degrees has declined since 1969. University data on undergraduate grade-point averages and rates of probation and dismissal for this same college show a significant increase in grades between 1960 and the present, and an equally significant decrease in probation and dismissal rates through 1975, with small increases since then.

Selected statistics on persistence to the attainment of an undergraduate degree have been presented in lieu of generalizations and value judgments about attrition and the possible loss of talent resulting from nonpersistence. The University is highly selective in admitting freshmen and probably expects that those who are admitted should persist to the completion of the degree. The State

University, while less selective, sets its admission standards at a level where those who are admitted have good academic potential for completing a degree program. Although other student objectives are not recognized, the State University is probably more tolerant than the University of students whose interests will not lead them to complete degree requirements. Reasons for nonpersistence in the University and the State University are not well-known--for example, the incidence of attrition resulting from lack of interest or boredom, job opportunities which are more attractive than courses of study, financial problems, and simply student choice among options. Assuming that some students might return to campus after "stopping out," campuses might assist them in planning leaves of absence which will have educational value and enhance the probability of students returning to college.

A few issues which appear worthy of attention in planning for the 1980s are:

1. Is there a problem with respect to persistence and retention in the University, the State University, and the Community Colleges, in terms of students completing degree, certificate, or transfer programs? Are present retention rates too low? Are the colleges and universities losing a disproportionate number of "good" students before graduation?
2. What kinds of intervention techniques can campuses use to increase the retention of students who have a reasonable probability of succeeding in college? Should the State provide special funding for such purposes?
3. Is there unnecessary transfer between campuses within a segment, or between University and State University campuses, which increases the amount of time and course work needed to complete degree programs?

4. ~~Are institutions retaining--failing to dismiss--some students who are doing unsatisfactory work or not making progress, and whose prospects for eventual success appear to be poor?~~
5. What level of retention should colleges and universities reasonably expect to attain for part-time students who may not be pursuing a prescribed curriculum?

The Quality of the Experience

Currently, undergraduate students are more likely than before to enroll part time, not always in continuous attendance; to transfer between campuses and segments, not simply from Community Colleges to

four-year institutions; to combine work and study as equally important pursuits, often while preparing for some higher level of employment; and to drop out of college before completing undergraduate degrees. While more students than ever are housed in dormitories, a majority live in other kinds of facilities while commuting to the campus. A large number of part-time undergraduate students are now pursuing courses of study of their own design, rather than the curricula prescribed for full-time students. Since they spend little time on campus, they have minimum contacts with faculty outside the classroom. They benefit little from student activities and services for the same reasons.

The benefits such students receive may be as important as those enjoyed by students in the past who enrolled full time, in continuous attendance until they received their degree. However, a few questions need to be raised as the trend toward part-time attendance continues:

1. What kinds of integrative experiences can colleges and universities develop for part-time students nearing completion of their degree requirements, to compensate for what is often a lack of cohesion or continuity in their educational program?
2. What can colleges and universities do to strengthen student/faculty relationships for students who enroll only part time or live off campus, or both?
3. Should part-time students with financial need be encouraged to seek student aid in an amount which would enable them to enroll full time, on the grounds that the educational benefits accruing to students whose primary activity is education are greater than to those who must combine employment and education?

Student Services

Student services may include peer and professional counseling, health care, student activities, tutoring, child care, and other programs designed to help students succeed in their studies and to enhance the quality of their educational experience. State policy related to the funding of student services varies among the segments and among student groups within segments--for example, EOP/S students and students with disabilities. The educational values of services for students in general have been described at length, but seldom have been documented in a convincing fashion, in terms of the impact of increased or decreased funding for particular services. As State funds to support postsecondary education become more limited,

the issue of student need for student services funded from whatever source, apart from those which are directly related to instruction, increases in importance. In any event, student services which were institutionalized before the 1970s appear to be threatened by both changes in the characteristics of students now undertaking post-secondary education, and fiscal constraints on the colleges and universities.

A few questions which need to be addressed in planning for the 1980s are:

1. What pre-enrollment services should be provided by colleges and universities, either individually or in consortium arrangements (for example, the community advisement centers funded under Title I)? What types of services should be offered: Educational information, advisement, and counseling? Career information and advisement? Assessment of skills, interests, abilities, and knowledge? Evaluation of transcripts? Financial aid information and counseling? Others?
 2. Should the support services which have enhanced the success of EOP/S students be extended to all students needing them? Should the State appropriate funds for such services? Should they be funded wholly or in part from student fees? User fees?
 3. What should the scope be of on-campus counseling services which are not supported by user fees: Educational/academic? Financial aid? Career? Personal? Marriage and family? Drug and alcohol?
 4. Are there systemwide problems (or on certain campuses) with the perceived quality, relevance, availability, or other aspects of counseling offered students?
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5. What would the impact be of substantial increases or decreases in educational, career, and other types of counseling services available to students, in terms of persistence, performance in courses, changes in major, and course completions?
 6. Which student services should be curtailed, or even eliminated, if revenues from student fees were to be diverted from the support of student services to instruction, under conditions of sharply reduced State support?

Prospects for Students

The main business of California's colleges and universities is the education of students--now, in the past, and in the 1980s and beyond. Changes in student needs, interests, skills and abilities, goals and objectives, and other characteristics appear to be occurring more rapidly than changes in the institutions they are attending. Schools must make even more strenuous efforts to prepare those who are doubly disadvantaged by virtue of economic condition and ethnicity, while attempting to insure better preparation for college on the part of the young people who have long been the majority group in higher education.

The major response of colleges and universities to date has been to develop programs and services to help the increasingly more diverse student constituencies adapt to a less than dynamic educational environment. Colleges and universities need students more than ever before--to maintain their programs, faculties, facilities, and, of course, their income. The changing needs, goals, and values of students need to be given increased attention in planning for the 1980s.

FACULTY ISSUES FOR THE 1980s

INTRODUCTION

Because they perform the major tasks that constitute a college or university education, faculty are of central importance to the educational enterprise. They teach, advise, and counsel the students for whom the institutions exist; they conduct the research which forms the basis of the generation's new knowledge; they develop new programs and opportunities for learning; and they share in the governance of the institutions in which they perform these functions. In addition, faculty salaries constitute a major portion of the academic budget of most institutions, and they represent a major financial commitment on the part of the institution.

The faculty profession as a whole reaped substantial benefits from the "golden growth" era in higher education, a period which began with the expansion of enrollments in the late 1950s and continued well into the 1960s. In her book, Old Expectations, New Realities: The Academic Profession Revisited, ^{1/} Carol Herrnstadt Shulman cites four major faculty gains of that period:

First, a faculty career acquired status equivalent to other professions. Second, demand for qualified faculty was high. In this sellers' market, academics were virtually guaranteed job mobility within or among institutions. Such mobility gave them the opportunity to develop a satisfying career. Third, college faculty won, formally or informally, central roles in academic decision making on many campuses. And fourth, seemingly unlimited financial resources available during this period helped to promote and consolidate the preceding achievements.

~~Also during that period, faculty salaries began to rise, to the extent that real gains in purchasing power were made relative to the cost of living. Perhaps the most important gain, however, was the increase in faculty power in most institutions: "In major universities, the faculties came to exercise effective control of the education and certification of entrants to the profession; the selection, retention, and promotion of their members; the content of the curriculum; and work schedules and evaluation of faculty performance." ^{2/}~~

That the golden growth era in higher education is over scarcely needs reiteration. Indeed, "reduction, reallocation, and retrenchment" may, as Mortimer and Tierney say, constitute the "three R's of the eighties." ^{3/} Such factors as the national decline in the number of 18-24-year olds, the rise of inflationary pressures (with

institutional costs likely to continue to rise faster than resources), and the dramatic shifts in student program preferences, will continue to influence the environment for postsecondary education throughout the 1980s. Faculty salaries are no longer keeping pace with the rise in the cost of living; the "buyers' market" has forced faculty to compete in an ever-tightening job market, reducing the prospects for job mobility and rapid career advancement; and finally, the pressures of fiscal stringency and stable or declining enrollments will result in fewer openings for new faculty, and in increased concern about the percentage of faculty who are "tenured-in."

Faculty morale reflects these depressing factors. Ladd and Lipset, in a series of articles on faculty opinions in The Chronicle of Higher Education, 4/ report that pessimism is the predominant faculty mood. Professors believe that their own economic status is eroding compared to other professions; that "too many people ill-suited to academic life are now enrolling in colleges and universities;" that there has been a "widespread lowering of standards in American higher education;" that students are "seriously underprepared" in the basic skills of written and oral communication; and finally, that higher education is falling in public favor. 5/

Contrary to the gains made in faculty power during the growth period, faculty authority may suffer erosion as fiscal stringency places budgetary control increasingly in the hands of governing boards and administrators; as the necessity for budgetary trade-offs pushes decision making up to ever higher organizational levels; and as legislators and the general public demand greater efficiency and accountability from both faculty and the institutions of which they are a part. 6/ Besides the increasing resumption by administrators of authority previously delegated to the faculty, various external forces are gaining ever larger roles in the governance of educational institutions. These forces include state legislatures; executive agencies of state government (such as departments of finance); the federal government and its various agencies; the courts, both state and federal; statewide coordinating boards; student lobbies; and the public itself. Finally, higher education to some extent has lost its "favored status" in the eyes of the public, and is being forced to compete with other priorities for its share of state and federal budgets.

The relative weakness of traditional mechanisms of participatory governance such as faculty senates in dealing with fiscal crises and increased external intervention in academic institutions, has led many faculties to adopt collective bargaining as a countervailing force, a force which, while it increases the adversary nature of the relationship between the faculty, the administration, and often, the

students, may also enable faculty to recapture some of their previously held power. 7/

The decade of the eighties thus will place new pressures on college and university faculties. Pressures for increased efficiency and accountability will raise questions about the adequacy of present faculty governance mechanisms and about review, selection, and promotion processes. Pressures for increased institutional flexibility, for affirmative action, and for openings for new, young faculty, may bring into question even the long-held commitment to the tenure system as a necessary part of the academic profession. Finally, pressures on the faculty to adapt to the needs of different types of students in higher education will continue to increase, in the face of declining resources with which to retrain and develop faculty to meet these new demands.

During the eighties, institutions must find answers to new questions of particular concern to college and university faculties. Will new governance mechanisms, such as collective bargaining, threaten the concepts of collegiality and shared governance? Will faculty salaries continue to decline in relation to the cost of living? Given stable or declining enrollments, and their effects on the number of new positions available, how can "new blood" be added to faculties, and how can affirmative action goals be achieved? How can the needs of new types of students be met if new faculty and programs are needed but there is little or no turnover of personnel? Given the problems of selective reallocation of resources, what is likely to happen to tenure and promotion policies, faculty development, and early retirement?

While the specific pressures and related questions cited above may be of concern to all faculty, the effects of these pressures may be felt differently by faculty depending upon the type of institution in which they work. In California, the 1960 Master Plan for Higher Education establishes a specific differentiation of functions among the three segments of California public higher education. The University of California is recognized as the State's chief agency for research, and is the only segment allowed to grant doctoral degrees. Thus, University faculty have a commitment to research as a major part of their role, with teaching being of somewhat lesser importance, particularly with regard to promotion and tenure. The State University and Colleges system is charged to provide students with general collegiate education through the master's degree level, with particular emphasis upon training its students for teaching, both in the K-12 system and in postsecondary education. The State University faculty, as compared to the University faculty, generally spend a larger portion of their time in teaching, rather than in research. Finally, the California Community Colleges, are designed as the major "open door" segment of California higher education. The

Community Colleges have a variety of missions, including the provision of the first two years of collegiate education to those students who desire to transfer to four-year institutions; the provision of vocational, technical, or occupational courses of study, many of which can be completed in one or two years' time; the provision of remedial, developmental, or basic skills courses or programs to those students needing such assistance; and the provision of services to a variety of interest groups under the general heading of "community service." Faculty in the California Community Colleges thus may play a variety of roles, depending upon those portions of the college's mission in which they are involved, although their roles are primarily instructional.

Their differing roles are not the only distinction among the faculty in the three public segments; the extent to which the faculty share in the governance of their institutions differs markedly. The University of California has a history of strong faculty governance dating from the 1920s. The governance structure is a loose federation of quasi-autonomous faculty senates on the nine University campuses, with a system-wide representative assembly or senate. In contrast, the State University and Colleges system, "gathered together from a clutch of semi-autonomous colleges, had no tradition of collective action nor much of faculty governance," and the authority of its systemwide academic senate is less extensive than that of the University's. ^{8/} The California Community Colleges, which began establishing academic senates only in recent years, are governed by autonomous boards in the seventy separate districts, with the power of faculty to share in governance varying from district to district.

Clearly, given such differences in the missions of the three public segments, in the roles of the faculty, and in the relative power of the faculty to share in the governance of their institutions, many of the issues to be discussed in the pages which follow may have differing effects on faculty, depending upon their institutional affiliation. While the treatment of the issues will be general in nature, a number of the specific differential effects for the public segments will be noted and discussed.

The sections of this faculty paper address these issues under four major headings: (1) collective bargaining; (2) faculty affirmative action; (3) part-time faculty; and (4) faculty mobility, development, and retirement. Wherever possible, studies specific to faculty in California institutions are cited, while national studies and data are used to supplement the analysis of the various issues.

COLLECTIVE BARGAINING

Perhaps the most important factor in the changing picture of faculty is the introduction of collective bargaining in all three segments of public higher education. The ability of the faculty to organize and bargain collectively has introduced a new current of unknown strength and depth into planning considerations for the years ahead. In addition, collective bargaining may well affect virtually every area of faculty life: salaries, affirmative action, part-time employment, tenure and mobility, development, and retirement.

Two separate pieces of legislation established collective bargaining in California's public segments. Senate Bill 190 (Rodda), known as the Public Education Employer-Employee Relations Act, was enacted in 1975, and permitted Community College faculty to engage in collective bargaining. Four years later, Assembly Bill 1091 (Berman), known as the Higher Education Employer-Employee Relations Act, extended collective bargaining to University and State University faculties. That the extent of unionization in the segments varies might be expected, given both the separate legislation and the differing time the segments have spent under collective bargaining statutes. Currently, fifty-two of the seventy Community College districts have chosen exclusive collective bargaining representatives. Because the Berman Act became law only in July of this year, the University and State University campuses are not as far along in their organizing efforts, although both segments are preparing for the possibility of collective bargaining.

Collective bargaining for faculty members entails some significant departures from the models of unionization found in industry, which has not enjoyed the tradition of collegiality and shared governance found on many campuses. Partly for this reason, the experts are not in agreement about its implications and consequences. George W. Angell, Director of the Academic Collective Bargaining Information Service, has argued that bargaining will have a minimal effect on the authority of university administrators to make decisions; he seems almost optimistic about the preservation of faculty rights and privileges. ^{9/} Barry N. Steiner, of the New Jersey State Office of Employee Relations, is not as sanguine about the future of collegial governance. He speaks of external pressures resulting from public funding and notes that, in the case of academic collective bargaining,

. . .the model for resolution changes from collegiality, which in theory is non-adversarial and allows for a broad spectrum of views to be openly debated, to the bargaining model which is essentially adversarial and which requires each side to speak through a spokesperson, defending and seeking to achieve agreement as to each side's ultimate position. 10/

It is likely that these two viewpoints mark the outer boundaries of collective bargaining in academe, although, as will be shown later, the weight of circumstances and precedent seem to favor Steiner's opinion. For the present, it should be noted that this uncertainty is compounded by the fact that, if bargaining does occur in all of California's three public segments--and even this is by no means clear at the present--the processes, issues, and perhaps even the intensities involved may vary considerably among the segments. In some measure, this variability will stem from the legislation itself. The Berman Act may be unique in collective bargaining legislation in that it is explicitly intended to preserve the authority and autonomy of the faculty senates of the two senior segments in the areas of curricula, courses, admission and graduation requirements, faculty personnel actions, and other matters pertaining to educational policy. The rationale here was to ensure the traditional power of the senate against potential control by either the administration or the union. This legislative attempt to preserve collegiality anticipated the problem of the senates being reduced to the status of "social clubs" 11/ because of faculty unionization. Additionally, the Berman Act requires that the faculties of both of the four-year segments bargain as single units with their respective governing boards and confer with the Department of Finance and the Legislature on matters which have fiscal ramifications. In contrast, the Rodda Act, which pertains to the Community Colleges, vests a great deal more authority for academic and personnel matters in the hands of the "public school employer," which is the governing board of the local Community College district. Wages, hours and other terms and conditions of employment are also to be negotiated with the "employer." Thus, authority is much more centralized and a great many more issues can be expected to be brought to negotiation in the Community Colleges.

While the specific outcomes of collective bargaining legislation may be difficult to predict at this point, one thing does seem clear: planners must prepare for the possibility that bargaining may grow and perhaps even thrive on California campuses in the years ahead. The social, economic, and political forces that are contributing to this tendency are well enough known that they do not need to be detailed here. It should be sufficient to note that the Ph.D. surplus, the projected downturn in enrollments, the relative decline in faculty salaries, Proposition 13, and recent changes in public priorities have all converged to contribute to a climate conducive to faculty unionization. 12/

To the extent that faculties choose to organize, certainly the most significant topics to be negotiated will include salaries, fringe benefits, workload, and other terms and conditions of employment, as specified in the legislation. Compensation, of course, will be of prime interest to faculties; however, owing to the relative recency

of collective bargaining in higher education (fewer than fifteen faculties in the nation were organized prior to 1969), the effect of unionization on salaries is not clear at the present time. Some surveys have been conducted which generally reveal a salary gain for organized faculties, 13/ while other studies show no significant increase. 14/ Some of these researchers hold the view that, after an initial salary advantage for collective bargaining, the initial gains may be declining. What can be concluded at this stage from the research on unionization and faculty compensation? The weight of the conflicting evidence seems to favor collective bargaining slightly. However, unionization is still too recent a phenomenon in postsecondary education and the commendable research efforts to determine a clear pattern have not been successful. One other possibility, borne out by the findings thus far, is that there will be no clear evidence favoring salary gains for unionized faculty. This conclusion, of course, may be damaging to the cause of collective bargaining, since an increase in wages is held to be a major incentive for faculty organizing.

A second important condition of employment that may arise out of faculty collective bargaining pertains to job security. Van Alstyne 15/ suggests two alternative prospects that might derive from faculty negotiation of job security. One possibility is that it could be traded off for more short-term gains, such as salary increases. A second possibility is that job security might be extended beyond the traditional definition of academic tenure to include "probationary" faculty. Because tenure is, in the eyes of most faculty, the foundation of a free and productive professoriate, it is unlikely that it would be conceded or diluted in any fashion as a result of negotiation. Much more plausible is that efforts will be made on many campuses to extend job security even to nontenured faculty through the use of reduced probationary periods. In Van Alstyne's words:

As collective bargaining becomes prevalent, and as the views of junior faculty members come to weigh heavily in the negotiating process, a condition of instant tenure may be demanded. That is to say, the job security provision could apply even in the first or second year of appointment, so that the termination decision could not be made without a fairly elaborate demonstration of reasonable cause. 16/

Any extension of job security of the kind described by Van Alstyne may ultimately point to the retention of a greater number of mediocre faculty members. Again, experience is too limited at this stage to do more than signal a potential problem in this area.

Perhaps the most challenging and problematic set of issues in faculty unionization concerns the scope of bargaining and the related implications for campus governance. It is here that collegiality and collective negotiation may find themselves in a crosscurrent of interests. Historically, administrations have delegated many of their functions to committees of faculty, or committees composed of faculty, administrators, and other members of the campus community. To this extent, it can be argued that the faculty has fulfilled a management role. This issue has been considered by the Supreme Court in the case of Yeshiva University, where it ruled that Yeshiva faculty are a part of management and that "they are, in effect, substantially and pervasively operating the enterprise." 17/ In the case of California's four-year segments, however, the Berman Act anticipates this question of what constitutes management:

"Managerial employee" means any employee having significant responsibilities for formulating or administering policies and programs. No employee or groups of employees shall be deemed to be managerial employees solely because the employee or group of employees participate in decisions with respect to courses, curriculum, personnel and other matters of educational policy. A department chair or head of a similar academic unit or program who performs the foregoing duties primarily on behalf of the members of the academic unit or program shall not be deemed a managerial employee solely because of such duties. 18/

The collegiality/management issue is less clearly prescribed in the Community College legislation, but the authority rests essentially where it always has; in the hands of the administration. 19/ Regardless of the Supreme Court's decision in the Yeshiva case, the ruling will have no direct bearing on public institutions, where the right to bargain is determined by statute. The case does illustrate, though, one of the central problems in the scope of bargaining issue, and it is possible that there will be some indirect implications for the Community Colleges, even if these implications only amount to a clarification of what constitutes "management."

In typical collective bargaining situations, administrators are constrained to deal exclusively with representatives of the bargaining agents on matters pertaining to terms and conditions of employment. Unions may consent to allow some matters involving faculty considerations to be resolved through traditional collegial mechanisms, but it is not probable that the unions will ever yield any substantive degree of power to the collegial mode of governance. It is likely that governance in the California Community Colleges will operate in a fashion similar to the foregoing. Local administrations will attempt to conserve their traditional

authority; faculties, since they were granted relatively little autonomy by the legislation, and will use collective bargaining to achieve their gains. For the University and State University, however, the Berman Act makes the governance situation significantly different. It obviates many of the control problems pertaining to matters of educational policy by legislating them into the domain of the academic senates. 20/ The legislation confirms a long history of faculty senate authority in the University as delegated by the Regents, and it clarifies and ensures a measure of authority for the State University faculty senate which had not been explicit before. In sum, a general forecast for the faculty role in governance and collegiality, under collective bargaining, seems to be as follows: the University's faculty senate will essentially retain its traditional authority; the State University's faculty senate will gain some strength; and the faculties of the Community Colleges may or may not gain authority, depending on their effectiveness in negotiating with local district administrators.

Even though the Berman Act defines the scope of negotiation in some areas for the University and State University faculties (and thus limits the power of the unions), other specific matters will remain to be bargained in these segments, and most likely an attempt will be made to negotiate a wider range of issues in the Community Colleges. Precisely what will be negotiated will depend on which issues are mandatory (must be negotiated) and which are permissive (may be negotiated at the discretion of management). Certain matters are held legally to be a management right, typically those concerning the administration's obligation to manage the institution. Those which are subject to negotiation only when management chooses to do so are permissive matters. On the other hand, it is mandatory that those matters which involve terms and conditions of employment (salaries, workload, schedules, grievances, etc.) be negotiated, because they are seen as impossible to separate from the quality of individual teaching performance. The difficulty with the mandatory/permissive distinction lies in determining the boundary between these two nebulous domains and interpreting the bargaining statutes in respect to what can be negotiated by faculty unions. In general, it seems plausible that administrations will attempt to retain broad prerogatives, beyond those matters defined in the legislation as negotiable, in the area of governance. It is also possible that the scope of negotiation concerning many specific, substantive matters ultimately will be determined on a case-by-case basis. Some of these matters--for example, the academic calendar, the qualifications and responsibilities of administrators, and work location--already have been brought before state labor relations boards and rules to be permissive issues. The impact 21/ of policy decision on these matters as they influence terms and conditions of employment, however, is negotiable. 22/

Given that a number of issues may be brought to the bargaining table, it would appear that some degree of an adversary relationship will be fostered (or accelerated, as the case may be) between the administrations and the faculties in all of the segments. The intensity of this relation no doubt will vary as a function of specific bargaining climates and personal styles in any given case, and this will be quite difficult to predict with any accuracy. If the extent of the adversary relationship also is influenced by the amount of bargaining that will occur, then the most evident adversary situation should be found in Community College bargaining, for the simple reason that, as is clear from the legislation, the faculties there appear to have the most to gain from collective bargaining negotiations. Academic councils and other traditional faculty bodies will most likely be supplanted by the unions as the main voice of the faculty in matters of campus governance. ^{23/} This line of conjecture should not suggest that harmony will necessarily prevail in the University and State University. The administrations of both of these segments have requested sizable budget augmentations (approximately \$700,000 each for 1980-81) to prepare for the various bargaining activities they foresee in the near future.

The current experience and the general findings on scope of bargaining, as well as on governance, simply are not clear enough to warrant specific conclusions for California postsecondary education. A vast array of situational and contextual variables interact with collective bargaining and its effects on campus governance. In her study of governance at unionized four-year colleges, Lee found that "faculty as a whole gained formal governance power through the union contract" ^{24/} which, she observed, confirms the general results of other studies. She noted, however, that "it was often difficult to separate the effects of unionization from the effects of other contextual factors". ^{25/} She found that such things as a faculty's pre-unionization autonomy and the administration's attitudes toward the faculty's role in governance were significant ingredients in determining governance processes after unionization. She also observed that, on campuses where faculty senates were relatively powerful before collective bargaining, they tended to retain that power after unionization. ^{26/} To the extent that this pattern holds true for California's three public segments (and it appears that it will), unions will gain the most strength where the faculties have historically had the least power--in this case, the Community Colleges. As noted earlier, the Berman Act explicitly preserves the key aspects of traditional senate governance for the University's campuses, and clarifies as well as strengthens them for the State University's campuses. Thus, if unionization occurs, the various components of the campuses in all three segments will maneuver to gain new powers or preserve old ones. The accretion or erosion of faculty authority will result from negotiation in that ambiguous area, referred to as "scope," which lies between the mandatory and

permissive issues of bargaining. Both the segmental administrations and the Commission will need to monitor developments as they occur, in order to anticipate problems and respond to changes in governance that may be on the horizon.

Related to the scope of bargaining question is another, perhaps inherent, outcome of negotiation that should be considered. Birnbaum, in his study of unionization and faculty compensation, is concerned about what might be categorized as an ultimate issue of educational quality. ^{27/} He speculates that bargaining agents need to demonstrate their value to their constituents by gaining various concessions, while administrations are obviously under pressure to grant something at the bargaining table. He posits a tendency for administrators to favor concessions on salary increases rather than concessions on items such as increased governance, further codification of faculty prerogatives, lower student faculty ratios, or reduced class size, many of which have direct implications for educational quality. Birnbaum cites the case of St. John's University, where this situation has occurred. However, it does seem somewhat cynical to propose that such things as academic quality and collegiality will be exchanged for salaries and fringe benefits; to speculate along the lines that Birnbaum does may demean the professionalism and integrity of the parties involved. Indeed, it is possible that unions, faculty senates, and administrations may work in consort to resist any incremental decline in the integrity of the educational enterprise which might occur through the expediency of resolving a set of issues at the bargaining table. Nevertheless, a discussion of issues which may arise out of collective bargaining requires an identification of potential problem areas, and this is certainly one of them.

Beyond the direct impact on terms and conditions of employment that collective bargaining has for faculty, some additional likely outcomes of unionization should be noted briefly for other campus constituencies. Ladd and Lipset, in their Carnegie Commission study of unionism, describe probable changes in the role of administrators:

It is clear that the adversary relationship inherent in the very conception of collective bargaining does change the role and image of university administrators. Ideally, they have been viewed as the colleagues and representatives of the faculty in coping with off-campus power--the alumni, public opinion, the press, the legislature, the trustees. They are expected to be a buffer. In intramural matters, good administrators often operate informally; a good dean rarely inquires as to what given individuals are doing with respect to teaching load, sick leave, and the like.

Under collective bargaining, administrators, often down to the level of department chairmen, become responsible for a legally binding contract. The institution will be held legally responsible for their actions. They become, as the unions insist, representatives of management who seek to protect management's prerogatives and rights under the contract. 28/

Although the Berman Act excludes department chairs, the point still stands, and Ladd and Lipset further note that, under collective bargaining, administrators become "agents of the employers' side of the negotiations" 29/ and are hindered in their role as advocates for faculty salaries and benefits.

It is difficult to predict how students will respond to the climate fostered by collective bargaining. In the late 1960s and early 1970s, they might have sided with labor. In this new era, the Carnegie Commission study foresees possible new tensions between students and faculty brought on by unionization. The Carnegie study cites recent instances where adversary relationships have developed, mostly in respect to student desires to have a voice in matters such as teaching and the curriculum. 30/ To the extent that unions try to limit student participation in campus governance and educational policy, they no doubt can be assured of resistance and perhaps conflict in this quarter.

Even at this early stage of faculty organizing, it seems safe to predict that the roles of the segmental governing boards will change, though probably in different ways. One area where change may be expected for the Regents and the Trustees pertains to faculty salaries and other fiscal matters. The Berman Act mandates that the bargaining agents "shall maintain close liaison with the Department of Finance and the Legislature relative to the meeting and conferring on provisions of the written memoranda which have fiscal ramifications." 31/ This explicit authorization to bypass the Regents and Trustees seems likely to dilute their authority and, in some circumstances, may change their role as final, official advocates for faculty salaries and other financial matters. In contrast, Community College faculties historically have dealt directly with their funding source, the local boards of trustees. There does not appear to be any role change in prospect here, although the processes may be altered rather drastically. It can be expected that unions may take a more active political role in the election of local, pro-union trustees. Indeed, this has already occurred in at least one Community College district in the State. There is also discussion in some areas about a statewide salary schedule for all Community College faculty. At this point, however, the prospect for such a system seems remote. Whether there may be other areas of change within the public segments in governing board

authority remains to be seen; specific details will perforce await experience.

Finally, with the advent of collective bargaining, it is possible that campus climates will be influenced by these forces of change. Whether the collegiate atmosphere is seen as changing for better or worse will, undoubtedly, be colored by the perspectives of those involved. While quantitative factors such as student/faculty ratios, contact hours, class sizes, grade point averages, course loads, and costs of instruction lend themselves persuasively to neat arrays in charts and tables, other more important factors of quality including academic integrity, collegiality, faculty initiative, student motivation and intellectual climate, are not so easy to assess. Whatever specific trends and outcomes may result from unionization, planners must not lose sight of the more elusive qualitative factors as they attempt to identify and cope with the goals and purposes of education in a future filled with the uncertainties of collective bargaining.

FACULTY AFFIRMATIVE ACTION IN CALIFORNIA HIGHER EDUCATION

In the past few years, considerable national attention has been focused on the successes--and failures--of affirmative action policies and programs for college and university faculty. Numerous observers ^{32/} have analyzed the regulations and actual employment practices, as revealed by the increasing volume of sex and ethnicity data. Their findings lead to one general, and depressing, conclusion: while some gains have been made, the picture for minorities, and especially for women, has not changed all that greatly, despite government regulations, affirmative action programs, and egalitarian rhetoric.

In California too, attention has been focused on affirmative action efforts in higher education, particularly on those efforts and their results in the three public segments. In order that an orderly accounting might be made to the Legislature of the sex and ethnicity of faculty and staff in the public segments, Assembly Bill 105 was enacted (now Education Code Chapter 399, Section 66903). This Code section directs the Commission to report to the Legislature and Governor on the employment, classification, and compensation of ethnic minorities and women in the three public segments. The report is based on data from the Higher Education Staff Information Survey (EEO-6), conducted biennially by the Postsecondary Education Commission on behalf of the federal Equal Employment Opportunity Commission. The statute names Fall 1977 as the base year for data collection, with subsequent biennial updates. While the first report is not due until mid-1980, the Postsecondary Education Commission has published a preliminary report, based on the first

year's data. This information also appears in the Commission's 1979 Information Digest. The data in all cases are for full-time faculty only.

Tenure Status and Rank by Sex and Ethnicity

The statewide picture shows that in Fall 1977, over three-quarters of the 42,222 faculty in public higher education were males (75.4%). Of the 28,187 tenured faculty, 78.2 percent were male, 21.8 percent female. Nearly 80 percent of all 31,828 male faculty were tenured (69.3%), compared to 59.1 percent of the 10,394 female faculty. Ten percent of the tenured faculty were ethnic minorities, with the greatest percentage being Asian (35.3%).

While the AB 105 report does not request information on California's independent institutions, sex and ethnicity data for that segment are collected on the EEO-6 form. This information indicates that in Fall 1977, nearly 80 percent of the 4,608 faculty in independent institutions were males. Ethnic minorities (345) accounted for 7.5 percent of the faculty, with Asians representing 40.0 percent of ethnic minorities. Over half of the male faculty held tenure status (54.6%) compared to one-third of the female faculty (32.7%). Of the 2,308 tenured faculty, males held 86.6 percent of the positions, while women held 13.4 percent. One-third (34.2%) of the ethnic minority faculty also were tenured, and these 118 faculty accounted for 5.1 percent of all tenured faculty. Over half of the tenured ethnic minority faculty were Asian (54.2%).

Comparing the data for public and independent institutions, it is evident that women and ethnic minorities are somewhat better represented in the faculty ranks in the public sector. However, this is accounted for largely by the relatively higher percentages of women (32.7%) and ethnic minorities (12.5%) on Community College faculties. The University, with 17.8 percent women and 11.6 percent ethnic minorities as faculty, and the State University, with 20.8 percent women and 11.4 percent ethnic minorities, show considerably smaller proportions of women and ethnic minorities as faculty.

Within the ranks of "tenured," "non-tenured but on-track for tenure," and "other" faculty, there are distinct differences in the proportions of women and ethnic minorities. At the University, 6.7 percent of the tenured faculty are female; 7.8 percent are ethnic minorities. In the non-tenured but on-track category, the figures are better: 22.4 percent women; 14.7 percent minorities. The "other" category is composed of faculty who have limited-term contracts (both teaching and research), and who are neither tenured nor in a position which would be considered for tenure. Fifty percent of the entire University faculty is in this classification.

Of the three categories--tenured, on-track, and other--the 6,674 member "other" group contained the greatest percentage of women (25.4%). Of all ethnic minority faculty within the University, 59.6 percent were employed in the "other" category. Again, faculty in this category cannot be considered for tenure.

At the State University, 17.2 percent women and 9.2 percent ethnic minorities are in the tenured category. The non-tenured but on-track category includes 29.8 percent women and 18.2 percent ethnic minorities. The "other" faculty group contains 33.2 percent women and 17.5 percent minorities. At the Community Colleges, 30.2 percent women and 11.4 percent ethnic minorities are in the tenured category. Women and minorities comprise 49.3 percent and 20.9 percent, respectively, of the non-tenured but on-track category; and 38.7 percent and 15.2 percent, respectively, of the "other" faculty category.

Compensation

Another indicator of the status of women and ethnic minorities in the academic profession is the relative compensation levels of women and ethnic minorities as compared to white males. The federal EEO-6 form, the basis for the AB 105 report, includes information on compensation by sex and ethnicity--but only in aggregated salary ranges. In addition, separate information is generated for faculty paid on an eleven-month contract and for faculty paid on a nine-month contract. Since most faculty statewide are paid on a nine-month contract basis, the majority show up in the "Faculty, nine-month" category. Of those on nine-month contracts, both male and female faculty statewide are clustered in the \$19,000-\$24,999 range. Of all men, 42.6 percent (10,444 out of 23,815) are in this range. The ethnic breakdown is as follows: of black males, 41.9 percent are in this range; of Hispanic males, 40.2 percent; of Asian males, 45.5 percent; and of American Indian males, 42.6 percent. Of all women in the nine-month faculty category, 42.0 percent (3,385 out of 8,064) are in the \$19,000-\$24,999 range. Of white women, 42.6 percent are in this range; of Black women, 40.9 percent; of Hispanic women, 35.0 percent; of Asian women, 36.9 percent; and of American Indian women, 45.9 percent. While the percentages appear quite similar, it is important to remember the extremely small numbers of ethnic minority females in the total nine-month faculty category statewide: 457 Black; 365 Hispanic; 314 Asian; and 37 American Indian.

A somewhat different set of data on faculty compensation is collected in the Higher Education General Information Survey (HEGIS) and reported annually in the Commission's Information Digest. (These data are also for full-time faculty only.) The 1979 Information Digest provides this information as "mean salaries," and has such

CHAPTER V

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The role of visuals as a learning aid is undeniable; studies over the past few years have conclusively established that. What is still interesting researchers is the way visual material is absorbed, the ways in which visuals should be used, and how they should be designed, developed and presented, and research already shows that their usefulness notwithstanding, they should be used intelligently with a realistic appraisal of their uses. Clearly they are not endlessly applicable, nor is one type of visual useful in all circumstances.

The variables are many. The subject matter influences the kinds of visuals used: geography, for example, is likely to use a large number of maps and graphs. Similarly the behavioural objective will have an effect: whether it is factual or visual information which needs to be understood, explained or rehearsed, and what needs to be recalled from the experience - concepts or facts.

The students themselves influence not only what is likely to be recalled but what form the visuals should take. Children, for example, learn differently from adults

who, because of their greater experience and knowledge, learn concepts with the pictures. Mental ability has been examined in its bearings on learning from visuals, and it appears that high IQs learn readily from either the visual or verbal approach. Lower IQs achieve better from visual aids than they do from verbally emphasized work as long as those aids are keyed to the level of the students. Indeed, visuals, in these circumstances, can act as excellent motivational devices.

Motivation is another variable in the effectiveness of visual education, as it is in most educational circles. Students learn any content matter much better when they are interested in what is before them. For this, visuals can be both a cause and an effect. Visual materials play an important role in raising motivation and interest, and the information they contain is better transmitted when motivation and interest are high. This situation is achieved, too, when the visuals are part of a programme which is seen by the students to be valid and attuned to their needs, a factor especially true of adults, and when the visuals are well incorporated with the material being taught.

Cultural factors may affect what students interpret as important and what they see as worthwhile learning techniques. In addition, such factors will influence what they absorb from a visual. Objects and concepts which are not in their own culture or which that culture underemphasizes may be

misinterpreted, or, indeed, not noticed at all in visual materials. Visuals can be very effective in this context in realigning cultural acceptance patterns.

The way in which the illustrations are presented is yet another variable. Are they to be in a programme paced by the teacher or one where the students work at a more leisurely or self-controlled pace? Whichever is chosen, the matter of exposure time becomes increasingly important, as numerous studies have shown. A system such as charts allows the students to refer to the visual at any time they need. So, too, do textbook and workbook illustrations. Slides and transparencies may have much the same advantage if the students are given enough viewing time. Films, television and the like are excellent for the presentation of concepts involving movement, but frame time is externally dictated, and the speed at which visualized information passes before students may become a cause of interference.

Interference must be kept in mind when considering what form the visuals will take, and here one should give attention to the ideas of design and realism. All visuals should be clear to all students which means that their size, clarity, spacing and color are all important. It sounds unnecessary to say that a picture in education should not be too small and should not be too large. If it is too small, many details will be indecipherable and hence confusing; if it is too big, a sense of unity will be sacrificed as students,

in trying to scan the whole picture, will tend to have their attention taken by a small section. Spacing is part of this concern as well. When parts of the visual are spaced well, the scanning eye moves smoothly and logically from one to another.

The matter of complexity or simplicity is a feature which is in the context of interference. As was noted in Chapter II the realism continuum does not reflect the "learning continuum" and increasing detail tends, instead, to decrease the teaching potential of the visual. However, this remains an inconstant feature. Dwyer found in his study that realistic, colored photographs were useful in certain proscribed areas of a lesson on the part of the heart. All the same, on the whole, studies suggest that less complex illustrations are more readily understood and better for the transfer of information.

In the context of realism should be considered the matter of color. Again it is hard to be definite in any conclusions for sometimes it is true that black and white illustrations can be extremely effective - the contrast is strong. On the other hand, color can be important for clarification, for attention-getting, for visibility considerations, for the interpretation of relationships and for the subtle transmission of attitudes. Children tend to react to color, especially strong color, more definitely than adults who are accustomed to the symbolism of black

and white and the ideas it transmits, but all people can absorb a great deal from color. Wise use of color can add to the learning experience; undisciplined use adds nothing and can become an overload, resulting in a decrease of understanding.

Using the visuals requires cueing methodology. Adults in particular need to feel in touch with the work being presented and prefer to be told of the learning objectives in front of them. This has the advantage of focusing their attention and receptive concentration. Questions have a similar effect, written or oral, and are also vital for follow-up recall. Printed material, such as arrows, may continue this role. This rehearsal is important to the retention of learned material. All of these gambits, including patches of color in an otherwise black and white illustration, are further variables.

What this points to is that there is no single approach to visuals, and that there are no hard and fast rules for their use. The variables are vitally concerned in what is right for one situation and what is right for another; in order to adapt a visual for another use it may be necessary to change only one or two of these aspects. Educational effectiveness is dependent upon small things and cannot be made constant.

The variables do not change the fact that visuals are useful but they do mean that commercially made products can

seldom fit this fluctuating mould. They cannot take into account the varying needs of students in different learning environments. The whole idea of visuals is that they should respond to just those environments and the needs assessed on an individual basis, that they should deal with learning problems and learning situations which may be unique to an age group, a subject, a cultural attitude or a teaching form. Here lies the great strength of the teacher-made visual aid. No matter what the artistic skills of the teacher, it is he or she alone who recognizes and understands the variables. Only the teacher can produce visual materials which are that immediate response to the situation, and only those are effective teaching aids.

The teacher, then, should not be daunted by the artistic requirements. Experience teaches a lot of ways to deal with these needs, and furthermore brings more ideas. There is no need to turn to another person to translate ideas, for this introduces the potential interference of a third party and his/her interpretations. Necessity is the mother of invention, and it is that which makes teacher-made visual aids a continually vital part of the ESL classroom.

APPENDIX I

Sample Passage for Listening
Comprehension with Visual

I SIMPLE

(a) This woman is tired. She has been shopping most of the day. She is wearing a brown coat and on her head she has an orange hat. She is carrying two bags.

(b) This girl has been at school but now she is going home with her mother. She is wearing blue jeans, a blue hat and a red sweater.

II SLIGHTLY HARDER

(a) Mark Booth's waiting for the bus and he's been waiting quite a while. He's cold so he's put his hands in his pockets to keep them warm. He's wearing dark jeans and a yellow jacket, as well as a blue hat.

(b) Jane Stevens is talking to a friend of hers. She's going home from school. She's got on a blue coat and red boots and she's a blonde.

III CONVERSATION

/A/ Goodness, aren't these buses slow. If it doesn't come soon, I think I'll drop. I'm so tired.

/B/ I thought you looked rather weary. What've you been doing? Shopping?

/A/ Yes, I thought I'd get a few things I needed. But a few things always turns into a lot more. What have you been doing?

/B/ Oh, I had to take my daughter to the dentist so I picked her up from school. When I left the house this morning it was really quite cold so I put on this quilted coat and my fur hat. Now I'm so hot! I'll be glad to get home and shed everything.

/A/ Ah, I'm just looking forward to getting rid of parcels, hat, coat and shoes and putting my feet up.

APPENDIX II

POSSIBLE SCRIPT FOR ORDER! ORDER!

It was spring. The tree was in bud and flowers were beginning to appear. Within a few weeks, the tree was a mass of blossom in pink and red. As the weeks passed, spring faded into summer. The blooms on the tree gave way to leaves. The days grew warmer and the tree provided shade for people walking in the park and for the children who played under it with their toys in the long days.

Gradually these long days began to shorten. The green leaves began their change to red and gold. Before many more weeks had passed the snow had arrived once more. Winter had returned.

BIBLIOGRAPHY

BOOKS

- Bartley, Diane E. (ed). The Adult Basic Education TESOL Handbook. Collier McMillan, New York, 1979.
- Bischoff, L. J. Adult Psychology. Harper and Row, New York, 1969.
- Broadbent, D. E. Perception and Communication. Pergmon Press, New York, 1958.
- Cornsweet, T. N. Visual Perception. Academic Press, New York, 1970.
- Dale, Edgar. Audio Visual Methods in Teaching (3rd Edition) Dryden Press, New York, 1969.
- Brunner, E. de S; Wilder, David S.; Kirchner, Corinne; Newberry jr., John S. An Overview of Adult Education Research. Adult Education Association, Chicago, 1959.
- Dwyer, Francis M. A Guide for Improving Visualized Instruction. Learning Services, Pa. 1972.
- Garvey, Mona. Teaching Displays: Their Purpose, Construction and Use. Linnet Books, Hamden, Conn. 1972.
- Gerlach, Vernon S., and Ely, Donald P. Teaching and Media: A Systematic Approach. Prentice-Hall, Inc., Englewood Cliffs, N.J. 1971.
- Haber, R. N. Information-Processing Approaches to Visual Perception. Holt, Rinehart and Winston. New York, 1969.
- Haber, R. N. and Hershenson, M. The Psychology of Visual Perception. Holt, Rinehart and Winston. New York, 1973.
- Ilyin, Donna, and Tragardh, Thomas (eds). Classroom Practices in Adult ESL. TESOL, Washington, D.C. 1978.

- Knox, Alan B. Adult Development and Learning - A Handbook on Individual Growth and Competence in the Adult Years for Education and the Helping Professions. Jossey-Bass, Inc., San Francisco, 1977.
- Lister, Susan. A Potpourri of Foreign Language Aids. Californian Foreign Language Teachers' Association, San Jose. 1977.
- Miller, James Dale. The Visual Adjunct in Foreign Language Teaching. Chilton Books, for Center for Curriculum Development. Philadelphia, 1965.
- Tanzman, J. and Dunn, K. J. Using Instructional Media Effectively. Parker Publishing Company, West Nyack, New York. 1971.
- Williams, Catharine M. Learning from Pictures. National Education Association, Washington, D.C. 1968.

PAMPHLETS

- Allen, William H. and Daehling, W.A. Exploratory Study of Form Perception as applied to the Production of Educational Media. U.S.C., Los Angeles, June 1968.
- Arnheim, Rudolf. A Study of Visual Factors in Concept Formation. Department of Health, Education and Welfare, 1968.
- Boguslavsky, George W. A Study of Characteristics Contributing to the Effectiveness of Visual Demonstrations. Rensselaer Polytechnic Institute. Troy, N.Y. 1967.
- Craig, Eugene A. Acquisition of Visual Information. Department of Health, Education and Welfare, Washington, D.C. 1972.
- Dwyer, Francis M. Effect of Varying the Amount of Realistic Detail in Visual Illustrations Designed to Complement Programmed Instruction. Penn State University, June 1968.
- Dwyer, Francis M. Study of the Relative Effectiveness of Varied Visual Illustrations. Department of Health, Education and Welfare. Washington, D.C. 1967.

- Gagne, Robert M. and Gropper, George L. Individual Differences in Learning from Visual and Verbal Presentations. American Institutes for Research, Washington, D.C. 1965.
- Galfo, Armand J. A Study of the Effects on Pupil Achievement of Certain Audio and Visual Presentation Sequences. College of William and Mary, Williamsburg, Va., (no date). /E.R.I.C. ED.029.5057
- Gropper, George L. The Role of Visuals in Verbal Learning. Department of Health, Education and Welfare Washington, D.C. 1958.
- Holliday, William G. Using Pictures in the Classroom. University of Calgary. 1979.
- Linker, Jerry M. Designing Instructional Visuals: Theory, Composition, Implementation. Instructional Media Center, University of Texas. 1968.
- Norris, Robert G. Characteristics of Adults that Facilitate and/or Interfere with Learning. Department of Postsecondary Education, Florida State University, 1977.
- Thomas, James L. The Use of Pictorial Illustrations in Instruction: Current Findings and Implications for Further Research. 1976. /E.R.I.C. ED. 160.108/

PRESENTED PAPERS

- Berry, Louis H. "Effects of Color Realism on Pictorial Recognition". Paper presented at Annual Conference of the Association for Educational Communications, New Orleans, La. March, 1979.
- Bikkar, S. Randhara et al. "Visual Learning Revised". Paper presented at Annual Conference of the Association for Educational Communications, Miami Beach, Fla. April, 1977.
- Borg, Walter R. and Schulter, Charles F. "The Use of Detail and Background in Visuals and Its Effect on Learner Achievement and Attitude". Paper presented at Annual Meeting of the American Educational Research Association. Toronto, Canada. March, 1978.

- Brody, Philip J. and Legenza, Alice. "The Effects of Picture Type and Picture Location on Comprehension." Paper presented at the Annual Conference of Association for Educational Communication. New Orleans, La. March, 1979.
- Froese, V. "The 'Arts' in Language Arts." Paper presented at the Annual Meeting of the National Council of Teachers of English. New York City. Nov. 24-26, 1978.
- Gummerman, Kent and Others. "Age and Visual Information Processing." Paper presented at Annual Meeting of the Psychonomic Society. Denver, Colo. November 1975.
- Joseph, John H. "Instructional Effectiveness of Integrating Abstract and Realistic Visualization." Paper presented at the Annual Conference of Association for Educational Communications. New Orleans, La. March, 1979.
- Lamberski, Richard J. and Roberts, Dennis M. "Efficiency of Students' Achievement Using Black/White and Color-coded Learning and Test Materials." Paper presented at Annual Conference of Association for Educational Communications. New Orleans, La. March, 1979.
- Lockard, James. "Educational Media in the Foreign Language Classroom." Paper presented at Conference on New Methodologies in Modern Language Teaching. October 1977.
- Smith, Roger A. "Educational Games in Today's Learning." Paper presented at Annual Convention of American Industrial Arts Association. April, 1976.
- Tong, John S. "Visual Aids and Language Learning - An Experimental Study." Speech presented at Rocky Mt. Modern Language Association, Las Vegas. October, 1971.
- Winn, William and Everett, Richard J. "Differences in the Affective Meaning of Color versus Black/White Pictures." Paper presented at Annual Conference of Association for Educational Communications. Kansas City, Mo. April, 1978.

ARTICLES

- Allen, William H. "Intellectual Abilities and Instructional Media Design." Audio Visual Communication Review, Vol. 23, Summer 1975, pp. 139-170.
- Allport, D.A. "The Rate of Assimilation of Visual Information." Psychonomic Science, Vol. 12, 1968, pp.231-2.
- Arnheim, Rudolf. "What do the Eyes Contribute?" Audio Visual Communication Review, Vol. 10. September-October, 1962, pp.10-21.
- Beck, Harry S. and Dunbar, Ann M. "The Consistency of Color Associations to Synonymous Words." Journal of Educational Research, Vol. 58, September, 1964, pp. 41-3.
- Bireaud, Anne. "The Role of the Teacher in a Resource-Based System." Educational Media International, Vol. 4, 1975. pp.8-9.
- Briggs, G. E. and Blaha, J. "Memory Retrieval and Central Comparison Times in Information Processing." Journal of Experimental Psychology, Vol. 79, 1969, pp. 395-402.
- Broadbent, D. E. "Information Processing in the Nervous System." Science, Vol. 150, 1965, pp. 457-62.
- Broadbent, D. E. "Word Frequency Effect and Response Bias." Psychology Review, Vol. 74, 1967, pp. 1-15.
- Brown, Thomas H. "Using Visual Cues as an Aid for Memorizing a Dialog." Modern Language Journal, Vol. 47, December, 1963, pp. 363-66.
- Clark, John. "The Involvement of the Teacher in the Developer of Learning Materials." Educational Media International, Vol. 4, 1975, pp. 10-12.
- Corballis, M. C. "Rehearsal and Decay in Immediate Recall of Visually and Aurally Presented Items," in Haber, R. N. (ed). Information-Processing Approaches to Visual Perception, Holt, Rinehart and Winston, New York, 1973.
- Dallett, K. and Wilcox, S. "Remembering Pictures versus Remembering Descriptions." Psychonomic Science, Vol. 11, 1968, pp. 139-40.

CHAPTER V

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What this points to is that there is no single approach to visuals, and that there are no hard and fast rules for their use. The variables are vitally concerned in what is right for one situation and what is right for another; in order to adapt a visual for another use it may be necessary to change only one or two of these aspects. Educational effectiveness is dependent upon small things and cannot be made constant.

The variables do not change the fact that visuals are useful but they do mean that commercially made products can

seldom fit this fluctuating mould. They cannot take into account the varying needs of students in different learning environments. The whole idea of visuals is that they should respond to just those environments and the needs assessed on an individual basis, that they should deal with learning problems and learning situations which may be unique to an age group, a subject, a cultural attitude or a teaching form. Here lies the great strength of the teacher-made visual aid. No matter what the artistic skills of the teacher, it is he or she alone who recognizes and understands the variables. Only the teacher can produce visual materials which are that immediate response to the situation, and only those are effective teaching aids.

The teacher, then, should not be daunted by the artistic requirements. Experience teaches a lot of ways to deal with these needs, and furthermore brings more ideas. There is no need to turn to another person to translate ideas, for this introduces the potential interference of a third party and his/her interpretations. Necessity is the mother of invention, and it is that which makes teacher-made visual aids a continually vital part of the ESL classroom.

APPENDIX I

Sample Passage for Listening
Comprehension with Visual

I SIMPLE

(a) This woman is tired. She has been shopping most of the day. She is wearing a brown coat and on her head she has an orange hat. She is carrying two bags.

(b) This girl has been at school but now she is going home with her mother. She is wearing blue jeans, a blue hat and a red sweater.

II SLIGHTLY HARDER

(a) Mark Booth's waiting for the bus and he's been waiting quite a while. He's cold so he's put his hands in his pockets to keep them warm. He's wearing dark jeans and a yellow jacket, as well as a blue hat.

(b) Jane Stevens is talking to a friend of hers. She's going home from school. She's got on a blue coat and red boots and she's a blonde.

III CONVERSATION

/A/ Goodness, aren't these buses slow. If it doesn't come soon, I think I'll drop. I'm so tired.

/B/ I thought you looked rather weary. What've you been doing? Shopping?

/A/ Yes, I thought I'd get a few things I needed. But a few things always turns into a lot more. What have you been doing?

/B/ Oh, I had to take my daughter to the dentist so I picked her up from school. When I left the house this morning it was really quite cold so I put on this quilted coat and my fur hat. Now I'm so hot! I'll be glad to get home and shed everything.

/A/ Ah, I'm just looking forward to getting rid of parcels, hat, coat and shoes and putting my feet up.

APPENDIX II

POSSIBLE SCRIPT FOR ORDER! ORDER!

It was spring. The tree was in bud and flowers were beginning to appear. Within a few weeks, the tree was a mass of blossom in pink and red. As the weeks passed, spring faded into summer. The blooms on the tree gave way to leaves. The days grew warmer and the tree provided shade for people walking in the park and for the children who played under it with their toys in the long days.

Gradually these long days began to shorten. The green leaves began their change to red and gold. Before many more weeks had passed the snow had arrived once more. Winter had returned.

BIBLIOGRAPHY

BOOKS

- Bartley, Diane E. (ed). The Adult Basic Education TESOL Handbook. Collier McMillan, New York, 1979.
- Bischoff, L. J. Adult Psychology. Harper and Row, New York, 1969.
- Broadbent, D. E. Perception and Communication. Pergmon Press, New York, 1958.
- Cornsweet, T. N. Visual Perception. Academic Press, New York, 1970.
- Dale, Edgar. Audio Visual Methods in Teaching (3rd Edition) Dryden Press, New York, 1969.
- Brunner, E. de S; Wilder, David S.; Kirchner, Corinne; Newberry jr., John S. An Overview of Adult Education Research. Adult Education Association, Chicago, 1959.
- Dwyer, Francis M. A Guide for Improving Visualized Instruction. Learning Services, Pa. 1972.
- Garvey, Mona. Teaching Displays: Their Purpose, Construction and Use. Linnet Books, Hamden, Conn. 1972.
- Gerlach, Vernon S., and Ely, Donald P. Teaching and Media: A Systematic Approach. Prentice-Hall, Inc., Englewood Cliffs, N.J. 1971.
- Haber, R. N. Information-Processing Approaches to Visual Perception. Holt, Rinehart and Winston. New York, 1969.
- Haber, R. N. and Hershenson, M. The Psychology of Visual Perception. Holt, Rinehart and Winston. New York, 1973.
- Ilyin, Donna, and Tragardh, Thomas (eds). Classroom Practices in Adult ESL. TESOL, Washington, D.C. 1978.

- Knox, Alan B. Adult Development and Learning - A Handbook on Individual Growth and Competence in the Adult Years for Education and the Helping Professions. Jossey-Bass, Inc., San Francisco, 1977.
- Lister, Susan. A Potpourri of Foreign Language Aids. Californian Foreign Language Teachers' Association, San Jose. 1977.
- Miller, James Dale. The Visual Adjunct in Foreign Language Teaching. Chilton Books, for Center for Curriculum Development. Philadelphia, 1965.
- Tanzman, J. and Dunn, K. J. Using Instructional Media Effectively. Parker Publishing Company, West Nyack, New York. 1971.
- Williams, Catharine M. Learning from Pictures. National Education Association, Washington, D.C. 1968.

PAMPHLETS

- Allen, William H. and Daehling, W.A. Exploratory Study of Form Perception as applied to the Production of Educational Media. U.S.C., Los Angeles, June 1968.
- Arnheim, Rudolf. A Study of Visual Factors in Concept Formation. Department of Health, Education and Welfare, 1968.
- Boguslavsky, George W. A Study of Characteristics Contributing to the Effectiveness of Visual Demonstrations. Rensselaer Polytechnic Institute. Troy, N.Y. 1967.
- Craig, Eugene A. Acquisition of Visual Information. Department of Health, Education and Welfare, Washington, D.C. 1972.
- Dwyer, Francis M. Effect of Varying the Amount of Realistic Detail in Visual Illustrations Designed to Complement Programmed Instruction. Penn State University, June 1968.
- Dwyer, Francis M. Study of the Relative Effectiveness of Varied Visual Illustrations. Department of Health, Education and Welfare. Washington, D.C. 1967.

- Gagne, Robert M. and Gropper, George L. Individual Differences in Learning from Visual and Verbal Presentations. American Institutes for Research, Washington, D.C. 1965.
- Galfo, Armand J. A Study of the Effects on Pupil Achievement of Certain Audio and Visual Presentation Sequences. College of William and Mary, Williamsburg, Va., (no date). /E.R.I.C. ED.029.5057
- Gropper, George L. The Role of Visuals in Verbal Learning. Department of Health, Education and Welfare Washington, D.C. 1958.
- Holliday, William G. Using Pictures in the Classroom. University of Calgary. 1979.
- Linker, Jerry M. Designing Instructional Visuals: Theory, Composition, Implementation. Instructional Media Center, University of Texas. 1968.
- Norris, Robert G. Characteristics of Adults that Facilitate and/or Interfere with Learning. Department of Postsecondary Education, Florida State University, 1977.
- Thomas, James L. The Use of Pictorial Illustrations in Instruction: Current Findings and Implications for Further Research. 1976. /E.R.I.C. ED. 160.108/

PRESENTED PAPERS

- Berry, Louis H. "Effects of Color Realism on Pictorial Recognition". Paper presented at Annual Conference of the Association for Educational Communications, New Orleans, La. March, 1979.
- Bikkar, S. Randhara et al. "Visual Learning Revised". Paper presented at Annual Conference of the Association for Educational Communications, Miami Beach, Fla. April, 1977.
- Borg, Walter R. and Schulter, Charles F. "The Use of Detail and Background in Visuals and Its Effect on Learner Achievement and Attitude". Paper presented at Annual Meeting of the American Educational Research Association. Toronto, Canada. March, 1978.

- Brody, Philip J. and Legenza, Alice. "The Effects of Picture Type and Picture Location on Comprehension." Paper presented at the Annual Conference of Association for Educational Communication. New Orleans, La. March, 1979.
- Froese, V. "The 'Arts' in Language Arts." Paper presented at the Annual Meeting of the National Council of Teachers of English. New York City. Nov. 24-26, 1978.
- Gummerman, Kent and Others. "Age and Visual Information Processing." Paper presented at Annual Meeting of the Psychonomic Society. Denver, Colo. November 1975.
- Joseph, John H. "Instructional Effectiveness of Integrating Abstract and Realistic Visualization." Paper presented at the Annual Conference of Association for Educational Communications. New Orleans, La. March, 1979.
- Lamberski, Richard J. and Roberts, Dennis M. "Efficiency of Students' Achievement Using Black/White and Color-coded Learning and Test Materials." Paper presented at Annual Conference of Association for Educational Communications. New Orleans, La. March, 1979.
- Lockard, James. "Educational Media in the Foreign Language Classroom." Paper presented at Conference on New Methodologies in Modern Language Teaching. October 1977.
- Smith, Roger A. "Educational Games in Today's Learning." Paper presented at Annual Convention of American Industrial Arts Association. April, 1976.
- Tong, John S. "Visual Aids and Language Learning - An Experimental Study." Speech presented at Rocky Mt. Modern Language Association, Las Vegas. October, 1971.
- Winn, William and Everett, Richard J. "Differences in the Affective Meaning of Color versus Black/White Pictures." Paper presented at Annual Conference of Association for Educational Communications. Kansas City, Mo. April, 1978.

ARTICLES

- Allen, William H. "Intellectual Abilities and Instructional Media Design." Audio Visual Communication Review, Vol. 23, Summer 1975, pp. 139-170.
- Allport, D.A. "The Rate of Assimilation of Visual Information." Psychonomic Science, Vol. 12, 1968, pp.231-2.
- Arnheim, Rudolf. "What do the Eyes Contribute?" Audio Visual Communication Review, Vol. 10. September-October, 1962, pp.10-21.
- Beck, Harry S. and Dunbar, Ann M. "The Consistency of Color Associations to Synonymous Words." Journal of Educational Research, Vol. 58, September, 1964, pp. 41-3.
- Bireaud, Anne. "The Role of the Teacher in a Resource-Based System." Educational Media International, Vol. 4, 1975. pp.8-9.
- Briggs, G. E. and Blaha, J. "Memory Retrieval and Central Comparison Times in Information Processing." Journal of Experimental Psychology, Vol. 79, 1969, pp. 395-402.
- Broadbent, D. E. "Information Processing in the Nervous System." Science, Vol. 150, 1965, pp. 457-62.
- Broadbent, D. E. "Word Frequency Effect and Response Bias." Psychology Review, Vol. 74, 1967, pp. 1-15.
- Brown, Thomas H. "Using Visual Cues as an Aid for Memorizing a Dialog." Modern Language Journal, Vol. 47, December, 1963, pp. 363-66.
- Clark, John. "The Involvement of the Teacher in the Developer of Learning Materials." Educational Media International, Vol. 4, 1975, pp. 10-12.
- Corballis, M. C. "Rehearsal and Decay in Immediate Recall of Visually and Aurally Presented Items," in Haber, R. N. (ed). Information-Processing Approaches to Visual Perception, Holt, Rinehart and Winston, New York, 1973.
- Dallett, K. and Wilcox, S. "Remembering Pictures versus Remembering Descriptions." Psychonomic Science, Vol. 11, 1968, pp. 139-40.