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ABSTRACT

Results of a ten-year review of state appropriations for higher education in the states are presented. Findings reveal a wide range of differences among the regions of the nation and among the individual states. The share of education appropriations received by higher education institutions has grown considerably, with the greatest rate of growth occurring in the private sector. Appropriations for student aid in higher education has also increased considerably from 1968 to 1977. The division of the share within the public sector has shifted toward a larger percentage appropriated directly to the community colleges, and a smaller percentage appropriated to the advanced graduate and research universities. While higher education has increased its share of the education appropriations, its share of state general revenue dropped slightly. Overall, state governments in the aggregate kept pace in funding the increases in full-time-equivalent enrollment although the percentage change was small. Projections for future public support of higher education are included. Data on state general revenues are reported by region and by state. State appropriations information include funds to public elementary and secondary education, and appropriations to various sectors in higher education. Information is presented on appropriations adjusted for inflation, the private sector, and appropriations by enrollments. Appended material includes survey instruments and an analysis of issues in requesting information and using the data. (SW)

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State Budgeting for Higher Education: Trends in State Revenue Appropriations from 1968 to 1977

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Contents

TABLES

TABLES (continued)

TABLES (continued)

GRAPHS

APPENDIX C

SURVEY INSTRUMENTS

APPENDIX D

SUPPLEMENTAL TABLES AND GRAPHS

APPENDIX D (continued)

INTRODUCTION

Most higher education faculty members and administrators look back to the 1960s with nostalgia--especially to the steady growth in enrollments and financial support that marked most of that decade. After 1968, state governors and legislatures appeared far less inclined to finance education at the old rates, and we entered the period christened the New Depression by Cheit (1973). In the early years of the '70s, as enrollment increases began to diminish, so did the rate of growth in public financial support for education; more recently, when enrollments again were on the upswing, a national recession made financing more difficult. Trends have been further confounded by inflation. These changes in the general condition of higher education are reflected in the data analyses that follow, but one must beware of assuming that these major factors affect each institution or each state or region equally. They do not.

The consequences of these enrollment and financing dynamics raise a good many policy issues for institutional and state planners and for state budgeting agencies: Is the proportion of state revenue going to higher education sufficient to support the changes in enrollment? Do the increases in state support counter the effects of

inflation, and at the same time meet new enrollment needs? Which regions and states continue on the financial upswing for higher education despite recession and inflation? Are some institutions, such as the research universities, unduly favored or penalized in the new financing patterns? Have the institutions that lost enrollments also lost the financial support they previously had from the state? Have downturns in enrollment in the elementary and secondary school affected their proportion of state revenues?

In a Center survey conducted several years ago, we found that the presidents of institutions of higher education generally had similar enrollment and financing objectives. Even presidents of institutions with decreased enrollments and a reduced rate of financing during the 1968 to 1974 period looked to the next five years with optimism (Glenny, Shea, Ruyle & Freschi, 1976). Our data here will show that, even when appropriations were adjusted for inflation, the presidents may have been correct. But while appropriations were up in many states, in others they dropped. Shortfalls in state revenue forced some governors to cut budgets in mid-year to recapture some of the dollars that had already been allocated to higher education institutions as well as to other state agencies.

One of the findings of the Center's three-year study of state budgeting practices (Glenny, Bowen, Mensinger, Morgan, Purves & Schmidtlein, 1975) was that the use of formulas to generate the amount of money to be requested from the state had dropped off considerably, and that formulas had given way to negotiation as a means for arriving at dollar amounts in state revenue requests. College and university administrators may get some idea of how negotiations work, as opposed to formulas, from the data that follow.

DESCRIPTION OF THE REPORT

This report is the culmination of four surveys of state general revenue appropriations for education, particularly for higher education, in the 50 states. The first of these surveys undertaken by the Center for Research and Development in Higher Education at Berkeley was initiated with the support and assistance of the State Higher Education Executive Officers Association (SHEEO) to determine: 1) whether the proportion of state revenues allotted to higher education was declining, and 2) the relative proportions of revenue allocated for higher education and for elementary and secondary education.

Three further surveys were made to pursue the investigation. The initial 1972 pilot study was followed by one in 1973. For that second study, state appropriation and enrollment data were obtained for fiscal years 1962-63, 1968-69, 1969-70, 1970-71, 1971-72, and 1972-73. The third survey, which added fiscal years 1974 and 1975, was spurred by a request and small grant from the American Council on Education. The Lilly Endowment, with a two-year grant, subsequently made it possible to complete this third investigation and also to execute the fourth and final survey, for fiscal years 1976 and 1977.

The State Higher Education Executive Officers Association has cooperated in furnishing the data for all four investigations.

Although Delaware, Nebraska, and Vermont do not have statewide boards, each is represented in SHEEO by the director of its 1202 Commission. The continuing help of the directors and staff of these agencies made this report possible, and while formal acknowledgments of respondents are made in Appendix A, we extend our personal and grateful thanks here at the outset to the many persons involved. We are appreciative also of data supplied by additional state agencies--especially in California, Florida, Michigan, and Utah.

A basic goal of SHEEO in supporting this project was to obtain comparable survey results across states that would be more useful than observations of trends in the individual states. This goal, even in the final survey, has not been fully met. Differences in reporting and appropriations practices in the various states, and the numerous definitional problems that plague all attempts to compare enrollments and finances across states, continue to be sources of concern. The National Center for Higher Education Management Systems (NCHEMS) and the National Center for Educational Statistics of HEW, as well as the Center, have recognized and delineated some of the many issues and problems to be resolved or solved before useful comparisons between states can be made (McCoy, Cherin, Makowski, & Weldon, 1976). Notes on this subject, and details of the problems we and the state representatives met in attempting to present accurate and comparable figures for state general revenues, appropriations, and enrollments are more fully covered in Appendix B.

The results of the 1973 survey contained responses from all states except Texas, but since many responding states were unable to report the data requested in every category, the overall results in some instances were disappointing. Much of the data that were supplied and appeared in the 1973 report (Glenny & Kidder, 1974) were revised by the states in the subsequent surveys.

In December 1974, the third survey form, covering an overlapping year included in the earlier survey (fiscal year 1973) and the next two years, was sent to the SHEEO member in each state, as had been done with previous forms.

By spring 1975, most states had responded, but the third survey forms returned from more than a few states indicated numerous major differences between what was reported as enrollments, appropriations, and state federal revenues, and what had been reported in the second survey. Consequently, an attempt was made to secure data that would be more comparable over time. Toward that end, copies of the two completed surveys were sent to each state's representative, asking for confirmation or correction of specific discrepancies noted in their last reported figures. In all, 47 states were contacted. Six states were unable either to confirm or correct some of their data; Alaska and Texas were excluded from that survey by their own request; Idaho, New Hampshire, South Dakota, and Wyoming provided partial data. At the end of April 1976, after the data had been amended according to the latest information sent from the states, the data for fiscal years 1963, and for 1968 through 1975 were analyzed. Each state was then

sent an analysis of its own trends over the years, and also of the trends in its geographical region.

The final survey form was distributed at the end of January 1977. Because of respondents' earlier difficulties in providing new data that was consistent with past data, we included, along with the survey form for fiscal years 1976 and 1977, several documents: an entire record of the past data; a correction form for fiscal years 1968 through 1975; and a three-page checklist. The checklist was derived from our experience in working with the states toward achieving better comparability of information across states, and especially within states. Examples of the forms sent are in Appendix C.

By the end of July, the data from the 41 states that had responded to the final survey were processed, and appeared ready for analysis. During August, the data from all states, except the two for which data were unavailable, Alaska and New Hampshire, were subjected to an arithmetic check for fiscal years 1968 through 1977. (Twenty-six of the responding states had revised some of their figures for years preceding fiscal 1976.) In the data from 35 states, errors not caused by rounding were uncovered and later corrected by the state representatives.

Respondents were requested to place a figure in each cell, including a zero if such were actually the case, and to leave a cell blank only if the data could not be obtained. The returns included a significant number of blank cells.

The data for fiscal years 1968 to 1977 were analyzed by the basic category in which they were collected, e.g., State general revenue, Total state appropriations for all education, Total state appropriations for institutions of higher education. The analysis was made by sector--public or private--and within sectors by type of institution: advanced graduate and research universities, other universities and four- or five-year colleges, and two-year colleges. Tables were developed to show the analyzed data by state and by aggregates for the nation, geographic regions, and groups of "peer" states with certain clustered characteristics.

In February 1978 a final report was sent to the SHEEO office in each state. Trends from fiscal year 1968 to 1977 were shown for each state, the total for all states in its geographical region, the total for its peer states, and the total for all responding states.

To obtain total appropriations for the public and private sectors of higher education, and for the three institutional types that comprise each sector, it was necessary to sum the appropriations for three separate components: 1) the amount appropriated for specific institutions of higher education, 2) state funds made available through student financial aid, and 3) state funds made available through other grants and aids. The sum of these components was the total appropriation. For total public and total private higher education appropriations, blank cells were treated as zeros because generally the amount, if any, was small, or had been included in another component. Florida, Massachusetts, New Jersey and South Carolina were notable exceptions.

Student aid appropriations, which represented at least 5 percent of the total appropriations, could not be broken down into the public and private sectors. Thus, the trends for the two sectors in these states were based on lower figures than they actually were. States with missing data are footnoted on the respective tables. When reporting appropriations for student aid by type of institution, some respondents had to apply a percentage based on the expenditures for student aid to the annual total appropriation.

The earlier findings published in 1974, and the figures and trends discussed in this report, differ to some extent; as mentioned earlier, the states themselves corrected their data for previous years. Caution should be exercised in comparing one state with another; budgeting and reporting practices vary, and the reasons for some differences or similarities are not readily apparent from the data requested for this study. We dropped fiscal year 1963 from our analyses because the SHEEO agencies, many of which were not then in operation, could not verify data previously reported for that year.

The data in tabular as well as graphic form in this document show what the trends have been since 1968. Much of the basic tabular material and the pertinent individual state data are included in Appendix D.

STATE GENERAL REVENUE

A state's revenue consists of funds received from many sources, but in this study we were concerned only with those revenues which the state, at its own discretion, could appropriate for the purposes of education, or with those which by previous agreement or enactment were specifically earmarked for education. "State general revenue" is here defined, therefore, as that portion of total state revenue whose disposition and use were not restricted by statute, with the exception that state-restricted funds for education were included and funds for capital projects excluded. Funds generated by institutions of higher education themselves, such as tuition, fees, royalties, patents, auxiliary enterprises, were omitted so that analyses would reflect only state-generated funds and restricted funds for education. Since "state general revenue" is a subset of total revenue, its relative size to the total will vary, perhaps substantially, according to previous actions of the state in designating certain receipts for specific purposes. Thus, it is important to view appropriations for higher education in the light of general revenue funds available in a given year, and not in terms of the total revenue of that state. (Some states earmark certain revenues, such as severance taxes, taxes on amusements, gambling, etc., for various purposes which are not

reflected in the tax revenue total reported here.) The years cited are fiscal years and identify the closing year.

BY REGION

In general, state general revenues trebled from 1968 to 1977 in the 47 states for which data were complete; the percentage change was over 200, as shown in Table 1. The central region had the greatest gain; however, since 1973, it was the western region, with a percentage change of 84, that gained the most. The eastern states gained the least during the same period, with only a 39 percent change. The variation among the four regions was much more marked in the last five years of the period covered, possibly reflecting the differential effects of inflation and recession in different regions and shifts in population. Overall, compared to the preceding years, fiscal years 1971 and 1977 showed the smallest gains.

The basic regional grouping was formed by dividing the United States into four geographic areas--north, south, east and west--and placing those states comprising membership in the Western Interstate Commission for Higher Education (WICHE) into the western region, members of the Southern Regional Educational Board (SREB) into the southern region, the New England Board of Higher Education (NEBHE) member states together with New Jersey, New York, and Pennsylvania into the eastern region, and the remaining states into the central region.

Table 1. Percentage Change in State General Revenue, 1968-1977, by Region

Region	Percentage change from fiscal year 1968 to 1969	1970	1971	1972	1973	1974	1975	1976	1977	1968 to 1972	1973 to 1977
West (N=11)	11	20	29	50	71	99	137	172	216	50	84
Central (N=13)	13	38	51	75	104	139	170	218	240	75	66
South (N=15)	17	33	46	71	110	144	170	188	215	71	50
East (N=8)	14	37	52	65	99	116	137	159	177	65	39
United States (N=47)	14	33	46	66	97	125	153	183	210	66	56

Region	Percentage change from preceding year 1968 1969	1969 1970	1970 1971	1971 1972	1972 1973	1973 1974	1974 1975	1975 1976	1976 1977
West (N=11)	11	8	7	16	14	16	19	14	16
Central (N=13)	13	22	9	15	16	17	12	17	6
South (N=15)	17	13	9	17	22	16	10	6	9
East (N=8)	14	19	11	8	20	8	10	8	7
United States (N=47)	14	16	9	13	18	14	12	11	9

Note: Alaska, New Hampshire, and Utah are not included because data were not provided for all years.

West (13 states)	Alaska, Arizona, California, Colorado, Hawaii, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, and Wyoming
Central (13 states)	Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, Oklahoma, South Dakota, and Wisconsin
South (15 states)	Alabama, Arkansas, Delaware, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, North Carolina, South Carolina, Tennessee, Texas, Virginia, and West Virginia
East (9 states)	Connecticut, Maine, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, and Vermont

BY STATE

Table 2 shows the actual general revenue figures by state for the 10 fiscal years covered by the surveys. The states that showed the most increase from 1968 to 1977 were Iowa (380%), Arizona (335%), Minnesota (320%), and Louisiana (314%). Those with the least were New York (154%), Missouri and Georgia (both 155%), and Indiana (103%). The variation over the years within states and between states is shown in Appendix D-1. The percentage change between 1968 and 1972 ranges from 33 (Indiana) to 124 (Arizona). The changes from 1973 to 1977 varied even more: from 10 percent (Louisiana) to 101 and 202 percent (Kansas and Wyoming, respectively). The detail appearing in Appendix D-1 shows that 11 states reported an actual drop in revenue for one year out of the last ten. Since these figures were not adjusted for inflation, the drop in income must have been serious. Although only Nebraska and Louisiana suffered a decrease in revenue for more than one year, more than half of the responding states reported a percentage change of less than 5 percent for at least one fiscal year, which probably affected

Table 2. State General Revenue (in thousands of dollars), 1968-1977, by State

States	Fiscal years									
	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977
ALABAMA	354293	370494	454946	497915	574444	638551	728931	815028	931308	1016288
ALASKA										
ARIZONA	185586	205540	283392	336728	417540	478201	507500	703794	766796	808425
ARKANSAS	189358	212958	239798	259773	306807	371961	438200	466299	564341	610141
CALIFORNIA	3557610	3962520	4125607	4250263	5212692	5976340	6977524	8460868	9620352	11469863
COLORADO	267773	309383	357194	397704	468282	581923	673800	745300	822188	885451
CONNECTICUT	481915	588307	736958	851383	1080527	1216688	1244800	1322400	1672180	1801255
DELAWARE	156708	169708	212065	246070	274821	308859	350704	386045	415157	430800
FLORIDA	664410	938765	1073126	1196947	1378500	1619596	2107738	2523178	2183420	2415644
GEORGIA	750000	833119	991515	1056652	1141517	1364338	1674250	1663820	1749721	1912667
HAWAII	248716	272218	345600	386236	404368	467677	540148	627127	679540	744971
IDAHO	92485	89255	100640	117694	120428	148412	152903	193503	241707	262697
ILLINOIS	1330953	1515910	2749952	2552130	2769300	3153592	3441735	3859308	4179000	4629000
INDIANA	636304	616587	701193	730354	849022	897646	1058484	1189617	1219803	1255524
IOWA	249621	461106	461106	524023	524023	665917	789488	913317	1095684	1200470
KANSAS	251404	275778	338273	348650	363299	382226	484377	592386	668853	771576
KENTUCKY	373038	487166	525542	568334	646759	726287	818909	983046	1081007	1206000
LOUISIANA	458600	514497	512809	501577	628392	1726801	1811375	2097457	1855348	1900292
MAINE	112432	123455	167299	184887	209913	233349	279395	308358	346188	382262
MARYLAND	593952	659766	822577	915566	1023839	1242564	1377811	1431246	1652240	1819786
MASSACHUSETTS	1258686	1325026	1595545	1764675	2098590	2465115	2561596	2788000	3298000	3474500
MICHIGAN	1183245	1228255	1355511	2068663	2474140	3008025	3891099	4292405	5830507	5841535
MINNESOTA	679000	721000	965000	1083000	1351000	1566000	1726000	1920000	2585775	2857961
MISSISSIPPI	217370	265431	333001	354116	399446	451775	507723	557298	594854	663557
MISSOURI	534636	610426	662227	664350	794389	884045	996662	1150149	1221915	1363415
MONTANA	62569	68346	82204	80952	93032	118150	138684	145950	166342	185555
NEBRASKA	127083	134151	164363	170319	174369	219300	265885	277568	301143	352056
NEVADA	60970	68106	77402	90091	96754	123448	148525	162702	178744	199174
NEW HAMPSHIRE	88758	89995	70151	95449	113562					
NEW JERSEY	1014099	1069543	1374646	1661146	1755453	1569694	2279754	2632735	2602917	3068495
NEW MEXICO	184273	201125	234594	251110	284211	328680	373795	429410	546340	625708
NEW YORK	4169200	4960500	5666300	6130900	6107700	7756200	8636300	9253000	9974000	10611000
NORTH CAROLINA	679199	776266	878550	967636	1044665	1139501	1433242	1699418	1756263	1944194
NORTH DAKOTA	69702	74156	84980	103730	115290	135045	173162	223357	234375	243958
OHIO	1112600	1244400	1445500	1575300	2023600	2402600	2733900	3144900	3410100	3790200
OKLAHOMA	169645	176100	236106	265539	310376	319718	382014	427438	556562	622250
OREGON	275927	275825	348850	348850	384398	384398	519886	519886	646478	764467
PENNSYLVANIA	1706537	1958310	2437404	2693236	3164090	3763287	3885885	4505527	4776626	4545907
RHODE ISLAND	179714	212148	241962	253074	324436	362090	381912	422240	453662	505682
SOUTH CAROLINA	336400	381500	458600	504500	581500	705567	812022	873330	964342	1103408
SOUTH DAKOTA	47162	56574	57582	73447	80755	106021	109239	117422	138643	147688
TENNESSEE	412094	454950	456154	534256	663162	759147	850896	910405	965698	1134636
TEXAS	1006151	1120394	1231404	1270963	1804827	1883764	2216445	2367687	2582565	3100382
UTAH	153925	169355	214721	228523	262347	311597	334407	371858	434600	
VERMONT	63594	71333	105675	105243	120650	141515	144082	149064	161678	168550
VIRGINIA	456926	636634	705049	843773	920423	1087953	1225611	1398654	1531712	1762368
WASHINGTON	670700	765600	956100	936700	915000	1011100	1114535	1297562	1544926	1761486
WEST VIRGINIA	253627	270971	308965	345696	417708	448993	483228	484500	676175	728562
WISCONSIN	545447	602953	721448	803545	878648	1031388	1290918	1457791	1601451	1762677
WYOMING	30571	30571	38176	38176	48831	38192	65952	81337	106713	115606

Note: Blanks indicate missing data

the appropriations to most agencies and institutions in those states. The following data will show how education, as supported by the state, fared in those years.

STATE APPROPRIATIONS FOR EDUCATION

Although state appropriations for education did not rise as rapidly as did state general revenue, they more than doubled from 1968 to 1977. The differences among regions for these appropriations were not as great as they were for revenue, but the highest percentage of change was in the central region and the lowest in the eastern (Table 3). The central states showed the greatest discrepancy between increases in revenues and in appropriations to education from 1968 to 1977, and the western states the least. In all four regions the growth rates of general revenue and appropriations for education were similar through 1972; then a gap between these rates of growth opened and continued to widen from fiscal year 1973 to 1977, except in the western region for one year (fiscal year 1975). Graphs that show these relationships by region appear in Appendix D-2.

As usual, general trends for the regions and the nation as a whole masked individual state differences. In nine of the states, the 1977 percentage change from 1968 in appropriations for education exceeded that of general revenue, and in another eight the difference was no more than 10 percentage points, as compared to the overall difference of from between 210 percent for revenues and 167 percent

Table 3. Percentage Change in State Appropriations to All Education, 1968-1977, by Region

Region	Percentage change from fiscal year 1968 to 1969	1970	1971	1972	1973	1974	1975	1976	1977	1968 to 1972	1973 to 1977
West (N=11)	9	25	34	40	51	89	133	142	173	40	80
Central (N=13)	11	34	46	65	86	102	126	156	181	65	50
South (N=15)	17	30	43	61	80	109	132	157	173	61	51
East (N=8)	21	36	48	63	79	98	118	132	140	63	34
United States (N=47)	15	32	43	58	76	101	127	148	167	58	51

Region	Percentage change from preceding year 1968 1969	1969 1970	1970 1971	1971 1972	1972 1973	1973 1974	1974 1975	1975 1976	1976 1977
West (N=11)	9	15	6	4	8	25	23	3	12
Central (N=13)	11	12	8	13	12	8	11	13	9
South (N=15)	17	10	9	12	12	15	11	10	6
East (N=8)	21	12	8	9	9	10	10	6	3
United States (N=47)	15	14	8	10	10	14	13	9	7

Note: Alaska, New Hampshire and Utah are not included because data were not provided for all years.

"All education" comprises appropriations made both to institutions of higher education and to elementary and secondary schools. In some states, analysis of the figures reported for the two subsections revealed that the sum of the parts is less than the figure reported for all education because

for all education. The percentage change in appropriations for all education in the individual states is shown in Appendix D-3.

As suggested by the percentage change differences noted above, education's share of state general revenue for the country as a whole dropped from a high of 55 percent in 1968, excluding Alaska, to a low of 47 percent in 1977, excluding Alaska, New Hampshire, and Utah. Comparing 1977 to 1968, education's share of the general revenue increased in only 11 states (the highest were Rhode Island, with 11 percent, and Colorado, with 10 percent). Fourteen states dropped 10 percent or more of their portion of general revenue for education. The proportions for each year by state are shown in Appendix D-4. While the proportion dropped from 1968 in most states, a steady decline year after year was not common among the states. Even in states where the downward trend was clear (Connecticut, New Mexico, and New York), the percentage increased in some years.

Thus we see that although appropriations to education steadily increased from 1968 to 1977, the percentage of general revenues to education nevertheless dropped as a result of other state agencies receiving a larger fraction of state funds than in the past.

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certain appropriations either were to have been excluded from the parts or were not covered by the categories provided in the survey form. Thus, in many states the figures for all education include appropriations to other agencies and programs that also support the educational function, such as vocational or technical institutes, teachers' retirement payments, and special programs for the handicapped.

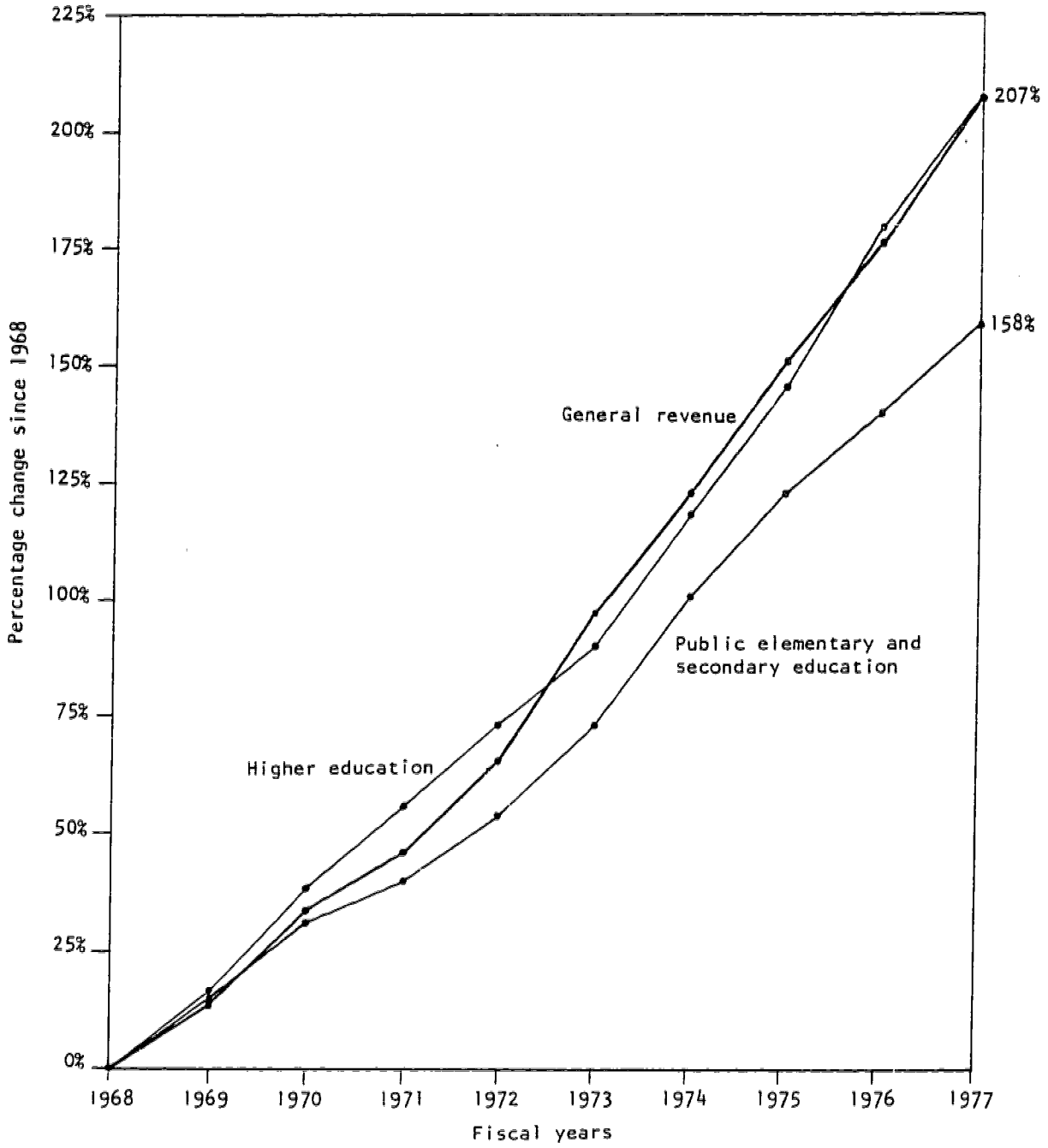
APPROPRIATIONS TO PUBLIC ELEMENTARY AND SECONDARY SCHOOLS AND TO HIGHER EDUCATION

The two major subsets of appropriations to education, looked at together, clearly indicate that total appropriations to higher education (Appendix D-5) rose at a faster pace than those for public elementary and secondary education (Appendix D-6). Graph 1 shows the percentage change since 1968 in appropriations and in general revenue for the 43 states that provided full ten years of data in the three categories. While state revenue increased at a faster rate than state appropriations to public elementary and secondary education since 1970, state revenue also rose faster than appropriations to higher education in fiscal years 1973 to 1975. Between 1968 and 1972, appropriations for higher education increased more than either general revenue or elementary and secondary appropriations. Still, the differences between the growth rates of higher education appropriations and general revenue were not great from 1968 to 1977. The total appropriations for institutions of higher education for each fiscal year by state appear in Appendix D-7.

In making comparisons between the increases for elementary and secondary education and those for higher education, one should keep in mind that the drop in number of live births beginning in 1963 has affected every grade from kindergarten through high school. While enrollments at the lower levels of education dropped, those in higher education continued to increase (Graph 2). Despite this, Table 4 shows that in the central states, the percentage change from

Graph 1

Percentage Change in State General Revenue, and Appropriations to All Higher Education and to Public Elementary and Secondary Education, 1968-1977, in 43 States



Note: Alaska, Michigan, Montana, Nebraska, New Hampshire, Rhode Island, and Utah are not included because data were not provided for all years.

1968 to 1977 in appropriations for elementary and secondary education was far greater than the percentage change in appropriations for higher education. All other regions showed greater increases for higher education, with differences from about 50 to 100 percentage points between the two sectors over the ten years. Percentage change from 1968 for each fiscal year appears in Graph 3, showing striking differences between the regions.

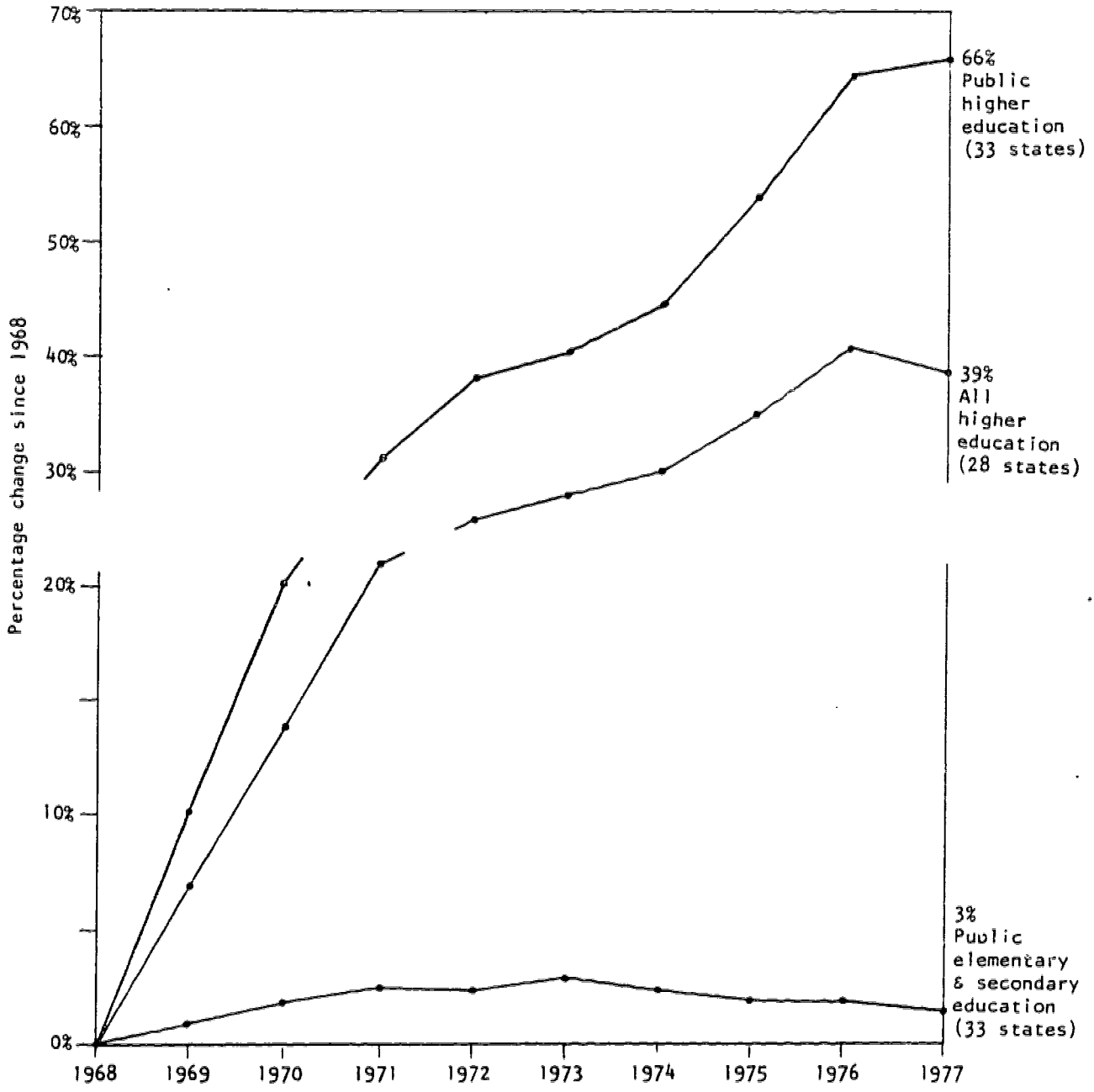
Table 4. Percentage Change in State General Revenue, and Appropriations to All Higher Education and to Public Elementary and Secondary Education, 1968-1977, by Region

	State general revenue	Appropriations to public elementary & secondary education	Appropriations to all higher education	Difference in growth rates of appropriations to the two sectors
West (N=10)	216	150	227	77
Central (N=11)	232	220	173	-47
South (N=15)	215	159	254	95
East (N=7)	177	122	171	49
United States (N=43)	207	158	207	49

Note: Alaska, Michigan, Montana, Nebraska, New Hampshire, Rhode Island, and Utah are not included because data were not provided for the three categories for all years.

Graph 2

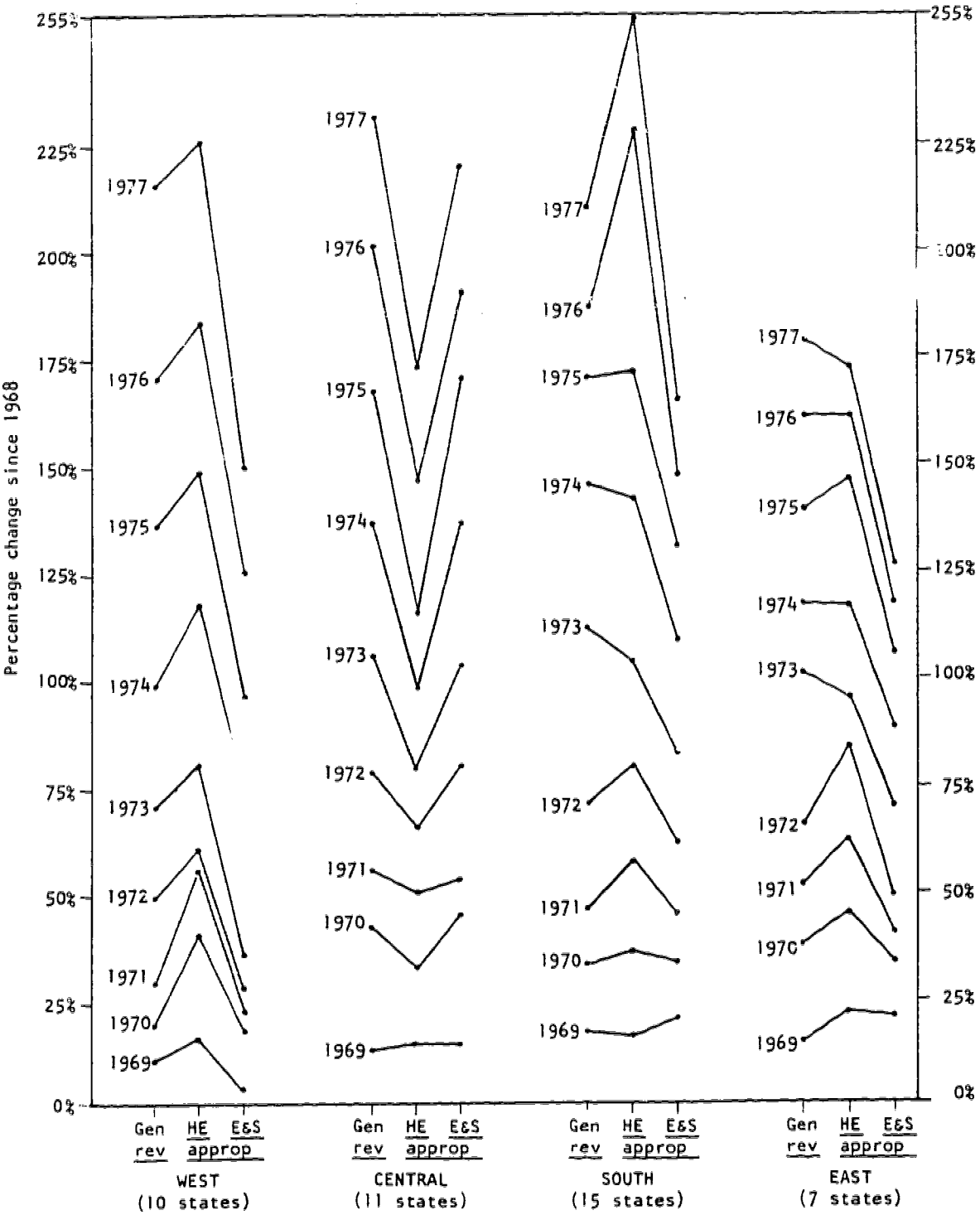
Percentage Change in Enrollments, 1968-1977: All Higher Education (FTE), Public Higher Education (FTE), and Public Elementary and Secondary Education (ADA)



Note: Alaska, Arkansas, Delaware, Georgia, Idaho, Louisiana, Maryland, Massachusetts, Montana, New Hampshire, North Dakota, Oklahoma, Rhode Island, Texas, Utah, Virginia, and Wyoming are not included because data were not provided for all years. In addition, California, Florida, Indiana, Minnesota, and West Virginia are not included in "All higher education" because enrollment data for private colleges and universities were not provided for all years.

Graph 3

Percentage Change in State General Revenue, and Appropriations to All Higher Education, and to Public Elementary and Secondary Education, 1968-1977, by Region



Note: Alaska, Michigan, Montana, Nebraska, New Hampshire, Rhode Island, and Utah are not included because data were not provided for all years.

Overall, the percentage of general revenue appropriated to higher education hovered around 15 percent up to 1972, then dropped to 14 percent (Table 5). As would be expected, the central states as a group reported a greater decrease than other regions, with a drop of 4 percentage points since 1968.

Table 5. Percentage of State General Revenue Appropriated to All Higher Education, 1968-1977, by Region

Region	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977
West (N=11)	17	18	19	20	18	18	18	17	17	17
Central (N=13)	18	18	17	18	17	16	15	15	14	14
South (N=15)	16	16	16	17	17	15	16	16	18	18
East (N=8)	10	10	10	11	11	10	10	10	10	10
United States (N=47)	15	15	15	16	15	14	14	14	14	14

Note: Alaska, New Hampshire, and Utah were not included because data were not provided for all years.

Besides grouping the states by regions, it was useful to group them by the means devised by the staff at the National Center for Higher Education Management Systems (NCHEMS. Unpublished, undated paper). They developed sets of peer states by using a cluster analysis of hierarchical grouping based on six characteristics. The characteristics selected were those deemed likely to be related to a state's ability to support higher education. We believe that there are such differences among states, that these influence their

appropriations to higher education, and that geographical comparisons are not sufficient. The six variables used were:

1. Population of the state
2. Per capita personal income in the state
3. Per capita state revenues (total)
4. Assets of public institutions (land, buildings, and equipment at end-of-year book value) per public student
5. Percentage of higher education enrollments in public institutions
6. Percentage of expenditures in public institutions from sources other than the state

Per capita state expenditures was excluded as a variable because of its extremely high correlation with per capita state revenues. The 14 groups of peer states are shown below:

Group 1
- Arkansas
- Louisiana
- Maine
- Mississippi
- North Carolina
- Tennessee

Group 2
- Florida
- Georgia
- Missouri
- Texas
- Virginia

Group 3
- Idaho
- Kentucky
- South Carolina
- West Virginia

Group 4
- Alabama
- New Mexico
- Oklahoma
- South Dakota

Group 5
- Arizona
- Kansas
- Maryland
- Michigan
- Montana
- Oregon
- Washington
- Wisconsin

Group 6
- Colorado
- Hawaii
- Nevada
- North Dakota
- Wyoming

Group 7
- Delaware
- Indiana
- Iowa
- Minnesota
- Nebraska
- Rhode Island

Group 8
- Ohio
- Pennsylvania

Group 9
- New Hampshire
- Utah
- Vermont

Group 10
- Alaska

Group 11
- Connecticut
- Illinois
- New Jersey

Group 12
- Massachusetts

Group 13
- California
- New York

Group 14
- District of Columbia

Table 6 shows the state variations from 1968 to 1977, grouped by the state factors developed by NCHEMS. The percentage allotted to higher education in 1977 ranged from a low of 7 percent in Connecticut and Massachusetts to a high of 32 percent in South Dakota. Only four states increased their share by 5 percent or more, while 11 states lost 5 percent or more of their share. Of the 47 states with data for all years, 23 lost a portion of their share from 1968 to 1977, 21 states gained, and three had the same percentage of revenue in fiscal year 1977 as in 1968.

Table 6. Percentage of State General Revenue Appropriated to All Higher Education, 1968-1977, by State

	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977
Group 1	15	15	15	17	16	12	13	13	16	16
Arkansas	16	16	17	17	16	15	16	18	18	18
**Louisiana	19	18	17	22	18	6	6	6	10	11
**Maine	16	14	13	13	13	12	12	12	11	9
Mississippi	16	14	12	16	16	16	17	17	19	18
*North Carolina	12	13	14	14	16	15	16	16	21	21
Tennessee	15	16	17	17	16	17	17	17	17	17
Group 2	18	18	19	20	19	19	19	18	21	21
Florida	20	17	19	20	18	18	16	16	18	18
Georgia	13	15	14	15	15	14	15	15	15	14
Missouri	17	18	19	19	18	18	18	16	16	16
*Texas	23	23	26	27	23	25	26	26	30	31
Virginia	16	15	15	15	16	17	17	17	18	17
Group 3	15	15	16	16	16	16	17	18	16	16
Idaho	22	22	23	24	25	24	24	23	22	24
Kentucky	18	17	18	19	19	19	18	17	18	18
*South Carolina	9	9	10	10	11	12	14	17	16	14
West Virginia	18	18	18	17	16	17	17	18	14	15
Group 4	20	20	19	19	19	18	20	19	20	20
Alabama	16	16	16	16	16	15	18	18	22	19
New Mexico	15	15	15	16	16	15	14	14	13	13
Oklahoma	27	29	25	26	25	25	23	24	23	24
South Dakota	34	32	33	28	29	29	31	32	32	32

Table 6 (continued).

	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977
Group 5	18	18	19	19	18	17	16	16	14	14
**Arizona	24	26	23	24	22	20	22	18	18	19
Kansas	21	21	20	22	22	24	22	21	23	22
Maryland	11	11	11	13	13	12	12	12	12	11
**Michigan	15	15	17	16	14	13	12	12	9	10
**Montana	30	33	29	31	27	23	21	21	23	22
Oregon	27	30	28	28	28	30	25	26	26	24
Washington	19	19	22	21	20	20	21	21	19	18
Wisconsin	21	23	21	22	24	23	19	18	17	17
Group 6	17	18	20	21	19	17	17	16	18	19
Colorado	20	21	25	27	22	17	20	20	21	22
Hawaii	10	11	11	13	14	14	10	9	10	11
Nevada	19	18	19	17	19	17	18	18	21	21
North Dakota	22	24	23	20	19	19	18	14	20	19
**Wyoming	36	36	38	38	37	48	33	32	31	30
Group 7	18	18	17	17	17	15	15	15	15	15
Delaware	6	7	7	8	7	8	8	9	10	10
Indiana	23	24	22	23	23	23	21	20	25	25
**Iowa	33	21	21	21	22	18	18	17	18	18
**Minnesota	14	14	13	13	12	11	10	10	9	9
*Nebraska	19	25	22	29	31	28	27	30	35	31
Rhode Island	11	11	12	12	11	11	12	12	12	12
Group 8	12	13	13	12	12	11	11	11	12	12
Ohio	13	14	15	15	14	12	12	12	12	12
Pennsylvania	12	13	12	11	11	10	10	10	11	11
Group 9										
New Hampshire	17	17	17	13	11					
Utah	19	20	17	18	18	17	18	18	18	
**Vermont	16	16	12	13	13	11	12	13	12	11
Group 11	14	15	13	13	13	13	13	12	11	11
**Connecticut	12	11	11	11	10	9	9	10	7	7
**Illinois	19	20	16	17	16	15	15	15	14	14
New Jersey	8	10	8	9	11	11	10	10	10	9
Group 12: Mass.	6	6	7	8	8	7	8	8	7	7
Group 13	12	13	14	14	14	13	13	13	13	13
California	15	16	18	19	16	16	17	16	16	16
New York	10	10	11	11	13	10	10	11	10	10

* Gained 5 percent or more of general revenue
** Lost 5 percent or more of general revenue

Note: Alaska (Group 10 not shown), New Hampshire, and Utah data are incomplete

Since higher education in the aggregate maintained a relatively steady proportion of the general revenue, it was not surprising to find that the dip in appropriations to all education reflected the increasingly smaller proportion of revenue (a drop of 6 percent since 1969) given to public elementary and secondary schools (Table 7). The percentage varied greatly by state and region, but the trend was toward a smaller piece of the pie for elementary and secondary education in 28 of the 44 states for which data were available (Appendix D-8). This was partly attributable to the decline in age cohorts, and thus of enrollments.

Table 7. Percentage of State General Revenue Appropriated to Public Elementary and Secondary Education, 1968-1977, by Region

Region		1968	1969	1970	1971	1972	1973	1974	1975	1976	1977
West	(N=10)	38	36	38	37	33	30	34	32	31	30
Central	(N=11)	34	35	34	34	34	34	35	35	33	33
South	(N=15)	47	48	47	46	44	41	40	40	40	38
East	(N=7)	33	34	32	30	29	28	28	28	27	27
United States	(N=43)	38	38	37	36	35	33	34	33	33	32

Note: Alaska, Michigan, Montana, Nebraska, New Hampshire, Rhode Island, and Utah are not included because data were not provided for all years.

Graph 4 shows the overall trends in the percentage of general revenue appropriated to education, and Graph 5 reflects the regional variations. It should be noted that the figures and trends were related to many other conditions which are not shown, for example: changes in enrollment, cost per student, and shifting patterns of responsibility between the state and the local community for each type of educational activity.

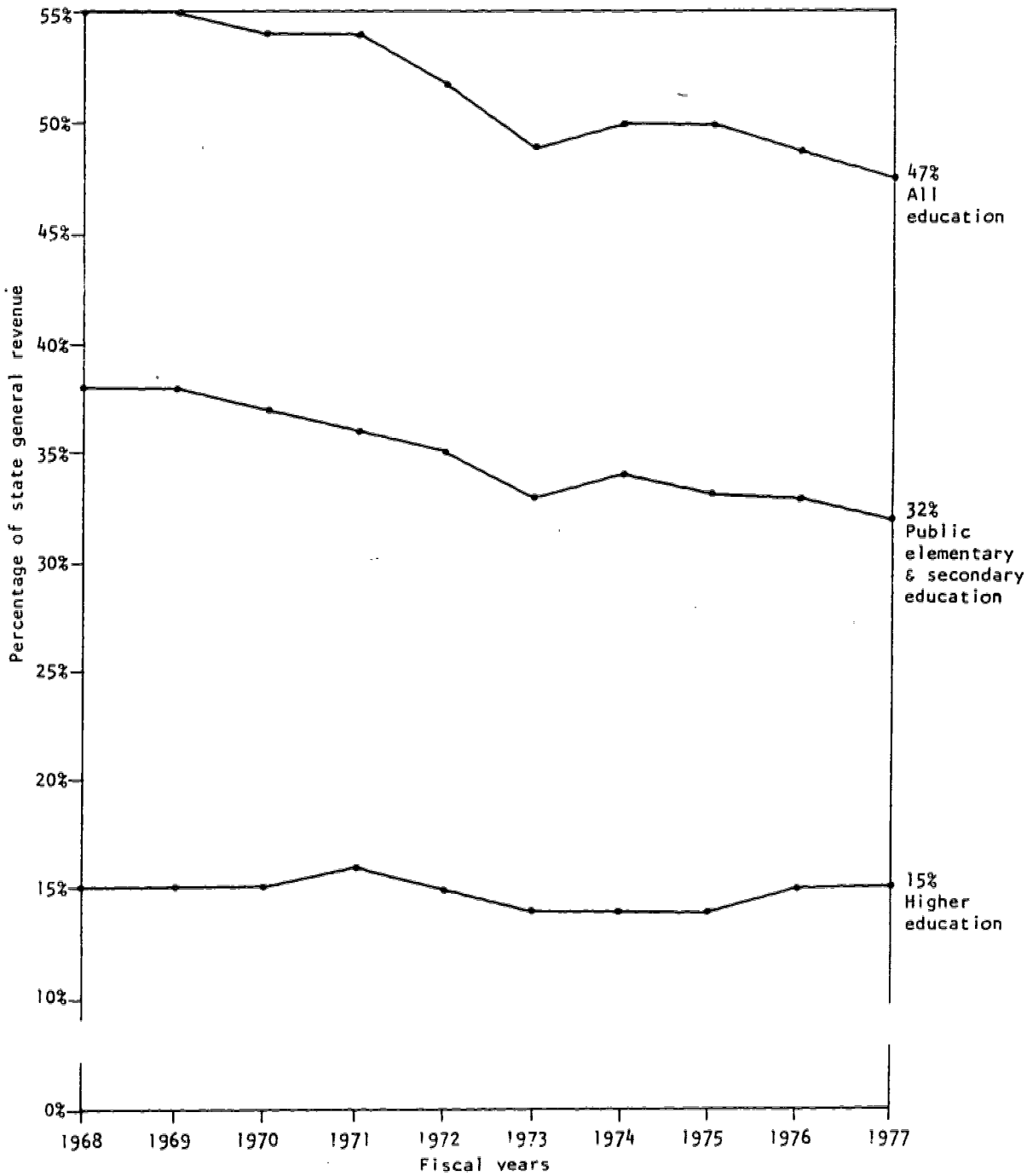
Of state appropriations for "All education," higher education's percentage grew from 27 percent in 1968 to 31 percent in 1977. However, the states differed considerably in the proportion of their educational monies appropriated to higher education; in 1977, for example, the proportions ranged from 17 percent in Maine to 70 percent in Wyoming. For the state proportions and trends, see Appendix D-9.

APPROPRIATIONS TO VARIOUS SECTORS IN HIGHER EDUCATION

Public higher education continued, from 1968 to 1977, to be the recipient of nearly all state appropriations to higher education. This situation changed only slightly over those ten years: from 97 percent in 1968 to 95 percent in 1977. These percentages include appropriations made directly to institutions, funds made available through student aid and other grants-in-aid, and appropriations made directly to statewide coordinating or governing boards, and to other governing boards and agencies of higher education. The western states changed only 1 percent (from 99 to 98). The other regions changed 2 percent: from 99 to 97 in the south, from 98 to 96 in the central

Graph 4

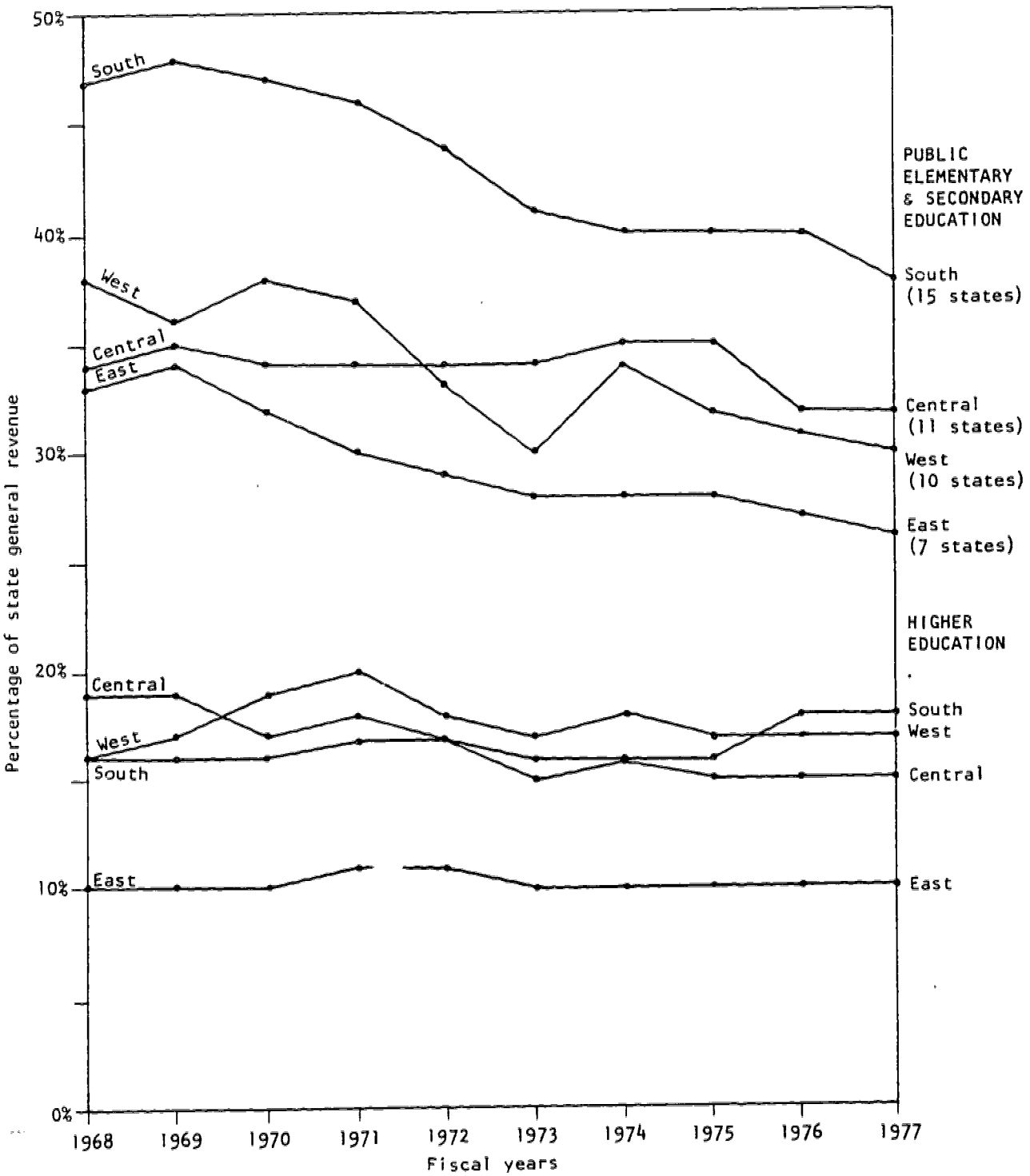
Percentage of State General Revenue Appropriated to All Education, to Public Elementary and Secondary Education, and to All Higher Education, 1968-1977, in 43 States



Note: Alaska, Michigan, Montana, Nebraska, New Hampshire, Rhode Island, and Utah are not included because data were not provided for all years.

Graph 5

Percentage of State General Revenue Appropriated to Public Elementary and Secondary Education, and to All Higher Education, 1968-1977, by Region



Note: Alaska, Michigan, Montana, Nebraska, New Hampshire, Rhode Island, and Utah are not included because data were not provided for all years.

states, and from 90 to 88 in the east. The changes in percentages by state and region are shown in Appendix D-10.

The Public Sector

For the most part, state appropriations for higher education were granted directly to public institutions and agencies--94 percent in fiscal year 1968, and 92 percent in 1977 (Graph 6). Public advanced graduate and research universities continued to receive the greatest proportion, but dropped from more than half (54%) of the total appropriation for higher education in 1968 to less than half in 1977 (46%). While other public four- or five-year colleges and universities saw their share drop slightly, it was the community colleges whose share increased appreciably in nearly every state since 1968, and especially in the western states (Table 8). Although Appendix D-11 shows a drop in the share for the public advanced graduate universities in all but a few states, most states increased their appropriations for their universities, even in constant dollars (Appendix D-16). So the drop in the share reflected the large increases to community colleges, which was not necessarily at the expense of the advanced graduate institutions. And this, of course, reflected the large and rapid growth of community college enrollments during the ten-year period.

The percentage of general revenue to advanced graduate universities dropped from 8 to 6 percent on the whole (Appendix D-12). The differences between regions are shown in Graph 7 for the three types of public institutions. The percentage to the advanced

Graph 6

Distribution of Appropriations to All Higher Education, 1968 and 1977 (in percentages)

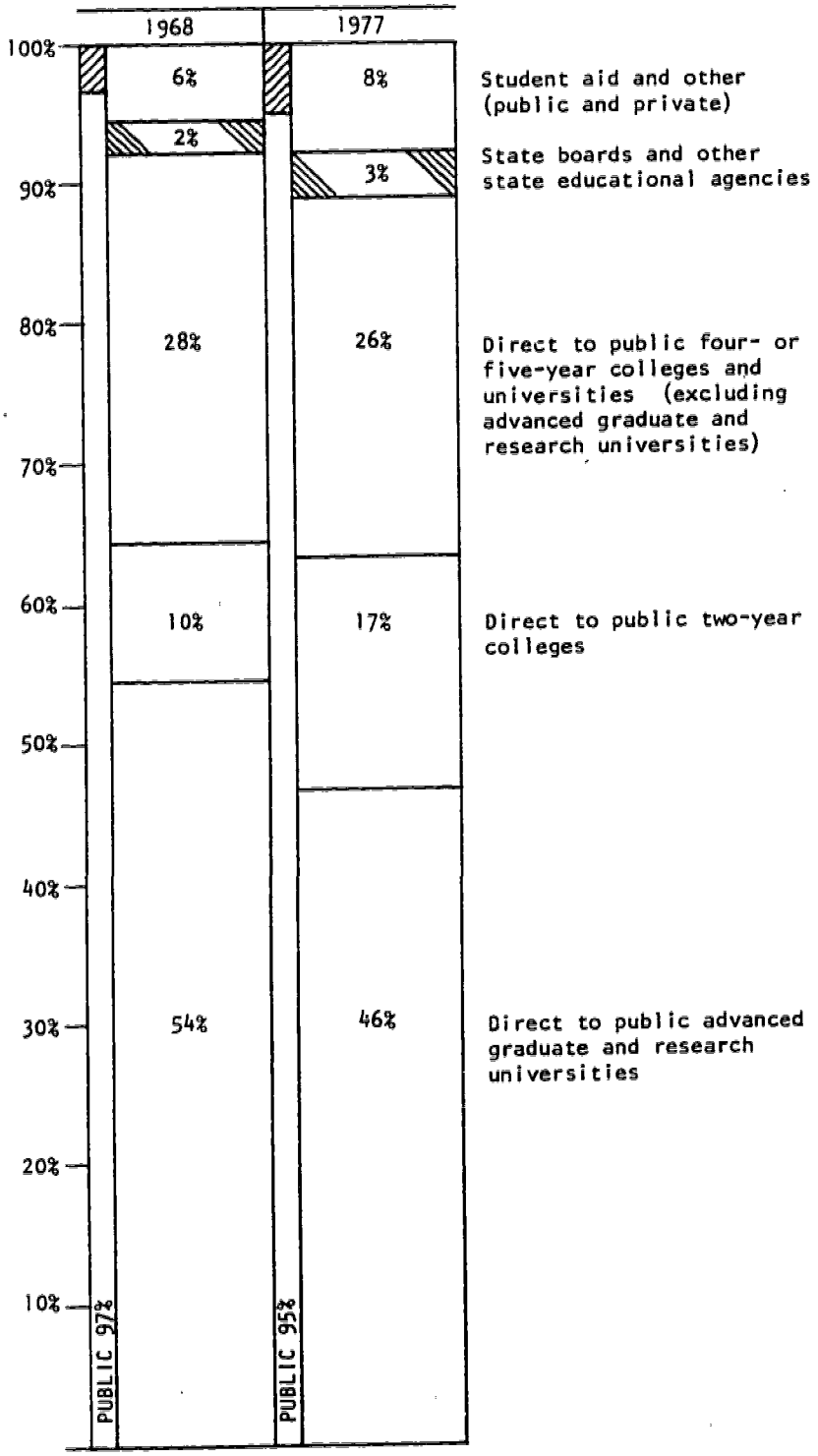


Table 8. Percentage of Total Appropriations for Higher Education Allotted Directly to Public Institutions, 1968-1977, by Type of Institution and Region

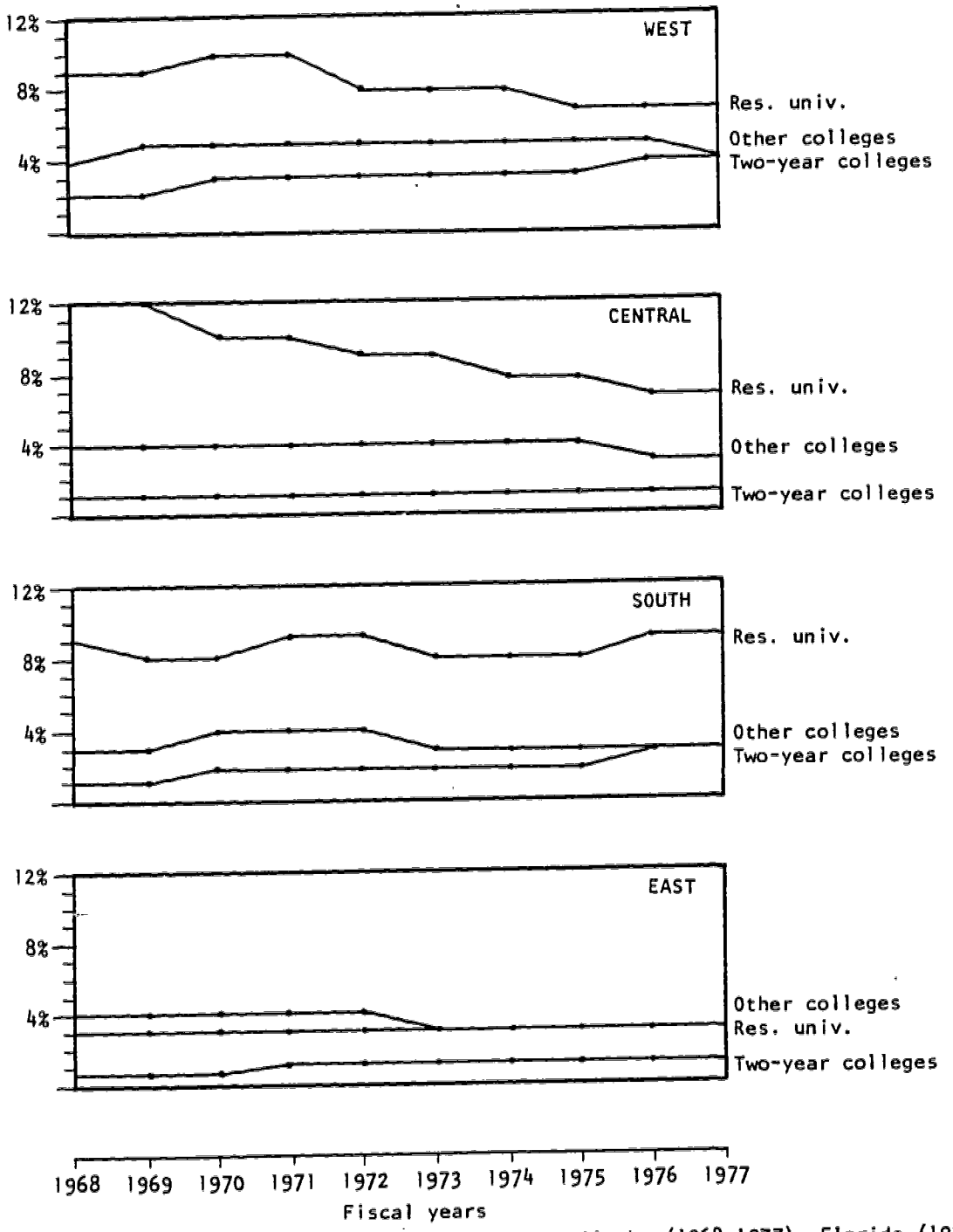
Region	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977
Advanced graduate & research universities										
West (N=12, 11)	54	53	51	50	48	46	45	44	43	43
Central (N=13, 12)	65	64	61	59	57	55	54	54	54	53
South (N=15)	56	54	52	52	51	*	51	50	49	49
East (N=9, 8)	36	35	34	34	34	34	33	32	33	33
United States (N=48,47)	54	53	50	50	48	48	47	46	46	46
Other universities and colleges										
West (N=11, 10)	29	29	30	29	29	30	29	28	29	28
Central (N=13, 12)	24	25	25	27	27	27	27	27	25	25
South (N=15, 14)	23	23	23	24	23	22	21	22	20	20
East (N=9, 8)	39	40	39	38	38	36	36	36	34	32
United States (N=47, 46)	28	29	29	29	29	28	27	28	26	26
Two-year colleges										
West (N=12, 11)	14	14	16	18	19	18	21	21	23	24
Central (N=12)	6	6	8	8	9	9	10	10	12	12
South (N=15)	11	12	13	14	14	15	16	16	16	16
East (N=9, 8)	7	6	7	9	10	11	11	11	12	12
United States (N=48-46)	10	10	11	12	13	14	15	15	16	17

* Data not comparable

Note: No information from Alaska. Partial data shown for Florida, New Hampshire, Oregon, South Dakota, and Utah.

Graph 7

Percentage of General Revenue Appropriated Directly to Public Institutions: Advanced Graduate and Research Universities, Other Universities and Colleges, and Two-Year Colleges, 1968-1977, by Region



Note: States for which fiscal year data are missing: Alaska (1968-1977), Florida (1973), New Hampshire (1973-1977), Oregon (1968-1972), and Utah (1976, 1977).

universities in the central states dropped from 12 to 8 percent of state general revenue in the ten years covered, and their percentage of total appropriations to higher education also dropped from 65 to 53 percent in direct appropriations. In particular, Indiana and Illinois showed large drops in the proportion of the total appropriations to higher education allotted to universities.

Graph 6 showed that the percentage of all appropriations to higher education given directly to state coordinating and governing boards and to other state educational agencies in fiscal year 1977 was 3 percent. The percentage that went to coordinating agencies was extremely small--less than 1 percent--although it gradually increased from 1968. The percentages shown in Table 9 were reported in decimals

Table 9. Percentage of Total Appropriations for Higher Education Allotted to State Coordinating or Statewide Governing Boards of Public Higher Education, 1968-1977, by Region

Region		1968	1969	1970	1971	1972	1973	1974	1975	1976	1977
West	(N=12)	.09	.08	.09	.09	.12	.29	.31	.34	.25	.26
Central	(N=13)	.17	.16	.17	.20	.19	.22	.26	.32	.27	.25
South	(N=15)	.37	.44	.49	.42	.54	.54	.51	.60	.61	.60
East	(N=9)	.46	.44	.51	.68	.57	.53	.50	.48	.44	.44
United States	(N=49)	.27	.27	.31	.34	.36	.39	.40	.44	.40	.40

Note: No information from Alaska. Partial data included for New Hampshire, Oklahoma and Utah.

This table does not include the appropriations to other governing boards or agencies of higher education which have approximated between 2 and 3 percent of the total appropriations nationally from 1968 to 1977.

because they were so small. Coordinating agencies and governing boards in the southern and eastern regions enjoyed a greater proportion of the total appropriations than did those in the central and western regions.

The percentage for fiscal year 1977 was greater than 1 percent in a few states: Idaho, Kentucky, Montana, New Jersey, and Tennessee. Twelve of the states for which we had 1977 data reported that there had been no appropriations to such agencies or boards in 1968.

Appropriations to the Public Sector When Adjusted for Inflation

In actual dollars appropriated for all of public higher education in the United States, the overall percentage change was 200, or three times as great in fiscal year 1977 as it was in 1968 (Table 10). Since nearly all state appropriations to higher education go to the public sector, the regional relationships shown here are similar to those shown in Table 4 for all higher education. Although the southern states showed an extremely high rate of increase, in both 1968 and 1977 they had lower average appropriations in actual dollars than the states in the other three regions. In contrast, the central states, which shared the lowest increase with the eastern states during the same period, also appropriated more for public higher education in both 1968 and 1977, on the average, than either the western or southern states. The eastern states maintained the highest average across states in those two fiscal years.

The regional figures obscure the cuts in appropriations to public higher education in some states during the period of our surveys.

Table 10. Percentage Change in Total State Appropriations to Public Higher Education in Unadjusted Dollars, 1968-1977, by Region

Region	Percentage change from fiscal year 1968 to									1968 to 1972	1973 to 1977
	1969	1970	1971	1972	1973	1974	1975	1976	1977		
West (N=11)	17	40	56	61	80	115	144	179	221	61	78
Central (N=13)	14	33	48	63	78	97	116	144	166	63	49
South (N=15)	15	36	57	79	101	139	167	219	246	79	72
East (N=8)	20	42	60	81	92	114	142	157	166	81	38
United States (N=47)	16	37	55	70	87	116	141	174	200	70	60

Region	Percentage change from preceding year								
	1968 1969	1969 1970	1970 1971	1971 1972	1972 1973	1973 1974	1974 1975	1975 1976	1976 1977
West (N=11)	17	20	10	3	11	19	13	14	15
Central (N=13)	14	16	11	9	9	10	9	12	9
South (N=15)	15	17	15	14	11	18	11	19	8
East (N=8)	20	18	12	13	6	11	13	6	3
United States (N=47)	16	17	12	10	9	15	11	13	9

Note: Alaska, New Hampshire and Utah are not included because data were not provided for all years.

For any one year, no more than four states showed a drop, yet 14 states reported at least one reduction between 1968 and 1977 (Appendix D-13). Three states twice reduced from the preceding year the appropriation to the public sector of higher education. Although these drops did not indicate a general trend, and were likely caused by unique problems within each state, at least one of the fiscal years 1972, 1973, 1976, and 1977 represented a real loss in appropriations for the public sector in 13 of the 14 states. Nevertheless, in every state except Hawaii, appropriations for the following year rose above that of the year preceding the drop.

Of the 18 times that a reduction in appropriations was reported, only four occurred in a fiscal year in which state general revenues were also reported to have dropped (Florida, 1976; Louisiana, 1970; New Jersey, 1976; and Washington, 1972). In Louisiana and New York, appropriations were reduced in 1973 following an earlier reduction in revenue. In the main, most of the states in which public higher education appropriations were cut, the drop in appropriation did not coincide with a drop in revenues. Similarly, a loss in revenues did not appear to affect drastically the appropriations for public higher education in most states (at least not at the level of the generality of these data).

To determine the extent to which inflation of the dollar has really affected public higher education, the original figures provided by each state (and upon which Table 10 is based) were adjusted to "constant dollar" figures, using a higher education price index with

a base year of 1967 (Halstead, 1977). Table 11 reveals a dramatic difference in percentage changes when inflation was taken into account. In buying power, appropriations to public higher education did not triple in unadjusted dollars, but rather, were less than twice as great as they were in 1968. Nevertheless, they increased, even in constant dollars. In 11 states they more than doubled (Appendix D-14). Among other things, did that increase represent compensation for increases in enrollments, or is higher education actually a fatter cat than it seems to be, and as some legislative and executive budget staffs seem to think?

Even with appropriations adjusted for inflation, every state increased its appropriations to public higher education since 1968 from a low percentage change of 5 in Vermont to a high of 182 percent in Nebraska. When we look at the percentage change since 1973, however, 5 states had less purchasing power in 1977 than they did four years earlier, and another 11 changed no more than 12 percent:

Vermont	-10%	Illinois	0%	Michigan	2%
Connecticut	-7	New Jersey	0	New York	5
Maine	-6	Florida	1	Georgia	6
Maryland	-1	Hawaii	1	West Virginia	7
Wisconsin	-1	Massachusetts	1	Pennsylvania	12
				Rhode Island	12

If we look at direct appropriations to public colleges and universities, which may be more reliable data, the lowest third of the states look somewhat different in their 1977 percentage change from 1973:

Table 11. Percentage Change in Total State Appropriations to Public Higher Education in Constant Dollars, 1968-1977, by Region

Region	Percentage change from fiscal year 1968 to 1969	1970	1971	1972	1973	1974	1975	1976	1977	1968 to 1972	1973 to 1977
West (N=11)	9	23	28	26	33	49	56	67	80	26	35
Central (N=13)	7	16	22	27	32	36	37	53	58	27	20
South (N=15)	8	19	29	40	49	65	70	90	94	40	30
East (N=8)	12	24	31	41	42	48	54	54	49	41	5
United States (N=47)	9	20	27	33	39	49	54	66	71	33	23

Region	Percentage change from preceding year 1968 1969	1969 1970	1970 1971	1971 1972	1972 1973	1973 1974	1974 1975	1975 1976	1976 1977
West (N=11)	9	12	4	-2	6	11	4	7	8
Central (N=13)	7	8	4	3	3	3	0	11	3
South (N=15)	8	10	8	8	6	11	3	11	1
East (N=8)	12	10	5	7	0	4	4	-0	-2
United States (N=47)	9	10	5	4	4	7	2	8	2

0 indicates no change or positive change smaller than 1 percent
-0 indicates negative change smaller than 1 percent

Note: Alaska, New Hampshire and Utah are not included because data were not provided for all years.

Connecticut	-7%	Florida	1%	Missouri	6%
Maine	-7	Hawaii	1	South Dakota	7
Vermont	-7	Illinois	1	West Virginia	7
New York	-6	New Jersey	1		
Wisconsin	-5	Massachusetts	2		
Maryland	-2	Michigan	2		

Of the 47 states for which complete data were available, 42 showed a drop in their appropriations to public higher education when adjustments for inflation were made for at least one year during the survey period. Buying power dropped in 30 states for one or two of the last three fiscal years covered in this report (Appendix D-14).

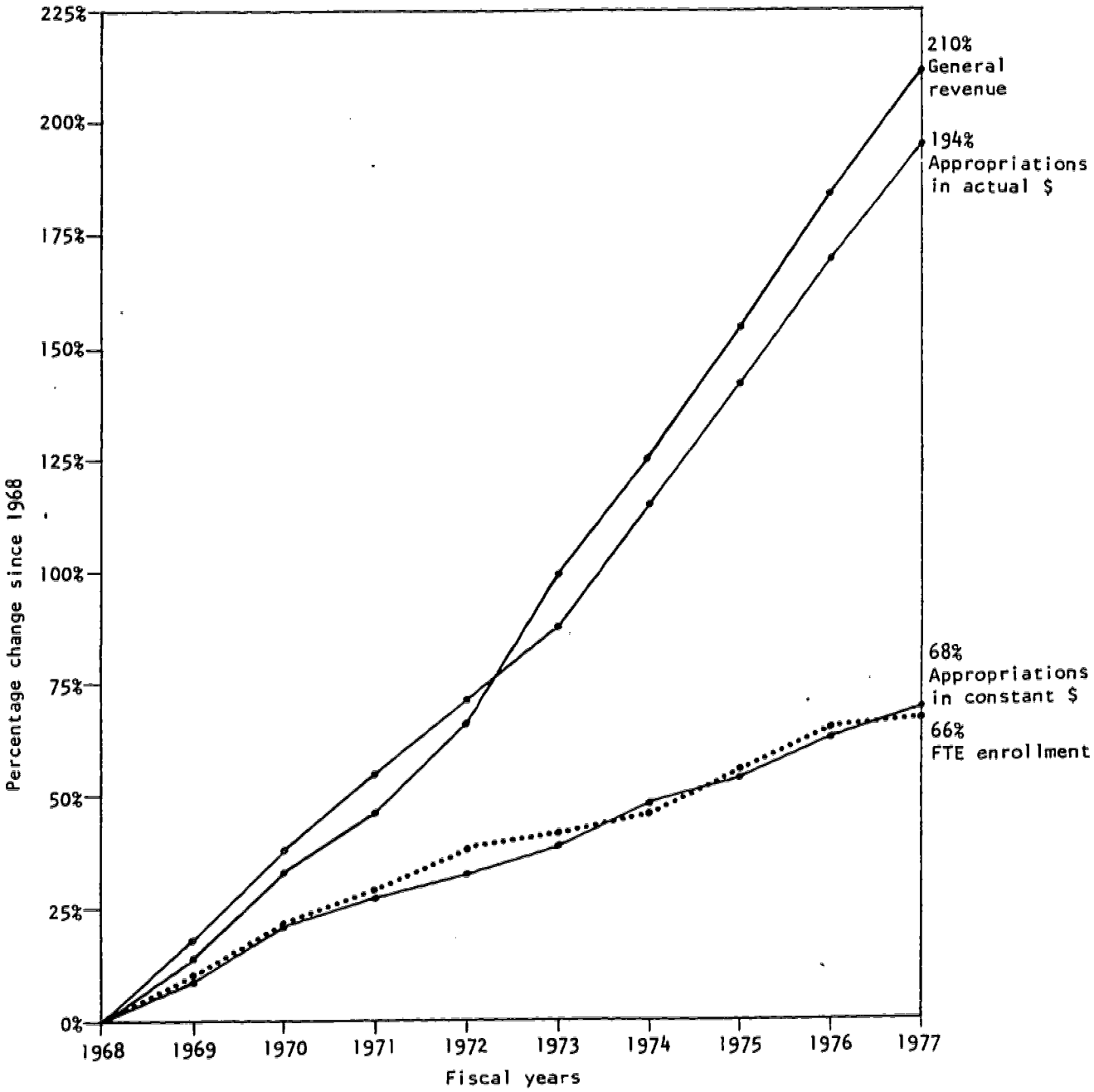
Relationship Between Constant Dollar Appropriations and Enrollments in the Public Sector

For the nation as a whole (note states excluded in Table 12), the rate of increase in constant dollar appropriations and FTE enrollments was remarkably similar. The rate is shown in Graph 8 along with the percentage changes of appropriations and of state general revenues, in unadjusted dollars, since 1968.

Considerable differences appear among the regions. The southern states, with the highest rate of growth in enrollment during the survey period (93%), also had the highest rate of increase in constant dollars (86%). But until fiscal year 1975, the rate of increase in constant dollars exceeded that in enrollments. In the central region, where enrollments changed the least, constant dollar appropriations grew almost twice as fast as enrollments. The east experienced about the same percentage change in enrollments as the west from 1968 to 1977 (78%), but showed the least amount of change

Graph 8

Percentage Change in State General Revenue, Appropriations to All Public Higher Education (Actual Dollars and Constant Dollars), and FTE Enrollments in Public Higher Education, 1968-1977, in 43 States



Note: Alaska, Idaho, Montana, New Hampshire, Texas, Utah, and Wyoming are not included because data were not provided for all years.

Table 12. Percentage Change in Total State Appropriations in Constant Dollars and FTE Enrollment in Public Higher Education, 1968-1977, by Region

Region	Percentage change from fiscal year 1968 to:									1968 to 1972	1973 to 1977
	1969	1970	1971	1972	1973	1974	1975	1976	1977		
West (N=8)											
Constant $	9	23	29	26	34	50	57	67	81	26	35
Enrollment	10	20	32	39	43	51	61	70	77	39	23
Central (N=12)											
Constant $	8	19	25	29	34	39	41	56	62	29	20
Enrollment	10	20	27	31	31	29	37	36	36	31	3
South (N=14)											
Constant $	10	19	32	41	50	65	73	83	86	41	23
Enrollment	9	17	27	37	42	48	56	92	93	37	35
East (N=8)											
Constant $	12	24	31	41	42	48	54	54	49	41	5
Enrollment	12	23	40	52	60	70	77	86	78	52	11
United States											
Constant $	10	21	29	34	39	50	55	64	69	34	21
Enrollment (N=42)	10	20	31	38	42	46	55	66	67	38	17

Region	Percentage change from preceding year								
	1968 1969	1969 1970	1970 1971	1971 1972	1972 1973	1973 1974	1974 1975	1975 1976	1976 1977
West (N=8)									
Constant $	9	12	4	-2	6	12	4	6	8
Enrollment	10	9	10	4	3	5	6	5	4
Central (N=12)									
Constant $	8	10	4	3	3	3	1	10	3
Enrollment	10	9	5	2	0	-1	5	-0	0
South (N=14)									
Constant $	10	8	10	6	6	9	4	5	1
Enrollment	9	6	8	7	3	4	5	20	0
East (N=8)									
Constant $	12	10	5	7	0	4	4	-0	-2
Enrollment	12	9	13	8	4	6	4	4	-3
United States									
Constant $	10	10	6	3	4	7	3	5	3
Enrollment (N=42)	10	8	9	5	2	3	5	7	0

0 indicates no change or positive change smaller than 1 percent
-0 indicates negative change smaller than 1 percent

Note: Alaska, Idaho, Indiana, Montana, New Hampshire, Texas, Utah, and Wyoming are not included because data were not provided for all years.

(49%) in constant dollars compared to the other three regions. Enrollment growth in the east consistently outpaced constant dollar growth from 1971 to 1977. The east was the only region with a drop in enrollments (1977) and a similar drop in constant dollars. The percentage change in FTE enrollments in public higher education in each state appears in Appendix D-15.

Each state has its own unique pattern of appropriating funds for higher education, and the variation among states in the percentage changes from 1973 to 1977 in enrollments and in direct state appropriations to public institutions is shown in Table 13. Appendix D-16 shows the percentage changes since 1968 in direct appropriations to public institutions in unadjusted and constant dollars by type of institution and by state. Percentage changes since 1968 in FTE enrollments by type of public institution and by state appear in Appendix D-17.

Even in constant dollars, added funds often bear little relationship to added enrollment. In some cases enrollments are up but dollars down; sometimes the reverse is true. Thirty-four of the 45 states for which data were available had an increase in enrollments in their public institutions as well as an increase in constant dollar appropriations. But in only 19 of those 34 states were their constant dollar appropriations increased at a greater rate than the change in their enrollments. In 13 states the rate of growth in enrollments was greater than in their purchasing power appropriations; in two states the percentage change was the same. In a few states the changes were in opposite directions: either enrollments in public institutions

Table 13. Percentage Change in Direct State Appropriations in Constant Dollars and FTE Enrollment in Public Higher Education, 1973 to 1977, by Type of Institution and State

States	Total		Advanced graduate & research U.		Other universities & colleges		Two-year colleges	
	Constant $	FTE enrollment	Constant $	FTE enrollment	Constant $	FTE enrollment	Constant $	FTE enrollment
Alabama	54	25	35	8	101	50	64	28
Arizona	22	30	22	11	6	17	31	62
Arkansas	52	22	41	7	47	11	240	208
California	44	27	35	14	24	5	102	39
Colorado	47	20	69	-0	22	41	27	41
Connecticut	-7	6	-4	3	-11	-0	-6	19
Delaware	27	42	12	7	52	6	65	329
Florida	no data		no data		no data		10	185
Georgia	9	37	3	25	12	33	40	83
Hawaii	1	8	-8	-8	87	15	39	38
Idaho	26	9	24	9	25	6	61	26
Illinois	1	9	-3	4	-4	11	33	15
Indiana	8	10	2	12	10	-2	121	90
Iowa	34	-3	28	1	39	-2	57	-13
Kansas	39	5	38	9	27	-4	146	12
Kentucky	16	20	21	22	12	14	7	36
Louisiana	51	-1	69	-8	5	12	51	30
Maine	-7	12	not app.		-7	12	not app.	
Maryland	-2	18	-10	-5	2	34	17	39
Massachusetts	2	8	18	18	-14	-2	-2	13
Michigan	2	-9	no data		no data		32	-18
Minnesota	12	2	15	6	5	-6	13	12
Mississippi	20	20	21	12	5	12	42	35
Missouri	6	-0	-0	-1	14	-14	24	24
Montana	13	9	18	5	3	16	15	41
Nebraska	57	40	89	100	-28	-45	70	111
Nevada	48	34	not app.		24	7	479	206
New Jersey	1	14	2	-5	4	2	-5	44
New Mexico	30	9	36	14	0	-24	83	66
New York	-6	8	-2	13	-15	7	20	7
N. Carolina	54	16	49	15	55	18	60	13
North Dakota	39	-0	not app.		44	-5	17	14
Ohio	21	10	12	1	17	1	78	45
Oklahoma	40	19	29	12	40	5	107	66
Oregon	27	17	17	-1	34	-4	43	49

Table 13 (continued).

States	Total		Advanced graduate & research U.		Other universities & colleges		Two-year colleges	
	Con-tant $	FTE enroll-ment	Con-stant $	FTE enroll-ment	Con-stant $	FTE enroll-ment	Con-stant $	FTE enroll-ment
Pennsylvania	15	14	3	13	27	3	52	34
Rhode Island	12	47	4	29	22	31	23	122
S. Carolina	31	32	29	17	48	87	-35	-32
South Dakota	7	0	14	0	-8	0	not app.	
Tennessee	14	18	12	7	3	15	45	112
Texas	49	no data	45	23	34	1	78	no data
Vermont	-7	17	-10	13	-1	25	1	22
Virginia	28	28	23	16	34	25	40	54
Washington	22	10	22	4	12	-2	29	18
West Virginia	7	20	3	25	7	7	54	103
Wisconsin	-5	3	0	5	-11	1	-18	19
Wyoming	46	26	36	1	not app.		86	61

0 indicates no change or positive change smaller than 1 percent
-0 indicates negative change smaller than 1 percent

Note: Alaska, New Hampshire, and Utah are not included because data were not provided for all years

dropped and their appropriations in constant dollars increased (5 states), or enrollments increased and they received less from the state when appropriations were adjusted for inflation. Table 14 shows the number of states that fall into these categories. All-in-all, the rate of growth of constant dollar appropriations was greater than enrollments in 26 states, 19 increased their enrollments more than their appropriations, and the increase in percentage change was the same in two states.

In states where adjusted appropriations changed more than enrollments in a positive direction, for the majority the difference between the two rates was greater than ten percentage points. In contrast, where enrollments changed more than dollars, the gap was more likely to be 10 percent or less. These trends were generally positive in many states, but we should not ignore the fact that the FTE figure is composed of about half full-time students, with the other half composed of an aggregation of part-time students which in sheer numbers might be three or four times the number of full-time students. Such students create costs related to counseling, admission, and registration that increase with the number of individuals--not just with full-time-equivalents. This is only one way in which reporting enrollment growth in terms of "full-time equivalents" underestimates both the actual numbers enrolled and the growth in costs of instruction and other services.

Briefly, let us look at the states where drops occurred in state support, either in actual dollars or constant dollars, and the enrollment changes that took place during the years of the surveys. Earlier we saw that of the 18 times (in a total of 14 states) that there was a drop in actual dollar appropriations for public higher education, only four coincided with a drop in revenues. In those same 18 cases only three coincided with a drop in FTE enrollments the same year (Alabama 1977, Maine 1977, and New Jersey 1976). If we look at direct appropriations to public institutions, we can add New York's fiscal year 1977, although it is not included in the 18 cases. In

Table 14. Relationship of Percentage Changes Between FTE Enrollments and Constant Dollars Appropriated Directly to Public Higher Education, by Type of Institution (reported in number of states)

Relationship of percentage change between constant dollar appropriations and FTE enrollment	1968-1977 Total	1973-1977 Total	1973-1977 Adv. grad. univ.	1973-1977 Other u. & coll.	1973-1977 Two-year coll.
States with an increase in both appropriations and enrollment	40	34	31	26	37
Appropriation greater than enrollment	25	19	22	14	21
by 1 to 10 percentage points	5	5	5	2	4
by 11 to 20 percentage points	5	7	8	4	5
by more than 20 percentage points	15	7	9	8	12
Enrollment greater than appropriation	14	13	8	11	15
by 1 to 10 percentage points	3	8	4	4	1
by 11 to 20 percentage points	3	3	1	4	2
by more than 20 percentage points	8	2	3	3	12
Appropriation same as enrollment	1	2	1	1	1
States with an increase in appropriations and a decrease in enrollment	0	5	4	9	2
States with an increase in enrollment and a decrease in appropriations	1	6	4	6	4
States with a decrease in both appropriations and enrollment	0	0	3	3	1
Appropriation greater than enrollment	0	0	1	2	1
Enrollment greater than appropriation	0	0	1	1	0
Appropriation same as enrollment	0	0	1	0	0
States with missing data or data not applicable	9	5	8	6	6

Connecticut, one other drop in appropriations (in 1976) was followed by a drop in enrollments the next year. Although decreases in enrollments did occur in other years in most of the 14 states, the drop in actual dollars and the drop in enrollment were separated by at least two years, and in some cases by five or six years, so that appropriated amounts and enrollments appear to have been either unrelated, or at least not directly related.

Coincidence of lower enrollment with a loss in buying power of the state appropriations occurred once in 13 states and twice in two states out of the 35 showing a drop in FTE enrollment at some time since 1968. That there is a direct effect on enrollments when appropriations are cut, or that reduced enrollments result in reduced appropriations cannot be supported by these data for states where reductions occurred. However, since drops in enrollments are a relatively recent phenomenon, public policy on financing institutions may not have caught up with the reality.

Nevertheless, as shown in Table 15, a general relationship between changes in constant dollar appropriations and in FTE enrollment may exist: About two out of three of the lower half of the states that changed negatively or very little in their enrollments from 1973 to 1977 also fell into the lower half of the states ranked by change in amount of direct appropriations to public higher education (in constant dollars). A similar relationship is seen in the majority of states ranking in the upper half on these two variables.

Table 15. States Ranked by Percentage Change Between FTE Enrollments and Direct Appropriations to Public Higher Education in Constant Dollars, 1973 and 1977

Percentage change in direct appropriations in constant dollars	Percentage change in FTE enrollments: Highest 11 states (47% to 25%)	High 11 states (22% to 16%)	Low 12 states (14% to 8.5%)	Lowest 11 states (8.4% to -9%)
Highest 11 states (57% to 39.5%)	5 Alabama California Nebraska Nevada Wyoming	4 Arkansas Colorado North Carolina Oklahoma	0	2 Louisiana North Dakota
High 11 states (39.5% to 21%)	4 Arizona Delaware South Carolina Virginia	1 Oregon	4 Idaho New Mexico Ohio Washington	2 Iowa Kansas
Low 12 states (20% to 6%)	2 Georgia Rhode Island	4 Kentucky Mississippi Tennessee West Virginia	3 Indiana Montana Pennsylvania	3 Minnesota Missouri South Dakota
Lowest 11 states (2% to -7%)	0	2 Maryland Vermont	5 Hawaii Illinois Maine Massachusetts New Jersey	4 Connecticut Michigan New York Wisconsin

Note: Alaska, Florida, New Hampshire, Texas and Utah are not included because data were not provided for all years.

Changes in Portion of Revenue Appropriated Directly to the Three Public Sectors

The states (with the exceptions of Idaho, Ohio, and New York) traditionally have given a greater proportion of state revenue to their research universities than to their state colleges and universities, but that gap is narrowing. The difference in direct appropriations as a percent of general revenue between the two types of institutions in 1968 was 10 percent or more in 11 states. By 1977, this was true of only five states. In the 41 states which could provide separate data for what had been appropriated for state research universities and for other senior institutions in fiscal years 1968 and 1977, 27 had narrowed the margin of direct appropriations between the two segments, and the difference remained the same in another seven. In only seven states did the difference increase in favor of the state research universities.

Earlier sections of this report showed that the states have gradually taken on more financial responsibility for community colleges, although in more than half the states that support represented only 1 percent or 2 percent of state general revenue. While most states increased their support, even in constant dollars, to higher education as a whole, and directly to their public institutions, in half the states a downturn occurred in the percentage of state revenues appropriated to higher education. Of the 42 states shown in Table 16, half actually increased the percentage of general revenue appropriated to all higher education from 1973 to 1977. In only eight states did the percentage of general revenue increase in all three segments as a

Table 16. Difference in Percent of General Revenue Appropriated Directly to Public Higher Education, 1973 to 1977, by Change in Percent of Revenue Appropriated for All Higher Education, by Type of Institution and State

States by change in the share of revenue appropriated for all higher education and by type of senior institution appearing to be favored by the state appropriations	Difference in percent of general revenue appropriated to all higher education 1973-1977	Appropriations made directly to public institutions					
		Percent of general revenue 1977			Difference in percent of general revenue 1973-1977		
		Adv. grad. univ.	Other u. & coll.	Two-year coll.	Adv. grad. univ.	Other u. & coll.	Two-year coll.
ALL HIGHER EDUCATION INCREASED AS PERCENTAGE OF GENERAL REVENUE							
Univ. more than other u. & coll.[a]							
Texas	6.6	14	4	5	2.0[c]	.3	1.5
Louisiana	5.3	9	2	1	4.5	.5[c]	.3
Colorado	5.2	11	4	3	3.6	.3[c]	.3
S. Dakota	3.6	20	7	NA	1.6	-1.2[d]	NA
Nebraska	2.8	24	4	3	6.9	-3.3[d]	.7
Mississippi	1.4	11	4	3	.9	- .2	.7
New York	.6	2	4	1	- .1[e]	- .9[d]	.2
Other u. & coll. more than univ.[a]							
Alabama	4.3	11	6	3	1.3	2.2[c]	.8
Indiana	2.0	13	7	1	- .9[c]	.1	.7
Pennsylvania	1.2	5	4	1	.2[c]	.8	.3
Rhode Island	.6	6	3	2	- .1	.4[c]	.3
Univ. & other u. & coll. about same[b]							
North Carolina	5.7	7	5	6	1.0	.9[c]	1.2
Arkansas	3.7	9	8	2	1.1	1.2[c]	1.1
Delaware	2.0	5	1	2[f]	.3	.4	.9
South Carolina	2.0	10	4	0[f]	.8	.7[c]	- .2
Virginia	.6	10	3	4	- .1	.2[c]	.4
ALL HIGHER EDUCATION REMAINED ABOUT THE SAME PERCENTAGE OF GENERAL REVENUE							
Univ. more than other u. & coll.[a]							
Massachusetts	- .3	4	2	1	.4[c]	- .5[d]	- .1
Other u. & coll. more than univ.[a]							
Iowa	.3	13	2	3	- .8[c]	.0	.4
Univ. & other u. & coll. about same[b]							
Idaho	.4	11	12	1	- .4[c]	- .4	.2
Ohio	.3	4	6	2	- .3	- .1	.6
Tennessee	.2	12	3	2	- .0	- .3[c]	.4
Georgia	.1	7	3	1	- .2	.2[c]	.4
Vermont	- .1	7	2	1	- .1[d]	.2[e]	.1
California	- .3	6	5	4	- .5[c]	- .9	1.3

Table 16 (continued).

States by change in the share of revenue appropriated for all higher education and by type of senior institution apperaring to be favored by the state appropriations	Difference in percent of general revenue appro-priated to all higher education 1973-1977	Appropriations made directly to public institutions					
		Percent of general revenue 1977			Difference in percent of general revenue 1973-1977		
		Adv. grad. univ.	Other u. & coll.	Two-year coll.	Adv. grad. univ	Other u. & coll.	Two-year coll.
ALL HIGHER EDUCATION DECREASED AS PERCENTAGE OF GENERAL REVENUE							
Univ. more than other u. & coll.[a]							
Kentucky	-1.0	9	8	1	- .4[c]	- .9	.2
Wisconsin	-5.7	8	7	1	-2.5[c]	-3.4[d]	- .3
Other u. & coll. more than univ.[a]							
Oklahoma	-1.2	14	6	4	-2.1[c]	- .4	1.0
Maryland	-1.3	6	3	2	-1.4[d]	- .2[c]	.1
Illinois	-1.5	8	2	2	-1.3[d]	- .3[e]	.4
Missouri	-1.5	9	5	2	-1.6[e]	- .3	.3
Minnesota	-1.6	6	2	1	-1.1[c]	- .6	- .2
Hawaii	-2.3	9	1	3	-2.7[d]	.2[c]	.4
Michigan	-3.5	6	2	2	-2.4	-1.0	- .1
Oregon	-6.7	11	7	5	-3.0[c]	- .9	- .3
Univ. & other u. & coll. about same[b]							
Arizona	-1.0	14	2	4	- .6	- .4[c]	.1
Washington	-1.3	9	3	6	- .8[c]	- .5	- .1
Montana	-1.4	15	5	1	- .5	- .9[c]	- .0
Connecticut	-1.5	4	2	1	- .7[e]	- .5[d]	- .3[d]
New Mexico	-1.5	11	2	1	- .7[c]	-1.1	.2
New Jersey	-1.8	4	3	1	- .7	- .4[c]	- .3
Kansas	-2.0	15	6	1	-1.5[c]	-1.2	.5
West Virginia	-2.0	8	7	1	-1.4[c]	-1.0	.2

[a]Two segments differ by at least .5 of one percent

[b]Two segments differ by less than 15 of one percent

[c]Greater increase in enrollment or less of a decrease, 1973-1977

[d]Drop in constant dollar appropriation, 1973-1977

[e]Both c and d

[f]Less than one percent

Note: Alaska, Florida, Maine, Nevada, New Hampshire, North Dakota, Utah, and Wyoming are not included because data were not provided or state universities and colleges were combined.

Whole percents were rounded from decimals.

direct appropriation. Of the 21 states in which the total portion of the general revenue appropriated for higher education decreased, in only nine states did the percentage of general revenue decrease in all three segments. Appendix Table D-18 shows the percentage of general revenue appropriated directly to public advanced graduate and research universities, other universities and colleges, and community colleges from 1968 to 1977, by state.

Table 16 shows the states arranged by the nature of the change in the proportion of general revenue appropriations to all of higher education from 1973 to 1977 (an increase of at least .5 of one percent, a change of ±.4 of one percent or less, or a decrease of at least .5 of one percent). The table also shows which of the two types of senior institutions appears to be favored as determined by the change in its proportion of the revenue. Decimals are shown in this table because of the magnitude of dollars--.1 of one percent of the general revenue taken in by 26 states in fiscal year 1977 represented over $1,000,000.

Excluding the states where an increased share of revenues went to all three segments, generally the trend in most of the 34 states was a decrease in the proportion of revenue allotted to research universities (29 states), closely followed by the other state colleges and universities (26 states).

Within the 16 states where the percentage of revenue appropriated to all of higher education increased, 12 states appear to have favored the research universities rather than the state colleges, or

to have treated them about the same way. In three states the drop in percentage of general revenue for other state colleges and universities represented a real drop in constant dollars, at the same time that the percentage of revenue for the university segment increased. It was among these states that the percentage of revenue appropriated to other state agencies also increased, as did appropriations to student aid, although to a lesser degree.

Among the eight states where the percentage of general revenue to all of higher education did not change greatly between 1973 and 1977, the majority generally maintained the status quo, slightly increasing the percentage to the community colleges while slightly decreasing the share to both the research universities and the other state senior institutions.

In half of the 18 states where all of higher education received a smaller share of revenues in 1977, all three segments were affected. In all but one of the 18, the percentage dropped in both the research universities and the other public senior institutions; the drop in percent was either about the same for the two segments, or was greater for the research universities than for the state colleges and other universities. In five states the drop in percent constituted a real reduction in buying power for one or both types of senior institutions.

The limitations of these data do not allow any conclusions to be drawn about comparative gains or losses between the two types of senior institutions since other factors affecting changes in funding

are not known. Further, differences occur when data are analyzed by percentage change rather than by a difference in percent of general revenue. A simple, but startling illustration is shown in Table 17. When the relationships between state appropriations made directly to public advanced graduate universities and to other public universities and colleges are compared using data from Table 13 (percentage change analysis) and Table 16 (change in percent of general revenue analysis), the sector with the greatest positive percentage change from 1973 to 1977 also showed the greater increase in percent of revenue for most states, or less of a negative percent than would have been expected. But, because these methods use different bases for computation, the conclusion from one base appears to contradict the findings from the other. In the six states shown in Table 17,

Table 17. Conflict in Source of Data Analyzed: Difference Between Percent of General Revenue and Percentage Change in Direct Appropriations to Public Advanced Graduate and Research Universities and to Other Public Universities and Colleges in Six Selected States, 1973 and 1977

	Appropriations made directly to public institutions			
	Difference in percent of general revenue		Percentage change in constant dollars	
States	Advanced graduate univ.	Other univ. & colleges	Advanced graduate univ.	Other univ. & colleges
Arizona	-.6	-.4	22	6
Connecticut	-.7	-.5	-4	-11
Kansas	-1.5	-1.2	38	27
Michigan	-2.4	-1.0	1	-13
Minnesota	-1.1	-.6	15	5
Washington	-.8	-.5	22	12

the advanced graduate universities dropped more than the other universities and colleges in their percentage of general revenue, but the percentage change for the same two years shows greater increases for the advanced graduate universities than for the other state colleges and universities. (The same relationship holds for percentage change in actual dollars, of course, with positive percents in all six states.)

The Private Sector

As was seen in Graph 6, from fiscal year 1968 to 1977 the private sector increased its share of all state appropriations made to higher education from 3 percent to 5 percent, nationally. All four geographic regions also showed an increase, as did most of the individual states (Table 18). However, just as for the appropriations to the public sector, the appropriations to the private sector actually increased, even in the states that dropped in the share to private education, such as Pennsylvania. From 1973 to 1977, appropriations to the private sector more than doubled for half of the states listed in Table 18. In constant dollars, appropriations to the private sector in fiscal year 1977 were lower than in 1973 in only four states where the percentage change in buying power in the public sector was also uncommonly low:

	Total private	Total public
New Jersey	-13%	Less than +1%
Illinois	-3	Less than +1%
Pennsylvania	-3	+12%
Vermont	-1	-10

Table 18. Percentage of Total Appropriations for All Higher Education Allotted to the Private Sector, 1968-1977, by State

States	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977
Alabama	1	1	1	1	1	1	1	1	1	1
California	1	1	1	1	2	2	2	2	2	2
Connecticut	1	1	1	3	2	2	3	3	4	3
Delaware	0	0	0	0	0	0	0	0	+	+
Idaho	0	0	0	0	0	0	0	+	+	+
Illinois	3	6	6	7	10	10	10	9	10	10
Indiana	0								3	3
Iowa	+	+	2	3	4	3	4	4	5	5
Kansas	1	1	1	1	1	2	3	3	3	3
Kentucky	2	4	3	+	+	+	+	+	+	+
Louisiana	0	0	0	0	0	0	0	0	+	+
Maine	0	0	0	0	0	1	1	1	1	1
Maryland					1	1	2	2	2	3
Michigan	2	2	2	2	2	2	2	3	3	3
Minnesota	+	+	+	+	1	2	2	3	3	4
Missouri	0	0	0	0	0	+	2	1	1	1
New Jersey						8	7	7	6	7
New York	6	5	10	11	11	12	13	13	13	15
North Carolina	0	0	+	+	+	1	2	2	1	1
North Dakota	0	0	0	0	0	0	+	+	+	+
Ohio	0	0	1	2	4	3	3	4	3	3
Oklahoma	0	0	0	0	0	0	0	+	0	0
Oregon		+	+	+	1	1	2	2	2	2
Pennsylvania	17	16	16	16	16	16	14	15	14	14
Rhode Island	3	3	3	2	2	1	1	1	1	1
Texas	+	+	+	+	1	2	3	3	3	3
Vermont	1	2	2	2	3	3	3	3	4	3
Virginia	0	0	0	0	0	+	+	1	1	1
Washington	0	0	0	+	+	+	+	+	+	+
West Virginia	0	0	0	0	0	+	+	1	1	1
Wisconsin			1	1	1	1	1	1	1	1

Blank spaces indicate missing data
+ indicates less than .5 percent appropriated

Note: Alaska, Arkansas, Florida, Georgia, Massachusetts, New Hampshire South Carolina, Tennessee, and Utah are not shown because data were not provided for fiscal years 1976 and 1977. Arizona, Colorado, Hawaii, Mississippi, Montana, Nebraska, Nevada, New Mexico, South Dakota report no dollars appropriated to the private sector for all years. Wyoming has no private institutions.

In contrast, in the other four states where buying power dropped in the public sector, the percentage change in the private sector was high, except in Wisconsin:

	Total private	Total public
Connecticut	68%	-7%
Maine	131	-6
Maryland	102	-1
Wisconsin	18	-1

The issue of the extent to which the state should finance the private sector has become a major concern to many leaders in higher education who value the diversity the private sector provides our society. Recent publications have discussed current trends in enrollments, the financing of private education, and the policy implications for the future (Breneman and Finn, 1978; Carnegie Council on Policy Studies in Higher Education, 1977; Education Commission of the States, 1977.)

To determine the extent that the states appropriate funds for the private sector is difficult since, in addition to the money earmarked for specific private or independent institutions, a significant percentage of student aid money is expended in the nonpublic sector. Specific amounts are not earmarked, however, as the appropriations for private higher education. Thus, the data provided here for the private sector are probably comparable year by year, but may underrepresent the actual state support of private higher education.

APPROPRIATIONS BY ENROLLMENTS

Changes in appropriations during the 10 years reported here can also be evaluated by dividing appropriations by the reported number of full-time-equivalent (FTE) students. The following data must be interpreted very carefully and must be regarded only as a means for looking at state trends. The derived figures cannot be used as "cost-per-student" figures since they are based on the state appropriations alone--not expenditures, and not other funds that support higher education.

Enrollments

While enrollments in public elementary and secondary schools began to taper off after 1973, higher education enrollments, particularly in the public sector, grew at a rapid pace, as was seen in Graph 2. In the 33 states for which private higher education FTE enrollments were provided, the percentage change from 1968 to 1977 was 8 percent, not much greater than the 3 percent percentage change in the public elementary and secondary average daily attendance (ADA) enrollment. For the same period, the comparable percentage change in public higher education institutions was 66 percent.

Within the public sector, the community colleges showed the greatest increase, as seen in Table 19. The percentage change was far greater from 1968 to 1972 than it was from 1973 to 1977. The community colleges in the south showed the largest change in enrollments (258%), and the least change was in the central states (98%).

Table 19. Percentage Change in FTE Enrollments in Public Higher Education: Advanced Graduate and Research Universities, Other Universities and Colleges, and Two-year Colleges

Type of public institution	Percentage change from fiscal year 1968 to									1968 to 1972	1973 to 1977
	1969	1970	1971	1972	1973	1974	1975	1976	1977		
Advanced graduate and research univ.	6	11	17	22	26	28	31	39	39	22	10
Other univ. & colleges	11	20	30	36	35	37	40	46	45	36	7
Two-year colleges	15	33	51	66	73	88	106	136	139	66	38

Type of public institution	Percentage change from preceding year								
	1968 1969	1969 1970	1970 1971	1971 1972	1972 1973	1973 1974	1974 1975	1975 1976	1976 1977
Advanced graduate and research univ.	6	5	5	3	3	1	2	4	-0
Other univ. & colleges	11	7	8	4	-0	1	4	3	-0
Two-year colleges	15	14	13	9	4	8	9	14	2

-0 indicates negative change smaller than 1 percent

Note missing data: Alaska all years (all sectors), Idaho 1968-1972 (all sectors), Indiana 1969 (all sectors), Michigan 1968-1973 (advanced graduate universities and other universities and colleges), New Hampshire 1968-1972 (all sectors), Oregon 1968-1972 (advanced graduate universities and other universities and colleges), South Dakota 1968-1972 (advanced graduate universities and other universities and colleges), Texas 1976 (two-year colleges), Utah 1976, 1977 (all sectors), and Wyoming 1968 (advanced graduate universities) and 1968, 1969 (two-year colleges).

The greatest percentage change in enrollments in institutions that grant at least a baccalaureate degree was among eastern advanced graduate and research universities (75%), and was considerably greater than the change for other public universities and colleges in that area (57%). In the west the opposite was the case; the percentage change in enrollments increased by only 33 percent in the advanced graduate universities from 1968 to 1977, but the other public universities and colleges increased at a greater rate (58%). See Appendix D-17 for these data by state.

The percentage changes from 1968 to 1972 and from 1973 to 1977 for enrollments in public and private institutions and by type of institution are shown in Table 20. Of the states shown, only in Wisconsin was there a loss in enrollments in the public sector from 1968 to 1972, but 16 states reported a drop in some private institutions, primarily in private two-year colleges. However, in the recent period from 1973 to 1977, more of the states reported that certain types of public institutions had suffered drops in enrollment. Only in Iowa and Missouri, however, was there an overall drop in both the public and private sectors. The greatest positive change from 1973 to 1977 for public institutions was in Rhode Island (47%), Delaware (42%), and Nebraska (40%). In 16 of the 29 states shown, some types of private institutions lost enrollments. In half of these states, the downward trend continued from the 1968 to 1972 period in those particular types of institutions--primarily the private two-year colleges. Colorado, Iowa, and New Jersey lost

Table 20. Percentage Change in FTE Enrollments, 1968 to 1972 and 1973 to 1977, in Public and Private Universities and Colleges in Selected States, by Type of Institution

States and type of institution	1968 to 1972		1973 to 1977	
	Public	Private	Public	Private
Alabama	30	-4	25	16
Advanced & res. univ.	14	NA	8	NA
Other colleges & univ.	36	-3	50	11
Two-year institutions	53	-9	28	58
Arizona	37	72	30	137
Advanced & res. univ.	19	NA	11	NA
Other colleges & univ.	32	72	17	134
Two-year institutions	89		62	150
Arkansas	14	-27	22	6
Advanced & res. univ.	12	NA	7	NA
Other colleges & univ.	14	-27	11	10
Two-year institutions	27	-30	208	-33
Colorado	42	4	20	-21
Advanced & res. univ.	27	5	-0	-24
Other colleges & univ.	37	4	41	-15
Two-year institutions	121	NA	41	NA
Connecticut	56	8	6	3
Advanced & res. univ.	30	7	3	8
Other colleges & univ.	48	11	-0	4
Two-year institutions	119	-28	19	-42
Delaware	74	11	42	14
Advanced & res. univ.	52	NA	7	NA
Other colleges & univ.	100	100	6	
Two-year institutions	425	-46	329	0
Hawaii	66	59	8	-6
Advanced & res. univ.	34	NA	-8	NA
Other colleges & univ.		34	15	11
Two-year institutions	168		38	NA
Illinois	52	0	9	13
Advanced & res. univ.	29	1	4	15
Other colleges & univ.	48	0	11	10
Two-year institutions	95	-4	15	18

Table 20 (continued)

States and type of institution	1968 to 1972		1973 to 1977	
	Public	Private	Public	Private
Iowa	18	-5	-3	-28
Advanced & res. univ.	11	5	1	-27
Other colleges & univ.	17	-6	-2	-12
Two-year institutions	34	-13	-13	-72
Kansas	19	-4	5	4
Advanced & res. univ.	19	NA	9	NA
Other colleges & univ.	5	-3	-4	-0
Two-year institutions	56	-16	12	61
Kentucky	39	-41	20	0
Advanced & res. univ.	85	NA	22	NA
Other colleges & univ.	13	-19	14	0
Two-year institutions	77	-53	36	0
Maryland	45	-3	18	-3
Advanced & res. univ.	16		-5	6
Other colleges & univ.	54		34	-8
Two-year institutions	110		39	14
Massachusetts	57	19	8	14
Advanced & res. univ.	70	21	18	
Other colleges & univ.	25	21	2	
Two-year institutions	113	3	13	
Minnesota	24		2	10
Advanced & res. univ.	13	NA	6	NA
Other colleges & univ.	23		-6	9
Two-year institutions	68		12	14
Missouri	34	-6	-0	-2
Advanced & res. univ.	16	-9	-1	0
Other colleges & univ.	46	-6	-14	-2
Two-year institutions	48	14	24	-23
Nebraska	26	-14	40	20
Advanced & res. univ.	15	2	100	20
Other colleges & univ.	30	-21	-45	20
Two-year institutions	60	0	111	
New Jersey	84	14	14	-21
Advanced & res. univ.	32	14	-5	-24
Other colleges & univ.	34	14	2	-13
Two-year institutions	746	8	44	-47

Table 20 (continued)

States and type of institution	1968 to 1972		1973 to 1977	
	Public	Private	Public	Private
New Mexico	33	3	9	14
Advanced & res. univ.	37	NA	14	NA
Other colleges & univ.	27	3	-24	14
Two-year institutions	29	NA	66	NA
New York	56	3	8	13
Advanced & res. univ.	49	-7	13	17
Other colleges & univ.	48	8	7	7
Two-year institutions	69	-9	7	56
North Carolina	32	4	16	1
Advanced & res. univ.	25	13	15	11
Other colleges & univ.	30	6	18	1
Two-year institutions	106	-10	13	-19
Oklahoma	18	9	19	12
Advanced & res. univ.	8	0	12	1
Other colleges & univ.	11	8	5	28
Two-year institutions	90	50	66	-22
Rhode Island	38	14	47	53
Advanced & res. univ.	28	12	29	11
Other colleges & univ.	61	15	31	73
Two-year institutions	42	NA	122	NA
South Carolina	40	8	32	4
Advanced & res. univ.	31		17	
Other colleges & univ.	47	6	87	10
Two-year institutions	81	24	-32	-23
Tennessee	31	-0	18	7
Advanced & res. univ.	8	62	7	3
Other colleges & univ.	146	12	15	10
Two-year institutions	233	-13	112	-4
Vermont	41	1	17	10
Advanced & res. univ.	38		13	
Other colleges & univ.	50	16	25	0
Two-year institutions	25	-9	22	-5
Virginia	60	3	28	4
Advanced & res. univ.	37		16	3
Other colleges & univ.	43	14	25	16
Two-year institutions	177	-39	54	-83

Table 20 (continued).

States and type of institution	1968 to 1972		1973 to 1977	
	Public	Private	Public	Private
Washington	41	9	10	4
Advanced & res. univ.	18	NA	4	NA
Other colleges & univ.	43	9	-2	4
Two-year institutions	61	NA	18	NA
West Virginia	30		20	-7
Advanced & res. univ.	16	NA	25	NA
Other colleges & univ.	31		7	-7
Two-year institutions	109		103	-11
Wisconsin	23	-4	3	10
Advanced & res. univ.	13	-7	5	16
Other colleges & univ.	37	-7	1	5
Two-year institutions	-17	16	19	25

Blanks indicate missing data
0 indicates no change or positive change smaller than 1 percent
-0 indicates negative change smaller than 1 percent
NA means not applicable

Note: States not shown are excluded because data were not provided or were incomplete.

considerable enrollments in the private sector from 1973 to 1977. Nevertheless, the rate of increase in FTE enrollments was greater in the private than in the public sector in eight states: Arizona, Illinois, Massachusetts, Minnesota, New Mexico, New York, Rhode Island, and Wisconsin.

Appropriations per FTE Student

From fiscal year 1968 to 1977, the percentage change per FTE student in state appropriations to all of public higher education (including state-level agencies and student aid) was 76 percent (Table 21). Regionally, the greatest change occurred from fiscal year

Table 21. Percentage Change in State Appropriations Per FTE Student in Public Higher Education, 1968-1977, by Region (in unadjusted dollars)

Region	Percentage change from fiscal year 1968 to									1968 to 1972	1973 to 1977
	1969	1970	1971	1972	1973	1974	1975	1976	1977		
West	6	16	18	16	26	44	53	64	82	16	44
Central	5	11	17	24	35	52	58	78	94	24	43
South	7	16	25	31	42	60	73	59	72	31	20
East	6	14	13	18	19	25	36	38	49	18	24
United States	6	14	19	23	32	47	56	62	76	23	33

Region	Percentage change from preceding year								
	1968 1969	1969 1970	1970 1971	1971 1972	1972 1973	1973 1974	1974 1975	1975 1976	1976 1977
West	6	9	1	-0	8	13	6	8	10
Central	5	7	5	6	9	12	3	12	9
South	7	8	6	6	8	14	5	-0	7
East	6	7	-1	3	1	4	8	1	7
United States	6	8	3	4	7	11	5	5	8

-0 indicates negative change smaller than 1 percent

Note data missing: Alaska (all years), Idaho (1968-1972), Montana (1968), New Hampshire (1973-1977), Texas (1968, 1969, 1977), Utah (1976, 1977), and Wyoming (1968, 1969).

Table 22. Percentage Change in State Appropriations Per FTE Student in Public Higher Education, 1968-1977, by Region (in constant dollars)

Region	Percentage change from fiscal year 1968 to 1969	1970	1971	1972	1973	1974	1975	1976	1977	1968 to 1972	1973 to 1977
West	-0	2	-2	-8	-6	-0	-2	-1	2	-8	9
Central	-1	-2	-3	-2	0	5	1	12	15	-2	15
South	0	2	3	2	5	11	10	-4	-3	2	-8
East	0	0	-6	-7	-11	-12	-12	-17	-16	-7	-5
United States	-0	0	-1	-3	-1	2	-0	-1	0	-3	3

Region	Percentage change from preceding year: 1968 to 1969	1969 to 1970	1970 to 1971	1971 to 1972	1972 to 1973	1973 to 1974	1974 to 1975	1975 to 1976	1976 to 1977
West	-0	2	-4	-6	2	6	-1	1	3
Central	-1	0	-0	0	3	5	-4	10	3
South	0	1	0	0	2	6	-2	-7	1
East	0	0	-6	-1	-3	-1	-0	-4	1
United States	-0	1	-2	-1	1	4	-2	0	2

0 indicates no change or positive change smaller than 1 percent
-0 indicates negative change smaller than 1 percent

Note data missing: Alaska (all years), Idaho (1968-1972), Montana (1968), New Hampshire (1973-1977), Texas (1968,1969, 1977), Utah (1976, 1977), and Wyoming (1968, 1969).

1973 to 1974, except in the eastern states. The central states showed the largest rate of increase in appropriations per FTE student from 1968 to 1977, and the eastern states the least.

When state appropriations were adjusted with the Halstead inflation factor and then divided by FTE enrollments in public institutions, appropriations per student were essentially the same in 1977 as in 1968 (Table 22), although there were variations from year to year. Again the aggregate obscures individual state changes during that time. Among the eastern states, appropriations per FTE student dropped considerably; among the central states, the rate of increase was of about the same magnitude, but in the opposite direction. Table 23 shows the percentage change by state.

In most states, the appropriations per FTE student were greater in the public advanced graduate and research universities than in the other two types of public institutions, as would be expected (Table 24). Among the states for which data were provided, only Delaware, Oregon, and Pennsylvania had higher appropriations per student in their other universities and colleges than in their advanced graduate universities in fiscal year 1977. The final column in Table 24 shows the total appropriations made to the public sector in 1977 per total public FTE student. Besides direct appropriations to public institutions, student financial aid, and other grants and aid, the total appropriations figure also includes appropriations to state-level agencies. The total column helps to place in perspective the figures shown in the other three columns. The unadjusted dollar

Table 23. Percentage Change in State Appropriations Per FTE Student in Public Higher Education, 1968-1977, by State (in constant dollars)

States	Percentage change from fiscal year 1968 to								
	1969	1970	1971	1972	1973	1974	1975	1976	1977
Alabama	-15	-3	-7	-3	-9	12	0	15	10
Arizona	3	6	17	16	8	13	4	-5	1
Arkansas	3	2	8	13	21	52	58	52	53
California	1	3	-3	-9	-3	3	2	4	7
Colorado	4	21	24	8	-5	18	15	16	17
Connecticut	-5	-0	-5	-3	-6	-11	-14	-22	-19
Delaware	0	1	1	-7	-1	0	8	-4	-8
Hawaii	7	7	16	11	10	-12	-14	-9	2
Illinois	-6	-2	-5	-15	-15	-16	-19	-24	-22
Indiana	no data	-14	-13	-14	-13	-10	-13	-5	-6
Iowa	1	-9	-8	-8	-12	-7	-8	14	21
Kansas	-1	-1	3	0	9	16	22	35	44
Kentucky	-1	5	2	-0	5	2	6	-0	4
Maine	-13	-5	-6	-9	-10	-3	-3	-17	-25
Maryland	-4	-1	5	9	6	6	0	-6	-11
Massachusetts	-10	-0	8	3	6	-2	-6	2	-0
Michigan	-3	-4	-7	-5	0	12	-5	16	14
Minnesota	-5	-1	-0	5	10	13	8	22	24
Mississippi	-1	-5	15	20	21	31	30	24	22
Nebraska	10	28	35	40	47	67	80	58	56
Nevada	-15	-13	-22	-22	-21	-16	-25	-13	-9
New Jersey	-2	-3	-1	18	18	14	4	-1	4
New Mexico	-6	-5	-4	-9	-2	-2	2	5	16
New York	-0	-0	-10	-16	-25	-25	-22	-29	-27
North Carolina	10	20	15	23	21	44	52	68	77
North Dakota	9	8	7	5	27	46	37	91	80
Ohio	1	5	2	5	8	14	17	16	20
Oklahoma	-1	2	7	10	10	13	17	18	31
Oregon	-16	-14	-26	-26	-27	-27	-32	-27	-25
Pennsylvania	8	8	-2	-1	4	2	4	8	3
South Carolina	0	18	9	13	30	41	54	39	29
South Dakota	-8	-14	-13	-7	23	38	38	48	45
Tennessee	-0	-1	-2	3	9	12	10	-1	5
Vermont	2	-6	-11	-16	-23	-25	-29	-36	-41
Virginia	7	0	2	0	2	-1	-1	-3	0
Washington	-3	-0	-7	-19	-19	-13	-12	-15	-9
West Virginia	-4	-1	-11	-9	11	6	2	-5	0
Wisconsin	0	-5	1	15	24	24	19	13	17

0 indicates no change or positive change smaller than 1 percent
-0 indicates negative change smaller than 1 percent

Note: States not shown are excluded because data were not provided or were incomplete.

Table 24. State Appropriations Per FTE Student in Public Institutions: Advanced Graduate and Research Universities, Other Universities and Colleges, Two-year Colleges, and Total, 1977, by State (in unadjusted dollars)

States	Advanced graduate & research universities	Other universities & colleges	Two-year colleges	Total including state agencies
Alabama	2738	1615	982	1880
Arizona	2079	1591	606	1385
California	5759	2639	746	1756
Colorado	2133	1273	1162	1763
Delaware	2107	3284	1439	1980
Georgia	2943	1452	1137	2862
Hawaii	3547	2814	1294	2544
Idaho	3774	2487	1165	2849
Illinois	3045	2217	952	2078
Indiana	2576	2077	1377	2440
Iowa	3833	2479	1954	3112
Kansas	2953	1921	629	2139
Kentucky	3563	2225	1083	2622
Michigan	3347	936	914	1730
Minnesota	3492	2026	1437	2614
Mississippi	2495	1487	783	1635
Missouri	3040	1890	729	1952
Montana	1708	1696	808	1671
Nebraska	2452	1363	866	1903
Nevada	not app.	3080	1748	2674
New Jersey	4893	1658	689	1935
New Mexico	2468	2315	863	2246
North Dakota	not app.	2107	817	1926
Ohio	2313	1850	1053	1769
Oregon	2053	5534	837	1820
Pennsylvania	2423	2746	1024	2232
Vermont	1423	1066	1489	1343
Virginia	3047	1473	1450	2169
Washington	3402	2358	1281	2124
West Virginia	2887	1777	1015	2096
Wyoming	3211	not app.	845	1928

Note: States not shown are excluded because data were not provided or were incomplete.

Table 25. Percentage Change in State Appropriations Per FTE Student in Public Institutions: Advanced Graduate and Research Universities, Other Universities and Colleges, and Two-year Colleges, 1973 to 1977, by State (in constant dollars)

States	Percentage change in constant dollars		
	Advanced graduate and research universities	Other universities and colleges	Two-year colleges
Alabama	25	33	29
Arizona	9	-9	-18
California	18	17	45
Colorado	59	-5	-6
Delaware	23	44	-61
Georgia	-17	-15	-23
Hawaii	-0	62	0
Idaho	14	17	28
Illinois	-9	-15	12
Iowa	26	43	82
Kentucky	-1	-1	-20
Maine	not applicable	-16	not applicable
Minnesota	10	17	5
Mississippi	7	-6	4
Missouri	1	159	104
Montana	10	-10	-18
Nebraska	-5	30	-19
Nevada	not applicable	22	93
New Jersey	7	-1	-35
New Mexico	20	32	10
North Dakota	not applicable	52	3
Ohio	10	15	23
Oregon	14	38	-9
Pennsylvania	-9	16	12
Texas	18	32	no data
Vermont	-22	-25	-20
Virginia	5	8	-9
Washington	17	17	10
West Virginia	-16	0	-23
Wyoming	35	not applicable	15

0 indicates no change or positive change smaller than 1 percent
-0 indicates negative change smaller than 1 percent

Note: States not shown are excluded because data were not provided or were incomplete.

figures for each type of public institution from 1968 to 1977 by state are shown in Appendix D-19, as are the unadjusted totals by state.

When these actual dollar figures are adjusted for inflation, the percentage change from 1973 to 1977 in appropriations per FTE student by type of public institution for the 30 states for which data were available is shown in Table 25. From this, it is apparent that a third of the states increased their appropriations per FTE student in all three sectors, and that another third decreased their appropriations per student in at least two of the three types of institutions.

CONCLUDING REMARKS

The results of this ten-year review of state appropriations for higher education show the wide range of differences among the regions of the nation and among the individual states. From the data, valid generalizations can be drawn for the nation as a whole, but exceptional caution must be exercised in relating such conclusions to a single state or even to a cluster of states.

As the revenue of the states increased in real dollars during the decade of the survey period, so did their appropriations to education. The change in increase was greater in the first five years than it was in the second five. But the rate of increased appropriations to education was not as great as the rate of increase in general revenue, primarily because the rate of growth in appropriations to public elementary and secondary schools was considerably below that of higher education. Nevertheless, even in fiscal year 1977, two-thirds of the dollars appropriated to education as a whole went to the public elementary and secondary schools. While four out five states appropriated half or more of their revenue to education in 1968, by 1977 only three out of five allocated such a large portion of their revenues to education.

The share of education appropriations received by institutions of higher education has grown considerably, with the greatest rate of growth occurring in the private sector. But its share is still small, about one-twentieth of the total to higher education, although a few states support private education in greater proportions. Appropriations for student aid in all of higher education has also increased considerably from 1968 to 1977.

From 1968 to 1972, the rate of increase in general revenue was slower than that of appropriations to public higher education; this reversed in 1973, after which revenues increased at a faster pace than these appropriations.

The division of the share within the public sector has shifted toward a larger percentage appropriated directly to the community colleges, and a smaller percentage appropriated to the advanced graduate and research universities, although the latter still receive a little over half the appropriations made directly to all public universities and colleges.

While higher education has increased its share of the education appropriations, its share of state general revenue dropped slightly. This reduction generally reflects greater support of other state services because appropriations to higher education nevertheless increased even in constant dollars.

Overall, in the period covered by this study, state governments in the aggregate kept pace in funding the increases in FTE enrollment, although the percentage change was small. However, it

should be noted that additional costs in admissions, counseling, accounting, facilities, and maintenance do accrue in institutions enrolling large numbers of part-time students who make up the FTE.

When appropriations to public higher education were adjusted for inflation, and the rate of change from fiscal year 1968 to 1977 was compared to the change in FTE enrollments, the trends were remarkably similar for the states in the aggregate, but varied considerably for the individual states. State support of public higher education, when adjusted for both inflation and enrollment, had increased in two out of three states, but usually not at the same pace. In some public sectors, the changes in support offered by the individual state over the years ranged from outright decreases to large increases per FTE. Some states increased funding in an attempt to make up past deficiencies in providing equal opportunity in access, array of programs, and institutions. Other states seemed to have concluded that they had reached the zenith of their support for higher education and shifted to other state services the dollar attention that had been focussed on higher education in the '60s.

We can expect some changes in these trends in the future; public support of higher education is certain not to increase as rapidly as it has in the past, if it increases at all when inflation is taken into account. Future enrollments cannot be anticipated with certainty, but they surely will eventually, if not immediately, reflect the drop in the absolute numbers of students currently attending elementary and secondary schools. And other critical

changes can be predicted: While enrollment patterns will unquestionably be affected by changes in demography, they also will be responsive to the powerful influence of social motivational forces as these are manifested through the expressed interests of persons with present and future involvements in higher education, such as legislators, administrators, faculty, the population-at-large. Further, state revenues will inescapably be susceptible in some part to the taxpayer revolt of the late 1970s, with inevitable consequences, both direct and indirect, for the distribution of support for education at all levels.

A chart published by the Education Commission of the States (1978), and provided by Steven Rabin of the Coalition of the American Public Employees, shows that all but five states have made some effort to limit their taxes and/or spending during the '70s. As of October 1978, 12 states had passed such reforms, and most of the rest are in the process.

Past trends have already shown a slowing down of the growth rate, but the rate still represents increases, even in constant dollars, for higher education. However, if revenues are limited or reduced the implications for education are obvious. Like other agencies supported by the state either in part or in whole, higher education institutions will be affected, but how greatly and how quickly will probably vary by institution and by state. Even within a state, changes may be masked when appropriations are looked at in the aggregate or when changes are merely compared from one year to

the next. Some institutions in some states have already had to reduce their plans for expenditures because of legislative changes in their budgets. But although there may be, or indeed will be, shifts in state support, it is impossible to imagine that our legislators and their constituents will not continue to place great value on public support of our educational system. Moreover, we believe that support levels will permit the survival of the differentiation in function of the various segments of higher education--if not in their current configuration, at least with the diversity so necessary in a heterogeneous society.

Appendixes

Appendix A
Acknowledgments

We gratefully acknowledge the cooperation and help from the people who provided the data for this report: the members of the State Higher Education Executive Officers, the directors and staffs of statewide coordinating agencies, governing boards, and other state offices. In California, Delaware, Florida, Michigan, Nebraska, Utah, and Vermont, state offices or institutions provided data when the SHEEO members informed us that they could not provide the information we requested. Alaska is excluded from this report at their request because their Postsecondary Commission could neither provide recent data nor confirm data from the 1973 survey.

The respondents with whom we had direct contact, by mail or by telephone when clarification of the data made it necessary, are listed below. The people listed in the left-hand column were involved in the final 1977 survey and may have made revisions of earlier data. Other respondents who were involved in earlier surveys, but not in the last one, have been listed in the right-hand column.

Our thanks are extended also to the many staff members who helped to provide data from their offices, but whose names did not appear on forms returned to us, or with whom we did not have direct contact by telephone.

Alabama: Commission on Higher Education
John F. Porter, Executive Director
Susan C. Mason
James R. Kidder (1975)

Arizona: State Board of Regents
Lawrence E. Woodall, Executive Coordinator
Robert A. Lewis

Arkansas: Department of Higher Education
M. Olin Cook, Executive Director
Robert E. McCormack

California: State Department of Finance
Edwin W. Beach, Assistant Director
Charles E. Gocke
Jim Wilson
Jeff Rohde
Fred Class
Richard L. Cutting (1975)
Roger Peake (1975)
Robert L. La Liberte (1973)

Colorado: Commission on Higher Education
Jerome F. Wartgow, Acting Executive Director
Jack D. Armstrong
Frank C. Abbott, Exec. Dir. (1975)
Gwen S. Thornton (1975)
Lindsay B. Baldner (1975)

Connecticut: Board of Higher Education
Samuel B. Gould, Chancellor Pro Tem.
George E. Steinmetz
Louis Rabineau, Chancellor (1975)
W. Robert Bokelman (1973)

Delaware: Postsecondary Education Commission
John F. Corrozi, Executive Director
Donald F. Crossan, Vice President, University of Delaware, (1975, 1973)
Luna I. Mishoe, President Delaware State College (1975)
Walter Speakman (1975)

Florida: State University System of Florida
E. T. York, Jr., Chancellor
Carol J. Walters
Jo Jackson
Georgann Lewis
Robert B. Mautz (1975)
David C. McOuat (1975)
C. J. Carter (1973)

Carl W. Blackwell, Asst. State Budget Director, Division of the Budget

Georgia: Regents of the University System
George L. Simpson, Jr., Chancellor
William R. Walton
Shealy E. McCoy (1975, 1973)

Hawaii: University of Hawaii
Dr. Fujio Matsuda, President
Kenneth H. Ohta

Idaho: State Board of Education

Milton Small, Executive Director for Higher Education	B. Doug Aims (1975)
Stephen W. Keto	Kirk M. Sorenson (1973)

Illinois: Board of Higher Education

James M. Furman, Executive Director	
James E. Elsass	

Indiana: Commission for Higher Education

Van P. Smith, Acting Commissioner	Richard Gibb (1975)
David L. McKinney	Mary Z. Ruby (1975, 1973)
Bill Morling	

Iowa: Board of Regents

R. Wayne Richey, Executive Secretary	
Wallace C. Caldwell	

Kansas: Board of Regents

John J. Conard, Executive Officer	Max Bickford, Executive Officer (1975)
Philip E. Arnold	

Kentucky: Council on Public Higher Education

Harry M. Snyder, Executive Director	A. D. Albright, Exec. Dir. (1975)
Thomas G. Braun	
Bob Willis	Carson E. Smith (1975)
Don Mueller	David Carter (1975)

Louisiana: State Board of Regents

William Arceneaux, Commissioner of Higher Education	
James R. Patin	
Jimmie Wax	
Mike Galloway	

Maine: University of Maine

Patrick E. McCarthy, Chancellor	Donald R. McNeil, Chancellor (1975)
William L. Gilfillan	
	David I. Carter (1973)

Maryland: Board for Higher Education

Sheldon H. Knorr, Commissioner	Walter R. Lewis (1975)
Lucie Lapovsky	Wesley N. Dorn (1974)

Massachusetts: Board of Higher Education

Leroy Keith, Chancellor	Patrick McCarthy, Chancellor (1975)
Susan Horowitz	
Ramona Hildencamp	William J. Bestimt (1975)
	Joseph A. DiCicco (1973)

Michigan: Department of Education

Robert L. Huxol, Associate Superintendent, Bureau of Higher Education	James Hatcher (1973)

Michigan (Continued)
Weston H. Agor, Consultant, Higher Education Management Services

Fred Whims, Dept. of Management & Budget
Jim Guilder

Minnesota: Higher Education Coordinating Board
Clyde Ingle, Executive Director
K. Scott Foster
Robert Rustad
Richard Hawk, Executive Director (1975)

Mississippi: Board of Trustees of State Institutions of Higher Learning
E. E. Thrash, Executive Secretary and Director
Charlie Q. Coffman
Tom Pritchard (1975)

Missouri: Department of Higher Education
J. Bruce Robertson, Commissioner
Charles O'Halloran
Robert G. Silvey
T. Michael Elliott
Loretta Elliott
Jack L. Cross, Commissioner (1975)
Don Lindenbusch (1975)

Montana: Board of Regents of Higher Education
Lawrence K. Pettit, Commissioner
John H. Noble, Jr.

Nebraska: Coordinating Commission for Postsecondary Education
William S. Fuller, Executive Director
John Oberg, Executive Budget Office
Jean Larsen
Carolyn Lee (1975)
Carol Schmidt (1975)
Bruce Beecher (1973)

Nevada: University of Nevada System
Neil D. Humphrey, Chancellor
Douglas Mathewson
Mary Lou Moser
Dale Pellman (1975)
Virginia Kersey (1975)
K. Donald Jessup (1975, 1973)

New Hampshire: University of New Hampshire
Elizabeth H. Nolte (1973)

New Jersey: Board of Higher Education
Ralph A. Dungan, Chancellor
Anne Ott
Barry Cohen (1975)
Herbert J. Horowitz (1973)

New Mexico: Board of Educational Finance
Robert A. Huff, Executive Secretary
Donald S. Stuart
William R. McConnell, Executive Secretary (1975)

New York: Board of Regents
T. Edward Hollander, Deputy Commissioner
Philip D. Danaher
Theodora M. Thayer
William S. Fuller (1974)

North Carolina: University of North Carolina

William C. Friday, President	Allen J. Barwick (1975, 1973)
John D. Wilson	
Hugh Buchanan	

North Dakota: Board of Higher Education

Kenneth E. Raschke, Commissioner	
Floyd B. Case	

Ohio: Board of Regents

James A. Norton, Chancellor	
Duane R. Rogers	

Oklahoma: State Regents for Higher Education

E. T. Dunlap, Chancellor	John E. Cleek (1975)
Edward J. Coyle	Gerald F. Williams (1973)

Oregon: Educational Coordinating Commission

T. K. Olson, Executive Director	Clement Lausberg (1975)
Robert E. Stevens	

Pennsylvania: State Department of Education

John C. Pittenger, Secretary of Education	Charles P. McIntosh (1974)
James Stevenson	

Rhode Island: Board of Regents for Education

Thomas C. Schmidt, Commissioner of Education	Fred G. Burke, Commissioner of Education (1975)
Peter Woodberry	Clyde R. Ingle (1975, 1973)
Jonathan Eiseman	James Arenburgh (1975)

South Carolina: Commission on Higher Education

Howard R. Boozer, Executive Director	William C. Jennings (1975)
Charles A. Brooks, Jr.	

South Dakota: Board of Regents

Richard L. Bowen, Commissioner of Higher Education	Robert H. DeZonia, Commissioner of Higher Education (1975)
Roger L. Kozak	Lowell Crary (1976)
	R. Lee Ginsbach (1976)
	Mary Myers Johnson (1975)

Tennessee: Higher Education Commission

G. Wayne Brown, Executive Director	John K. Folger, Executive Director (1975)
James Spillman	
John Hastie	Jack Blanton (1975, 1973)

Texas: Coordinating Board, Texas College and University System

Kenneth H. Ashworth, Commissioner	
William A. Webb	

Utah: University of Utah
W. Ralph Hardy

G. Homer Durham, State Board of Higher Education (1975)
W. Ralph Hardy, Board of Regents (1975)
Myron R. Holbert, Utah System of Higher Education (1973)

Vermont: Vermont State Colleges
David McGreggor, Chancellor

William Craig (1974)

David M. Otis, Executive Director, Higher Education Planning Commission

Virginia: State Council of Higher Education
Gordon K. Davies, Director
Robert P. Schultze

Daniel E. Marvin, Jr., Director (1975)
Jeffrey S. Cribbs (1975, 1973)

Washington: Council for Postsecondary Education
Patrick M. Callan, Executive Coordinator
Michael L. Bigelow

James M. Furman, Executive Coordinator (1975)
Carl C. Donovan (1973)

West Virginia: Board of Regents
Ben L. Morton, Chancellor
James J. Schneider

Arthur P. Foley (1975, 1973)

Wisconsin: University of Wisconsin
Edwin Young, President
John E. Proctor

John C. Weaver, President (1975)

Wyoming: Higher Education Council
Fred P. Black Jr., Executive Secretary

Beverly Hacker (1975)

In addition, our special thanks to Patsy Fosler, our programmer for all surveys, Harriet Renaud, who edited this report, and Melissa Feldman for typing the final version of the manuscript.

Appendix B
Issues and Problems in Requesting Information and Using the Data

Three major problem areas emerged as we collected and analyzed the state data provided for this report:

1. The survey form itself: its categories and their definitions
2. The respondents to the surveys and the data available to them
3. The analyses of the data: technical problems in computer analysis and in interpretation of the analyses

All three areas have implications for the use of such data by the staff in state higher education agencies, legislators, and college and university administrators. The purpose of this appendix is to explain in part the limitations of the reported data, to advocate caution in their use (especially when used out of context, even though we recognize their potential value to the reader), and to suggest possible improvements for gathering these kinds of data.

THE SURVEY FORM

Some variations in reporting appropriations data concern the time element: dates of fiscal years, biennial rather than annual appropriations, and the time of the year when data are reported. Fiscal years were designated on the form as beginning July 1 and ending June 30. However, in a few states the fiscal year begins September 1 or October 1. These differences were assumed to be insignificant.

CHAPTER V

CONCLUSION

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 viualized 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.

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CHAPTER V

CONCLUSION

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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.

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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.

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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 viualized 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,

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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

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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.

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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 n ed 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.

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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.

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CHAPTER V

CONCLUSION

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

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CONCLUSION

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 viualized 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 n ed 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.

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Appendix D-15 (continued).

States	Fiscal years										
	1968 1969	1969 1970	1970 1971	1971 1972	1972 1973	1973 1974	1974 1975	1975 1976	1976 1977	1973 1977	1968 1972
ALABAMA	9	3	7	6	4	4	10	19	-4	25	30
ALASKA											
ARIZONA	7	7	8	8	4	6	14	11	-3	30	37
ARKANSAS	4	8	-1	3	-3	-2	3	17	3	22	14
CALIFORNIA	10	8	9	4	3	6	7	3	7	27	36
COLORADO	12	9	9	8	4	1	4	8	4	20	42
CONNECTICUT	13	13	12	7	-0	2	6	1	-3	6	66
DELAWARE	18	19	11	13	3	3	9	23	1	42	74
FLORIDA	13	11	10	8	6	6	7	79	0	107	59
GEORGIA	10	8	10	6	1	1	1	36	-2	37	42
HAWAII	9	19	14	10	4	3	0	6	-0	8	66
IDAHO						2	-1	7	0	9	
ILLINOIS	15	12	11	5	2	2	3	4	-0	5	52
INDIANA			5	8	-0	-0	0	8	2	10	27
IOWA	7	5	3	-0	4	0	6	-10	1	-3	18
KANSAS	5	7	2	3	-1	0	2	3	-0	5	19
KENTUCKY	10	3	13	8	3	2	3	11	2	20	39
LOUISIANA	7	1	5	11	0	4	2	-6	-1	-1	27
MAINE	7	8	6	4	3	4	1	9	-4	12	31
MARYLAND	12	11	9	6	5	3	4	7	2	16	45
MASSACHUSETTS	19	6	7	14	2	11	7	-8	-0	8	52
MICHIGAN	10	9	6	2	0	-8	19	-19	-1	-9	31
MINNESOTA	5	9	3	1	-3	-3	-0	5	0	2	24
MISSISSIPPI	4	1	4	5	7	0	6	14	-0	20	16
MISSOURI	10	8	8	3	1	-5	-1	8	-0	-0	34
MONTANA		11	4	-2	-7	-2	3	9	-0	9	
NEBRASKA	9	8	5	1	1	-2	0	33	7	40	26
NEVADA	16	10	11	10	5	11	16	2	0	34	60
NEW HAMPSHIRE	0	39	7	6							59
NEW JERSEY	11	20	25	9	23	8	10	-1	-2	14	84
NEW MEXICO	6	7	8	8	-1	1	1	5	0	9	33
NEW YORK	12	7	17	10	3	6	2	7	-7	8	56
NORTH CAROLINA	8	6	9	6	-0	2	5	8	-0	16	32
NORTH DAKOTA	6	4	1	-0	-6	-1	-1	2	0	-0	12
OHIO	9	11	6	3	-0	-0	1	8	0	10	35
OKLAHOMA	6	1	4	4	-1	1	2	12	1	15	18
OREGON	17	13	8	3	0	3	6	9	-2	17	50
PENNSYLVANIA	12	8	8	5	2	3	2	5	1	14	36
RHODE ISLAND	6	10	14	2	4	2	2	49	-5	47	38
SOUTH CAROLINA	4	5	12	12	10	9	8	7	3	32	40
SOUTH DAKOTA	13	8	0	-1	-6	-6	1	3	1	0	15
TENNESSEE	7	9	5	6	2	3	3	10	-0	16	31
TEXAS			6	6	2	3	6	13			
UTAH	4	1	2	1	7	-1	2				10
VERMONT	7	14	8	5	9	5	3	4	2	17	41
VIRGINIA	18	5	12	10	13	8	6	9	1	28	26
WASHINGTON	9	10	11	4	1	3	2	7	-3	10	41
WEST VIRGINIA	7	1	14	5	-12	2	2	8	5	20	30
WISCONSIN	10	9	1	0	-1	-0	1	3	-0	3	23
WYOMING			1	3	5	13	8	0	2	28	

153

Appendix D-16. Percentage Change in Direct Appropriations to Public Institutions: Advanced Graduate and Research Universities, Other Universities and Colleges, and Two-year Colleges, in Unadjusted and Constant Dollars, 1968-1977, by Type of Institution and State

ADVANCED GRADUATE AND RESEARCH UNIVERSITIES: Unadjusted dollars

States	Fiscal years								
	1968 1969	1968 1970	1968 1971	1968 1972	1968 1973	1968 1974	1968 1975	1968 1976	1968 1977
ALABAMA	-7	16	26	56	76	149	169	227	216
ALASKA									
ARIZONA	20	41	60	100	95	138	170	182	216
ARKANSAS	11	24	32	53	65	115	150	186	208
CALIFORNIA	19	35	38	37	57	82	109	141	181
COLORADO	10	45	62	68	37	128	147	174	206
CONNECTICUT	12	34	52	84	84	93	115	120	131
DELAWARE	17	37	57	66	91	109	155	167	183
FLORIDA	29	45	67	61		138	151	171	154
GEORGIA	18	31	66	84	101	136	154	152	175
HAWAII	23	52	97	122	140	99	103	142	189
IDAHO	8	18	28	34	-3	-2	20	44	58
ILLINOIS	13	37	50	43	45	56	70	72	84
INDIANA	4	6	1	13	19	25	31	51	61
IOWA	18	13	28	32	37	55	78	104	133
KANSAS	7	22	41	53	74	91	128	180	219
KENTUCKY	11	19	48	60	83	97	136	160	193
LOUISIANA	5	4	25	33	44	62	81	193	223
MAINE									
MARYLAND	14	29	57	78	94	112	134	127	130
MASSACHUSETTS	12	37	64	90	107	139	166	195	223
MICHIGAN	9	15	25	37	53	59	80	104	104
MINNESOTA	11	24	37	53	61	75	80	131	145
MISSISSIPPI	1	1	44	64	90	120	155	188	205
MISSOURI	23	36	36	51	63	76	90	101	115
MONTANA	14	26	35	35	34	50	59	64	109
NEBRASKA	29	54	66	106	106	150	185	317	417
NEVADA									
NEW HAMPSHIRE	6	35	38	50					
NEW JERSEY	21	43	95	185	208	237	288	285	316
NEW MEXICO	6	22	41	55	75	91	112	168	217
NEW YORK	17	36	56	57	66	80	91	112	114
NORTH CAROLINA	11	34	55	79	83	109	162	220	262
NORTH DAKOTA									
OHIO	17	39	45	64	76	92	113	153	162
OKLAHOMA	12	25	44	64	67	81	103	143	185
OREGON									
PENNSYLVANIA	19	42	42	55	70	80	97	126	133
RHODE ISLAND	14	36	71	63	80	105	123	129	149
SOUTH CAROLINA	12	51	65	99	182	264	352	375	380
SOUTH DAKOTA									
TENNESSEE	12	22	32	55	73	98	118	132	157
TEXAS	9	32	41	62	72	108	115	209	230
UTAH	14	25	40	55	71	95	128		
VERMONT	10	28	27	37	46	63	73	73	72
VIRGINIA	34	39	83	104	157	181	228	226	318
WASHINGTON	8	28	34	20	28	49	69	88	107
WEST VIRGINIA	7	17	26	49	66	72	80	97	127
WISCONSIN	17	24	30	67	90	100	113	126	153
WYOMING	0	27	27	48	48	71	101	147	167

Appendix D-16 (continued)

ADVANCED GRADUATE AND RESEARCH UNIVERSITIES: Unadjusted dollars

States	Fiscal years										
	1968 1969	1969 1970	1970 1971	1971 1972	1972 1973	1973 1974	1974 1975	1975 1976	1976 1977	[illegible] 977	[illegible]
ALABAMA	-7	2[illegible]	9	22	13	41	7	22	-3	76	
ALASKA											
ARIZONA	20	17	27	10	-2	21	13	4	16	61	
ARKANSAS	11	11	6	16	7	30	16	14		86	
CALIFORNIA	19	13	2	-0	19	15	14	15	16	78	2
COLORADO	10	32	32	-12	-18	66	8	11	1	122	8
CONNECTICUT	12	19	13	20	0	4	11	2	1	21	84
DELAWARE	17	16	14	5	14	9	21	4	8	67	66
FLORIDA	29	12	15	-3			5	7	8		61
GEORGIA	18	10	25	11	9	17	7	-0	9	86	84
HAWAII	23	22	29	12	8	-17	2	18	19	18	122
IDAHO	0	9	6	4	-28	1	23	20	9	64	36
ILLINOIS	13	20	8	-4	1	7	8	1	6	1	63
INDIANA	4	1	-4	11	5	4	4	15	6		13
IOWA	19	-4	13	3	3	13	14	14	14		32
KANSAS	7	13	15	8	14	9	19	22	1	82	53
KENTUCKY	11	7	23	8	14	7	19	10	12	86	60
LOUISIANA	5	-0	23	3	6	12	11	61	13	1	33
MAINE											
MARYLAND	14	12	21	13	9	9	10	-3	1	9	78
MASSACHUSETTS	12	22	19	15	8	16	11	11		86	90
MICHIGAN	9	9	8	9	11	4	13	12		33	37
MINNESOTA	11	11	10	11	4	8	2	28	5	52	53
MISSISSIPPI	1	0	42	13	16	15	15	13	5	60	44
MISSOURI	23	10	0	11	8	7	8	5	6	31	51
MONTANA	14	10	7	0	-1	11	6	22	7	55	35
NEBRASKA	29	16	20	10	0	21	13	46	23	150	106
NEVADA											
NEW HAMPSHIRE	6	27	1	8							50
NEW JERSEY	21	18	35	45	8	9	15	-0	8	35	185
NEW MEXICO	6	14	15	9	12	6	10	26	18	80	55
NEW YORK	17	16	14	0	5	8	5	11	0	28	57
NORTH CAROLINA	11	21	15	15	2	14	28	22	13	97	79
NORTH DAKOTA											
OHIO	17	18	4	12	7	9	10	18	3	48	60
OKLAHOMA	12	12	15	13	1	8	12	19	17	70	64
OREGON						8	6	22	9	55	
PENNSYLVANIA	19	19	-0	9	9	8	9	15	2	36	85
RHODE ISLAND	14	15	25	-4	10	13	8	2	8	38	62
SOUTH CAROLINA	12	34	9	20	41	29	24	5	0	70	99
SOUTH DAKOTA						17	12	7	6	41	
TENNESSEE	12	9	8	17	11	14	9	6	11	49	55
TEXAS	9	20	6	14	5	20	3	44	6	91	62
UTAH	14	5	12	10	10	14	16				55
VERMONT	18	8	7	0	6	11	5	0	-0	17	37
VIRGINIA	34	3	31	11	25	9	16	12	13	62	104
WASHINGTON	8	18	5	-10	7	16	13	10	10	61	20
WEST VIRGINIA	7	9	7	17	11	4	4	9	15	37	49
WISCONSIN	17	6	10	21	13	5	6	5	10	31	47
WYOMING	0	27	0	15	0	16	17	22	8	80	48

Appendix D-16 (continued)

ADVANCED GRADUATE AND RESEARCH UNIVERSITIES: Constant dollars

States	Fiscal years 1968 1969	1968 1970	1968 1971	1968 1972	1968 1973	1968 1974	1968 1975	1968 1976	1968 1977
ALABAMA	-13	1	4	21	30	72	70	95	77
ALASKA									
ARIZONA	13	23	48	56	45	64	72	68	77
ARKANSAS	4	9	9	19	22	48	59	71	73
CALIFORNIA	11	18	13	7	17	26	33	44	58
COLORADO	3	27	58	31	1	58	57	64	72
CONNECTICUT	5	17	25	43	36	33	37	31	30
DELAWARE	10	20	29	30	41	45	62	59	59
FLORIDA	21	27	37	26		65	60	62	65
GEORGIA	11	15	36	44	49	63	62	51	54
HAWAII	16	33	62	73	77	37	29	44	62
IDAHO	1	3	6	5	-28	-32	-23	-13	-11
ILLINOIS	6	20	23	11	8	9	8	3	3
INDIANA	-2	-6	-16	-11	-11	-13	-16	-9	-9
IOWA	10	-0	5	3	2	7	13	22	31
KANSAS	1	7	16	19	29	32	45	67	79
KENTUCKY	4	4	22	24	36	36	50	55	64
LOUISIANA	-1	-8	6	4	7	12	16	75	81
MAINE									
MARYLAND	7	13	29	39	44	47	49	35	29
MASSACHUSETTS	5	20	35	48	53	65	69	76	81
MICHIGAN	2	1	3	7	13	10	15	22	15
MINNESOTA	4	8	13	19	19	21	15	38	38
MISSISSIPPI	-5	-11	18	28	41	52	62	72	71
MISSOURI	15	19	12	18	21	22	21	20	21
MONTANA	7	10	11	6	-0	4	1	16	17
NEBRASKA	21	35	53	61	53	73	82	149	190
NEVADA									
NEW HAMPSHIRE	-0	18	13	17					
NEW JERSEY	14	26	61	122	128	133	147	130	134
NEW MEXICO	0	7	16	21	30	32	35	60	78
NEW YORK	9	19	28	23	23	24	22	27	20
NORTH CAROLINA	4	18	28	40	35	44	67	91	103
NORTH DAKOTA									
OHIO	9	21	20	28	30	33	35	51	47
OKLAHOMA	5	10	19	28	23	25	29	45	60
OREGON									
PENNSYLVANIA	12	24	17	21	26	24	25	35	31
RHODE ISLAND	6	19	41	27	33	42	42	37	40
SOUTH CAROLINA	5	32	36	55	109	152	188	184	169
SOUTH DAKOTA									
TENNESSEE	5	7	9	21	29	37	39	38	44
TEXAS	2	16	16	26	27	44	37	85	85
UTAH	7	9	16	21	27	35	45		
VERMONT	10	12	13	7	8	13	10	3	-3
VIRGINIA	25	22	51	59	91	95	109	120	135
WASHINGTON	1	12	11	-6	-4	3	8	12	16
WEST VIRGINIA	0	2	4	16	23	19	15	18	27
WISCONSIN	9	9	13	30	41	38	36	35	41
WYOMING	-6	12	5	15	9	10	28	47	50

Appendix D-16 (continued)

ADVANCED GRADUATE AND RESEARCH UNIVERSITIES: Constant dollars

States	Fiscal years 1968 1969	1969 1970	1970 1971	1971 1972	1972 1973	1973 1974	1974 1975	1975 1976	1976 1977	1977 1977	1968 1972
ALABAMA	-13	17	2	16	7	31	-0	14	-9	35	21
ALASKA											
ARIZONA	13	9	19	5	-7	13	4	-2	5	22	56
ARKANSAS	4	4	-0	9	2	21	7	7	0	41	19
CALIFORNIA	11	6	-3	-5	8	8	5	7	9	35	7
COLORADO	3	23	24	-17	-22	55	-0	4	4	69	31
CONNECTICUT	5	11	6	14	-4	-2	2	-4	-1	-4	43
DELAWARE	10	8	7	0	9	2	11	-1	-0	12	30
FLORIDA	21	4	6	-8			-2	0	2		26
GEORGIA	11	3	18	5	3	9	-0	-6	2	3	44
HAWAII	16	15	22	6	2	-22	-5	11	12	-8	73
IDAHO	1	2	2	-0	-32	-5	13	12	2	24	5
ILLINOIS	6	13	2	-9	-3	0	0	-4	0	-3	11
INDIANA	-2	-4	-10	6	0	-2	-3	8	0	2	-11
IOWA	10	-10	6	-2	-1	5	5	7	7	28	3
KANSAS	1	6	8	2	8	2	9	15	6	38	19
KENTUCKY	4	0	16	2	8	0	10	3	5	21	24
LOUISIANA	-1	-6	15	-2	2	-5	2	51	3	69	4
MAINE											
MARYLAND	7	5	14	7	3	2	1	-9	-4	-10	39
MASSACHUSETTS	5	14	12	9	3	7	2	4	2	18	48
MICHIGAN	2	-1	2	3	6	-2	4	5	-5	1	7
MINNESOTA	4	4	4	6	-0	1	-5	20	-0	15	19
MISSISSIPPI	-5	-6	34	7	10	8	6	6	-0	21	28
MISSOURI	15	3	-5	5	2	0	-0	-0	0	-0	18
MONTANA	7	3	1	-4	-6	4	-2	14	0	18	6
NEBRASKA	21	11	12	5	-4	13	4	37	16	89	61
NEVADA											
NEW HAMPSHIRE	-0	19	-4	3							17
NEW JERSEY	14	10	27	38	2	2	5	-7	1	2	122
NEW MEXICO	0	7	8	4	7	1	2	18	11	36	21
NEW YORK	9	9	7	-4	0	1	-2	4	-5	-2	23
NORTH CAROLINA	4	13	8	9	-3	6	15	14	6	49	40
NORTH DAKOTA											
OHIO	9	10	-1	6	1	2	1	11	-2	12	28
OKLAHOMA	5	4	8	7	-3	1	3	12	10	29	28
OREGON						1	-1	14	2	17	
PENNSYLVANIA	12	11	-5	3	4	-1	0	6	-3	3	21
RHODE ISLAND	6	12	17	-9	5	6	0	-3	2	4	27
SOUTH CAROLINA	5	25	2	14	34	20	14	-1	-5	29	55
SOUTH DAKOTA						9	3	1	-0	14	
TENNESSEE	5	2	1	10	5	7	1	-0	4	12	21
TEXAS	2	13	0	8	0	12	-4	35	0	45	26
UTAH	7	2	5	4	5	6	7				21
VERMONT	10	1	1	-5	0	4	-2	-5	-6	-10	7
VIRGINIA	25	-2	23	5	19	2	7	5	6	23	99
WASHINGTON	1	11	-1	-15	1	8	4	4	3	22	-6
WEST VIRGINIA	0	2	1	11	5	-2	-3	2	8	3	16
WISCONSIN	9	-0	4	14	7	-1	-1	-0	4	0	30
WYOMING	-6	19	-5	9	-5	8	8	14	1	36	15

Appendix D-16 (continued)

OTHER UNIVERSITIES AND COLLEGES: Unadjusted dollars

States	Fiscal years 1968 1969	1968 1970	1968 1971	1968 1972	1968 1973	1968 1974	1968 1975	1968 1976	1968 1977
ALABAMA	12	39	55	62	30	78	85	253	245
ALASKA									
ARIZONA	21	42	81	104	112	148	162	165	198
ARKANSAS	19	37	56	79	90	134	176	225	272
CALIFORNIA	23	47	66	63	92	120	150	176	215
COLORADO	14	61	37	43	63	80	105	134	162
CONNECTICUT	14	40	62	75	70	76	92	72	98
DELAWARE	23	89	114	112	153	194	332	406	407
FLORIDA	43	75	118	139		196	298	139	146
GEORGIA	28	40	67	87	103	154	179	177	203
HAWAII									
IDAHO	94	730	971	1230	2953	3096	3759	4446	4940
ILLINOIS	22	45	69	75	96	106	122	121	147
INDIANA	16	19	103	128	143	159	177	225	255
IOWA	23	26	38	49	57	79	108	151	189
KANSAS	12	31	46	50	67	85	108	148	181
KENTUCKY	24	59	79	100	131	144	176	195	243
LOUISIANA	3	-2	22	28	-11	-3	4	16	22
MAINE	-0	26	42	51	62	95	116	114	97
MARYLAND	7	37	66	101	122	134	155	203	200
MASSACHUSETTS	12	43	75	102	124	134	159	138	153
MICHIGAN	17	65	93	119	150	257	262	177	164
MINNESOTA	9	47	61	91	96	97	101	146	174
MISSISSIPPI	22	30	75	109	139	168	202	225	233
MISSOURI	17	35	40	59	74	95	107	122	155
MONTANA	17	33	35	41	46	39	43	83	99
NEBRASKA	38	151	165	206	254	258	351	161	233
NEVADA	4	25	33	52	65	96	113	158	171
NEW HAMPSHIRE	26	16	21	4					
NEW JERSEY	27	62	120	159	238	314	339	340	367
NEW MEXICO	0	16	29	41	49	65	92	75	98
NEW YORK	26	43	54	68	52	63	99	87	65
NORTH CARCLINA	13	42	56	78	89	129	174	242	286
NORTH DAKOTA	25	35	45	47	61	98	98	207	207
OHIO	20	46	64	79	89	111	141	161	191
OKLAHOMA	12	28	43	60	62	90	120	159	201
OREGON									
PENNSYLVANIA	32	61	83	94	137	167	200	279	299
RHODE ISLAND	30	59	87	84	93	141	163	176	210
SOUTH CAROLINA	8	36	59	102	137	179	316	345	366
SOUTH DAKOTA									
TENNESSEE	12	58	88	124	158	175	192	214	254
TEXAS	9	38	44	78	93	159	165	230	242
UTAH	13	34	47	67	90	117	144		
VERMONT	9	24	31	16	29	45	61	62	68
VIRGINIA	33	50	90	119	96	114	166	199	250
WASHINGTON	21	48	81	72	82	121	134	154	172
WEST VIRGINIA	12	25	36	52	68	75	90	96	139
WISCONSIN	26	44	75	115	132	138	150	148	172
WYOMING	NA	NA	NA	NA	NA	NA	NA	NA	NA

Appendix D-16 (continued)

OTHER UNIVERSITIES AND COLLEGES: Unadjusted dollars

States	Fiscal years										
	1968 1969	1969 1970	1970 1971	1971 1972	1972 1973	1973 1974	1974 1975	1975 1976	1976 1977	1973 1977	1968 1972
ALABAMA	12	23	11	4	-19	36	4	90	-2	109	62
ALASKA											
ARIZONA	21	17	27	12	3	16	5	2	10	40	104
ARKANSAS	19	14	14	13	6	23	17	17	14	95	79
CALIFORNIA	23	19	7	3	17	14	13	10	13	64	63
COLORADO	14	40	-14	4	13	10	13	14	12	61	43
CONNECTICUT	14	23	15	7	-3	3	9	-10	14	16	75
DELAWARE	23	52	13	-1	19	16	46	17	-0	100	112
FLORIDA	43	22	24	9			34	-39	2		139
GEORGIA	26	9	19	11	8	24	9	-0	9	48	67
HAWAII			84	-13	1	25	3	77	7	146	
IDAHO	94	327	29	24	129	4	20	17	10	68	1230
ILLINOIS	22	19	16	3	12	4	7	-0	11	25	75
INDIANA	10	8	74	9	6	6	6	17	9	45	128
IOWA	23	2	9	7	5	13	16	20	15	64	49
KANSAS	12	17	11	2	11	10	12	19	13	68	50
KENTUCKY	24	27	12	11	15	5	12	7	16	40	100
LOUISIANA	3	-5	22	4	-31	9	8	11	5	39	28
MAINE	-0	27	12	6	7	20	10	-0	-7	21	51
MARYLAND	7	28	20	21	10	5	9	18	-0	38	101
MASSACHUSETTS	12	27	22	15	11	4	10	-7	6	12	102
MICHIGAN	17	40	18	11	14	42	1	-23	2	13	119
MINNESOTA	9	35	13	14	2	0	1	22	11	39	91
MISSISSIPPI	22	6	34	19	14	11	12	7	2	38	109
MISSOURI	17	18	0	13	9	11	6	7	19	45	59
MONTANA	17	13	4	1	3	-4	2	28	8	36	41
NEBRASKA	38	21	13	7	15	1	26	-42	27	-3	206
NEVADA	4	19	6	13	9	18	8	20	5	63	82
NEW HAMPSHIRE	26	-8	4	-14							4
NEW JERSEY	27	27	38	17	30	22	6	0	6	35	189
NEW MEXICO	0	15	15	4	5	10	16	-8	13	32	41
NEW YORK	26	13	7	8	-9	7	21	-6	-9	11	68
NORTH CAROLINA	13	27	8	14	5	21	19	25	12	104	78
NORTH DAKOTA	25	3	6	2	9	23	0	54	0	90	47
OHIO	20	21	12	8	5	12	14	8	11	64	76
OKLAHOMA	12	14	11	11	1	17	16	17	16	65	60
OREGON						7	1	61	1	77	
PENNSYLVANIA	32	22	1	15	22	12	12	26	5	68	94
RHODE ISLAND	30	21	18	-1	4	25	9	4	12	61	84
SOUTH CAROLINA	8	29	16	27	17	17	48	6	4	96	102
SOUTH DAKOTA						2	8	4	3	29	
TENNESSEE	12	41	19	18	15	6	6	7	12	37	124
TEXAS	9	23	6	24	8	34	2	24	3	77	78
UTAH	13	18	9	13	13	14	12				67
VERMONT	9	13	5	-11	11	12	11	0	3	30	16
VIRGINIA	30	15	26	14	-10	8	24	12	16	78	119
WASHINGTON	21	22	22	-5	6	21	5	8	7	45	72
WEST VIRGINIA	12	11	8	11	10	4	8	3	21	42	82
WISCONSIN	26	13	21	22	7	2	5	-1	9	17	115
WYOMING	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

159

Appendix D-16 (continued)

OTHER UNIVERSITIES AND COLLEGES: Constant dollars

States	Fiscal years 1968 1969	1968 1970	1968 1971	1968 1972	1968 1973	1968 1974	1968 1975	1968 1976	1968 1977
ALABAMA	5	22	28	26	-3	23	18	111	94
ALASKA									
ARIZONA	13	24	49	59	57	71	67	60	67
ARKANSAS	12	20	30	40	41	62	76	94	109
CALIFORNIA	15	29	30	27	42	52	59	65	77
COLORADO	7	41	13	12	20	24	31	40	47
CONNECTICUT	6	23	34	36	26	22	22	3	11
DELAWARE	15	65	77	66	87	104	176	204	185
FLORIDA	34	53	80	87		104	153	43	38
GEORGIA	20	23	38	46	51	76	78	66	70
HAWAII									
IDAHO	81	627	782	938	2163	2113	2361	2619	2733
ILLINOIS	14	27	39	36	45	42	41	32	39
INDIANA	3	5	72	78	80	79	76	94	99
IOWA	16	11	13	16	16	24	33	50	62
KANSAS	5	15	21	17	24	28	32	48	58
KENTUCKY	16	39	47	56	71	69	76	77	93
LOUISIANA	-3	-14	0	0	-34	-33	-33	-30	-30
MAINE	-6	11	17	18	20	35	37	28	10
MARYLAND	0	20	36	56	64	62	63	81	69
MASSACHUSETTS	5	25	44	58	66	62	65	42	42
MICHIGAN	10	44	62	71	85	147	131	65	59
MINNESOTA	2	29	37	49	45	36	28	47	54
MISSISSIPPI	14	14	44	63	77	85	92	94	87
MISSOURI	10	22	15	24	29	35	32	135	170
MONTANA	9	16	15	10	8	-3	-8	10	11
NEBRASKA	30	120	135	139	162	148	187	56	87
NEVADA	-1	9	10	18	23	36	36	54	52
NEW HAMPSHIRE	18	2	0	-18					
NEW JERSEY	19	42	81	102	151	187	180	163	163
NEW MEXICO	-5	2	11	10	11	14	22	5	11
NEW YORK	18	25	27	31	13	13	27	11	-4
NORTH CAROLINA	6	26	28	39	40	58	74	105	117
NORTH DAKOTA	17	18	19	15	19	37	26	83	72
OHIO	12	28	35	39	40	46	54	56	63
OKLAHOMA	5	12	18	25	20	31	40	54	69
OREGON									
PENNSYLVANIA	23	41	34	51	76	85	91	126	124
RHODE ISLAND	22	39	54	43	43	67	68	65	74
SOUTH CAROLINA	1	19	31	57	76	93	165	166	161
SOUTH DAKOTA									
TENNESSEE	5	39	55	74	91	90	86	87	99
TEXAS	2	19	18	39	43	79	69	97	92
UTAH	6	18	21	31	41	50	55		
VERMONT	2	9	8	-9	-4	0	3	-2	-5
VIRGINIA	22	32	57	71	45	48	69	79	96
WASHINGTON	13	30	49	34	35	53	49	52	53
WEST VIRGINIA	5	10	12	13	24	21	21	17	34
WISCONSIN	19	26	44	68	72	65	59	48	52
WYOMING	NA	NA	NA	NA	NA	NA	NA	NA	NA

Appendix D-16 (continued)

OTHER UNIVERSITIES AND COLLEGES: Constant dollars

States	Fiscal years										
	1968 1969	1969 1970	1970 1971	1971 1972	1972 1973	1973 1974	1974 1975	1975 1976	1976 1977	1973 1977	1968 1972
ALABAMA	5	15	4	-1	-23	27	-4	78	-8	101	26
ALASKA											
ARIZONA	13	9	15	6	-1	9	-2	-3	4	6	59
ARKANSAS	12	7	8	7	0	14	6	10	7	47	40
CALIFORNIA	15	12	0	-1	11	7	4	3	7	24	27
COLORADO	7	31	-20	-0	7	3	4	7	5	22	12
CONNECTICUT	6	15	8	2	-7	-3	0	-15	7	-11	36
DELAWARE	15	43	6	-6	13	8	35	10	-6	52	66
FLORIDA	34	14	17	3			23	-43	-3		87
GEORGIA	20	2	12	5	3	16	1	-6	2	12	46
HAWAII			73	-18	-3	17	-5	66	1	87	
IDAHO	81	299	21	17	117	-2	11	10	4	25	938
ILLINOIS	14	11	9	-2	6	-1	-0	-6	4	-4	36
INDIANA	3	1	64	3	1	-0	-1	5	2	10	78
IOWA	16	-4	2	2	0	6	7	13	8	39	16
KANSAS	5	9	4	-3	5	3	3	12	6	27	17
KENTUCKY	16	15	6	6	9	-1	3	0	9	12	56
LOUISIANA	-3	-11	18	-0	-34	2	0	4	-1	5	0
MAINE	-6	18	5	0	1	12	2	-7	-13	-7	18
MARYLAND	0	20	13	14	5	-1	0	11	-6	2	56
MASSACHUSETTS	5	19	15	9	5	-2	2	-13	-0	-14	58
MICHIGAN	10	31	11	5	8	33	-6	-28	-3	-13	71
MINNESOTA	2	26	6	8	-2	-6	-6	15	4	5	49
MISSISSIPPI	14	-0	26	13	8	4	3	1	-3	5	63
MISSOURI	10	11	-5	7	4	4	-2	78	14	108	24
MONTANA	9	6	-1	-4	-1	-10	-5	20	1	3	10
NEBRASKA	30	69	6	1	9	-5	16	-45	19	-28	139
NEVADA	-1	11	0	7	3	10	-0	13	-1	24	18
NEW HAMPSHIRE	18	-14	-1	-19							-18
NEW JERSEY	19	19	27	11	23	14	-2	-6	-0	4	102
NEW MEXICO	-5	8	8	-0	0	3	6	-14	6	0	10
NEW YORK	18	6	1	3	-14	0	12	-12	-14	-15	31
NORTH CAROLINA	6	18	2	8	0	13	10	17	5	55	39
NORTH DAKOTA	17	1	0	-3	3	14	-7	44	-6	44	15
OHIO	12	13	5	3	0	4	5	1	4	17	39
OKLAHOMA	5	6	5	5	-4	9	7	9	9	40	25
OREGON						-0	-6	51	-5	34	
PENNSYLVANIA	23	14	-4	12	16	5	3	18	-0	27	91
RHODE ISLAND	22	14	11	-7	-0	16	0	-1	5	22	43
SOUTH CAROLINA	1	17	9	20	11	10	36	0	-1	48	57
SOUTH DAKOTA						-3	-0	-1	-2	-8	
TENNESSEE	5	32	12	12	9	-0	-2	0	5	3	74
TEXAS	2	15	-0	17	2	25	-5	16	-2	34	39
UTAH	6	10	3	7	7	6	3				31
VERMONT	2	6	-0	-16	5	5	2	-5	-2	-1	-9
VIRGINIA	22	7	19	8	-14	1	14	5	9	36	71
WASHINGTON	13	14	15	-10	0	13	-2	1	0	12	34
WEST VIRGINIA	5	4	2	5	4	-2	0	-3	14	7	18
WISCONSIN	18	6	14	16	2	-4	-3	-7	3	-11	68
WYOMING	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Appendix D-16 (continued)

TWO-YEAR COLLEGES: Unadjusted dollars

States	Fiscal years 1968 1969	1968 1970	1968 1971	1968 1972	1968 1973	1968 1974	1968 1975	1968 1976	1968 1977
ALABAMA	0	38	51	83	98	160	196	321	330
ALASKA									
ARIZONA	7	38	74	127	183	217	302	375	390
ARKANSAS	46	112	233	169	293	728	815	1421	1666
CALIFORNIA	15	42	82	96	109	214	262	349	458
COLORADO									
CONNECTICUT	21	100	137	175	217	233	287	274	291
DELAWARE	102	190	229	270	352	456	691	883	889
FLORIDA	9	51	83	103	150	175	228	244	264
GEORGIA	16	34	58	70	92	158	198	212	257
HAWAII	34	77	151	193	227	236	316	389	504
IDAHO	8	-6	23	42	81	149	180	244	287
ILLINOIS	-1	76	120	169	219	277	323	378	462
INDIANA	676	901	872	1259	1444	1863	2276	3457	4415
IOWA	0	46	46	74	90	125	142	249	295
KANSAS	60	97	127	138	140	474	484	644	679
KENTUCKY	23	75	77	129	179	177	187	218	296
LOUISIANA	12	16	50	46	102	127	173	250	303
MAINE									
MARYLAND	11	124	265	373	469	548	525	715	783
MASSACHUSETTS	22	69	126	171	211	222	278	382	301
MICHIGAN	42	118	127	161	200	249	289	367	426
MINNESOTA	7	64	97	128	149	157	156	235	275
MISSISSIPPI	24	62	78	106	127	175	210	324	327
MISSOURI	15	37	37	79	130	143	138	193	311
MONTANA									
NEBRASKA	6	83	119	156	249	401	530	1082	685
NEVADA									
NEW HAMPSHIRE									
NEW JERSEY	-37	10	58	187	313	345	333	353	415
NEW MEXICO	61	120	179	191	236	242	350	560	714
NEW YORK	15	47	127	206	229	275	293	394	421
NORTH CAROLINA	77	126	145	214	234	416	505	538	608
NORTH DAKOTA	24	46	61	79	84	123	123	185	185
OHIO	17	112	131	182	221	320	387	510	658
OKLAHOMA	13	32	104	166	202	261	371	519	725
OREGON									
PENNSYLVANIA	36	51	73	118	143	185	273	362	360
RHODE ISLAND	45	92	132	151	364	405	439	473	657
SOUTH CAROLINA	55	100	88	166	224	336	476	174	175
SOUTH DAKOTA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TENNESSEE	60	146	228	345	483	567	655	716	1018
TEXAS	15	62	81	123	162	222	258	414	518
UTAH	10	26	48	69	103	140	175		
VERMONT	11	45	81	81	73	103	123	151	132
VIRGINIA	88	119	161	237	398	511	586	747	824
WASHINGTON	19	53	77	91	109	147	183	217	258
WEST VIRGINIA	5	46	65	17	234	272	342	489	581
WISCONSIN	-23	-12	-2	-7	16	17	17	22	25
WYOMING	0	60	60	205	210	307	421	605	664

Appendix D-16 (continued)

TWO-YEAR COLLEGES: Unadjusted dollars

States	Fiscal years 1968 1969	1969 1970	1970 1971	1971 1972	1972 1973	1973 1974	1974 1975	1975 1976	1976 1977	1973 1977	1968 1972
ALABAMA	0	36	9	20	8	31	13	42	2	117	83
ALASKA											
ARIZONA	7	28	25	30	24	11	27	17	3	73	127
ARKANSAS	46	45	56	-19	49	110	10	66	16	349	169
CALIFORNIA	15	23	28	7	6	50	15	23	24	166	96
COLORADO		87	41	3	8	11	3	14	26	60	
CONNECTICUT	21	64	18	15	15	4	16	-3	4	23	175
DELAWARE	102	43	13	12	22	22	42	24	0	117	270
FLORIDA	9	38	20	10	23	9	19	4	5	45	103
GEORGIA	16	15	17	7	13	34	15	4	14	65	70
HAWAII	34	31	42	16	11	2	23	17	23	84	193
IDAHO	8	-13	32	14	27	37	12	22	12	113	42
ILLINOIS	-1	78	25	22	18	17	12	12	17	75	169
INDIANA	676	28	-2	39	13	27	21	49	26	192	1259
IOWA	0	46	0	19	9	18	7	44	13	107	74
KANSAS	60	23	15	4	0	130	1	27	4	224	138
KENTUCKY	23	42	1	28	22	-1	3	10	24	41	129
LOUISIANA	12	3	28	-2	37	12	20	28	15	55	46
MAINE											
MARYLAND	11	101	62	29	20	13	-3	30	8	68	373
MASSACHUSETTS	22	38	33	19	14	3	17	27	-16	28	171
MICHIGAN	42	50	5	14	15	16	11	20	12	75	161
MINNESOTA	7	53	20	15	9	2	-0	30	11	60	128
MISSISSIPPI	34	13	17	16	9	21	12	36	0	87	106
MISSOURI	15	19	0	29	28	5	-1	23	40	78	79
MONTANA						8	9	18	7	52	
NEBRASKA	6	72	19	17	35	43	25	87	-33	124	188
NEVADA			16	321	48	208	34	20	53	663	
NEW HAMPSHIRE											
NEW JERSEY	-37	76	43	81	43	7	-2	4	13	24	187
NEW MEXICO	61	36	24	5	15	1	31	46	23	142	191
NEW YORK	15	27	54	34	7	14	4	25	5	58	206
NORTH CAROLINA	77	27	8	28	6	54	17	5	10	111	214
NORTH DAKOTA	24	17	10	11	3	20	0	27	0	56	79
OHIO	17	81	8	22	13	30	15	25	24	132	182
OKLAHOMA	13	17	54	25	13	19	30	31	33	173	166
OREGON		53	0	23	-0	11	14	26	16	68	
PENNSYLVANIA	36	10	14	25	11	17	30	23	6	101	118
RHODE ISLAND	45	32	21	8	84	8	8	6	32	63	151
SOUTH CAROLINA	55	28	-5	41	21	34	32	-52	0	-16	166
SOUTH DAKOTA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TENNESSEE	60	53	33	35	30	14	13	7	37	91	345
TEXAS	15	40	12	22	17	22	11	43	20	136	123
UTAH	10	14	17	14	20	18	14				69
VERMONT	11	30	24	0	-4	17	9	12	-7	34	81
VIRGINIA	85	16	19	28	47	22	12	23	9	85	237
WASHINGTON	19	28	15	7	9	18	14	12	12	70	91
WEST VIRGINIA	5	41	11	-29	185	11	18	33	15	103	17
WISCONSIN	-23	13	11	-4	26	0	0	4	2	7	-7
WYOMING	0	60	0	90	1	31	30	32	8	145	205

Appendix D-16 (continued)

TWO-YEAR COLLEGES: Constant dollars

States	Fiscal years 1968 1969	1968 1970	1968 1971	1968 1972	1968 1973	1968 1974	1968 1975	1968 1976	1968 1977
ALABAMA	-6	21	25	43	46	80	89	152	141
ALASKA									
ARIZONA	1	21	43	77	110	119	157	184	175
ARKANSAS	36	86	174	110	191	473	483	809	892
CALIFORNIA	8	24	50	53	55	117	131	168	213
COLORADO									
CONNECTICUT	14	75	95	114	135	130	147	123	119
DELAWARE	89	154	171	189	235	285	404	488	453
FLORIDA	2	32	50	58	85	90	109	106	104
GEORGIA	9	18	30	32	42	78	90	87	100
HAWAII	25	55	107	129	142	132	165	192	239
IDAHO	1	-18	2	11	34	72	78	105	117
ILLINOIS	-7	54	81	116	137	161	170	186	215
INDIANA	627	776	701	961	1044	1259	1415	2027	2437
IOWA	-6	28	20	36	41	55	54	109	122
KANSAS	50	73	87	86	78	297	273	345	338
KENTUCKY	15	53	46	78	107	91	83	90	122
LOUISIANA	5	2	23	14	49	57	74	109	126
MAINE									
MARYLAND	4	96	201	269	321	348	298	387	396
MASSACHUSETTS	14	48	86	112	130	123	141	188	125
MICHIGAN	33	88	87	104	122	141	148	179	196
MINNESOTA	0	44	63	78	85	78	63	100	111
MISSISSIPPI	26	33	47	61	68	91	97	154	140
MISSOURI	8	20	13	39	71	68	51	75	336
MONTANA									
NEBRASKA	0	61	80	101	158	247	302	607	341
NEVADA									
NEW HAMPSHIRE									
NEW JERSEY	-41	-3	30	124	206	208	176	171	189
NEW MEXICO	51	93	126	127	149	137	187	294	358
NEW YORK	7	28	87	139	144	160	151	196	193
NORTH CAROLINA	65	97	102	145	147	257	286	281	297
NORTH DAKOTA	16	28	32	39	36	54	42	70	60
OHIO	9	86	91	120	139	191	210	265	326
OKLAHOMA	6	16	68	107	124	150	200	270	364
OREGON									
PENNSYLVANIA	28	32	43	70	80	97	138	176	175
RHODE ISLAND	36	68	91	96	244	250	243	243	325
SOUTH CAROLINA	45	75	55	108	140	202	267	63	54
SOUTH DAKOTA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TENNESSEE	50	115	170	247	332	362	382	398	526
TEXAS	8	42	49	74	94	123	128	207	247
UTAH	3	10	22	32	50	66	75		
VERMONT	4	27	49	41	28	40	42	50	30
VIRGINIA	76	92	115	163	269	323	338	407	419
WASHINGTON	12	34	46	49	55	71	80	90	101
WEST VIRGINIA	-1	30	36	-8	147	158	182	252	283
WISCONSIN	-28	-23	-10	-27	-13	-18	-25	-26	-29
WYOMING	-6	40	32	138	130	182	239	321	329

Appendix D-16 (continued).

TWO-YEAR COLLEGES: Constant dollars

States	Fiscal years 1968 1969	1969 1970	1970 1971	1971 1972	1972 1973	1973 1974	1974 1975	1975 1976	1976 1977	1973 1977	1968 1972
ALABAMA	-6	29	3	14	2	22	4	33	-4	64	43
ALASKA											
ARIZONA	1	20	16	23	18	4	17	10	-2	31	77
ARKANSAS	36	36	47	-23	38	96	1	55	9	240	110
CALIFORNIA	8	15	21	1	1	40	6	16	16	102	53
COLORADO		75	32	-1	2	4	-4	7	19	27	
CONNECTICUT	14	53	11	9	9	-1	7	-9	-1	-6	114
DELAWARE	89	33	6	6	16	14	31	16	-5	65	189
FLORICA	2	29	13	5	17	2	10	-1	-0	10	58
GEORGIA	9	8	10	1	7	25	8	-1	7	40	32
HAWAII	25	23	33	10	6	-4	14	10	16	39	129
IDAHO	1	-19	24	8	20	28	3	15	5	61	11
ILLINOIS	-7	66	17	15	12	10	3	5	10	33	110
INDIANA	627	20	-8	32	7	18	11	40	19	121	961
IOWA	-6	37	-5	12	3	10	-0	35	6	57	36
KANSAS	50	15	8	-0	-4	123	-6	19	-1	146	86
KENTUCKY	15	32	-4	21	16	-7	-4	3	16	7	78
LOUISIANA	5	-2	21	-7	30	4	10	20	8	51	14
MAINE											
MARYLAND	4	88	53	22	14	6	-11	22	1	17	269
MASSACHUSETTS	14	29	28	13	8	-3	7	19	-21	-2	112
MICHIGAN	33	41	-0	8	9	8	2	12	5	32	104
MINNESOTA	0	43	13	9	3	-3	-8	22	8	13	78
MISSISSIPPI	26	5	10	9	4	13	3	28	-5	42	61
MISSOURI	8	11	-5	22	22	-1	-9	15	145	154	39
MONTANA						1	0	11	1	15	
NEBRASKA	0	61	12	11	28	34	15	75	-37	70	101
NEVADA			9	299	41	188	23	12	43	479	
NEW HAMPSHIRE											
NEW JERSEY	-41	65	34	72	36	0	-10	-1	8	-5	124
NEW MEXICO	51	27	17	0	9	-4	21	37	15	83	127
NEW YORK	7	19	45	27	2	6	-3	17	-0	20	139
NORTH CAROLINA	65	19	2	21	0	44	8	-1	4	60	145
NORTH DAKOTA	16	10	3	5	-2	12	-7	19	-6	17	39
OHIO	9	69	2	15	7	22	6	17	16	78	120
OKLAHOMA	6	9	45	23	7	11	20	23	25	107	107
OREGON		43	-5	17	-5	3	5	18	9	43	
PENNSYLVANIA	28	3	7	19	6	9	20	16	-0	52	70
RHODE ISLAND	36	23	13	2	75	1	-1	-0	24	23	96
SOUTH CAROLINA	45	20	-11	33	15	25	21	-55	-5	-35	108
SOUTH DAKOTA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TENNESSEE	50	43	25	28	24	6	4	1	28	45	247
TEXAS	8	31	5	16	11	14	2	34	13	78	74
UTAH	3	7	10	8	14	10	5				32
VERMONT	4	21	17	-5	-9	9	1	5	-13	1	41
VIRGINIA	76	9	12	22	40	14	3	15	2	40	163
WASHINGTON	12	20	8	1	3	10	5	5	5	29	49
WEST VIRGINIA	-1	32	4	-32	171	4	9	24	8	54	-8
WISCONSIN	-28	6	4	-9	20	-6	-7	-1	-3	-18	-27
WYOMING	-6	50	-5	80	-3	22	20	24	1	86	138

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Appendix D-17. Percentage Change in FTE Enrollments in Public Institutions: Advanced Graduate and Research Universities, Other Universities and Colleges, and Two-year Colleges, 1968-1977, by Type of Institution and State

ADVANCED GRADUATE AND RESEARCH UNIVERSITIES

States	Fiscal years										
	1968 1969	1969 1970	1970 1971	1971 1972	1972 1973	1973 1974	1974 1975	1975 1976	1976 1977	1973 1977	1968 1972
ALABAMA	-0	2	1	9	19	4	4	-1	0	8	14
ALASKA											
ARIZONA	5	6	4	2	-0	3	5	4	-1	11	19
ARKANSAS	1	4	3	2	-4	-5	0	8	5	7	12
CALIFORNIA	6	3	2	0	4	6	1	6	-0	14	13
COLORADO	9	6	4	3	3	-0	-1	1	0	-0	27
CONNECTICUT	3	7	9	7	-3	1	6	-1	-3	3	30
DELAWARE	12	12	3	10	8	3	6	-2	0	7	52
FLORIDA	12	6	7	6	7	1	1	5	-1	6	35
GEORGIA	5	6	5	7	7	1	0	24	-0	25	26
HAWAII	2	9	13	5	-0	-0	-4	-3	-0	-8	34
IDAHO						4	-1	2	2	9	
ILLINOIS	12	8	7	-1	-1	-1	-0	5	2	4	29
INDIANA			3	4	0	0	3	5	2	12	-2
IOWA	5	4	1	-0	-1	-3	8	-3	0	1	11
KANSAS	6	5	1	4	1	0	4	1	2	9	19
KENTUCKY	2	6	56	8	1	6	2	8	3	22	85
LOUISIANA	5	1	4	7	28	0	0	-8	-1	-8	20
MAINE											
MARYLAND	7	2	0	4	1	-0	3	-9	1	-5	16
MASSACHUSETTS	30	10	8	9	8	8	2	3	2	16	70
MICHIGAN							12	-10	-4		
MINNESOTA	3	8	0	1	-1	-2	2	5	0	6	13
MISSISSIPPI	-0	-1	5	7	8	-0	3	7	1	12	11
MISSOURI	7	2	3	1	0	0	-1	0	-1	-1	16
MONTANA	8	11	4	1	-2	-2	3	4	0	5	27
NEBRASKA	4	6	1	2	0	-5	-2	119	-1	100	16
NEVADA											
NEW HAMPSHIRE	0	42	0	5							47
NEW JERSEY	1	4	12	10	-3	6	8	-19	1	-5	32
NEW MEXICO	4	6	11	10	-1	1	2	9	0	14	37
NEW YORK	13	13	12	3	-0	4	4	7	-2	13	49
NORTH CAROLINA	5	3	8	3	1	4	5	6	-0	15	23
NORTH DAKOTA											
OHIO	8	9	5	1	3	0	1	1	-0	1	26
OKLAHOMA	2	3	2	0	-0	1	2	7	0	12	8
OREGON						-0	3	-1	-2	-1	
PENNSYLVANIA	5	5	5	4	2	5	1	4	0	13	22
RHODE ISLAND	7	6	12	-1	3	1	2	39	-11	29	28
SOUTH CAROLINA	5	4	8	10	10	7	3	6	-0	17	31
SOUTH DAKOTA						-3	0	3	0	0	
TENNESSEE	-4	2	4	5	0	1	1	6	-1	7	8
TEXAS	6	5	4	2	0	1	3	16	1	23	20
UTAH	3	3	1	5	11	-1	2				13
VERMONT	7	15	7	4	6	11	-2	1	3	13	30
VIRGINIA	10	6	2	8	32	5	1	4	3	16	37
WASHINGTON	6	5	9	-2	2	0	0	2	1	4	18
WEST VIRGINIA	7	-1	4	5	-3	6	0	16	0	29	16
WISCONSIN	5	5	0	1	0	4	1	1	-2	5	13
WYOMING		14	-7	1	13	-4	0	5	1	1	

Appendix D-17 (continued)

OTHER UNIVERSITIES AND COLLEGES

States	Fiscal years										
	1968 1969	1969 1970	1970 1971	1971 1972	1972 1973	1973 1974	1974 1975	1975 1976	1976 1977	1977 1977	1968 1972
ALABAMA	20	4	6	-9	-15	1	5	38	1	50	36
ALASKA											
ARIZONA	11	7	5	5	-2	0	4	10	1	17	32
ARKANSAS	4	10	-4	3	-3	-4	0	12	4	11	14
CALIFORNIA	15	6	8	3	7	1	3	2	-6	4	41
COLORADO	10	11	9	2	3	3	13	10	9	41	37
CONNECTICUT	15	10	11	4	0	1	0	0	-3	-0	48
DELAWARE	12	22	27	14	0	6	0	-5	6	6	100
FLORIDA	32	26	18	7	43	13	5	6	-4	21	113
GEORGIA	16	10	17	6	-4	-0	1	34	-2	33	61
HAWAII			57	9	8	7	0	21	-11	15	
IDAHO						0	1	7	-2	6	
ILLINOIS	11	8	16	6	2	5	3	7	-5	11	48
INDIANA			8	7	-3	-3	-4	5	0	-2	86
IOWA	10	4	2	-1	-8	0	-1	-4	3	-2	17
KANSAS	3	2	-1	1	-5	-1	0	1	-4	-4	6
KENTUCKY	4	2	0	5	2	-1	3	9	2	14	13
LOUISIANA	7	0	1	9	-36	11	4	-3	-0	12	19
MAINE	7	8	6	4	3	4	1	9	-4	12	31
MARYLAND	9	11	20	4	12	3	5	22	1	34	84
MASSACHUSETTS	3	-0	10	10	1	10	13	-18	-5	-2	25
MICHIGAN							42	-2	0		
MINNESOTA	11	8	3	-1	-7	-6	-4	2	1	-6	23
MISSISSIPPI	13	0	0	4	-1	-0	5	11	-2	12	21
MISSOURI	8	12	16	2	-3	-20	-1	5	2	-14	46
MONTANA	9	9	2	-10	-18	-7	1	21	1	16	9
NEBRASKA	15	8	6	-1	-5	-3	-1	-55	29	-45	30
NEVADA	16	10	9	6	-3	4	5	-1	-0	7	82
NEW HAMPSHIRE	0	33	25	0							66
NEW JERSEY	8	5	12	0	47	9	9	-5	-8	2	34
NEW MEXICO	5	8	4	5	-3	-5	-4	-10	-5	-24	27
NEW YORK	5	6	21	11	2	8	1	4	-6	7	48
NORTH CAROLINA	4	7	7	5	1	1	6	8	0	10	30
NORTH DAKOTA	7	4	1	-2	-9	-4	-2	1	-0	-5	11
OHIO	9	7	6	2	-10	-2	-0	4	0	1	26
OKLAHOMA	9	0	-0	2	-3	-2	-1	10	0	5	11
OREGON						-6	3	0	-1	-4	
PENNSYLVANIA	10	9	3	2	1	-0	0	3	0	3	28
RHODE ISLAND	5	11	17	17	3	-1	-1	39	-2	31	61
SOUTH CAROLINA	5	1	21	13	11	13	13	33	8	87	47
SOUTH DAKOTA						-11	3	5	3	0	
TENNESSEE	78	30	5	0	1	1	0	7	4	15	146
TEXAS	10	8	5	5	-0	2	8	-14	7	1	32
UTAH	6	0	4	-7	0	0	1				2
VERMONT	9	5	8	15	3	-9	21	2	11	25	60
VIRGINIA	8	11	10	6	-12	3	3	12	4	25	49
WASHINGTON	14	16	2	5	-5	-5	1	4	-2	-2	43
WEST VIRGINIA	7	1	17	2	-15	-0	0	3	4	7	31
WISCONSIN	21	11	1	0	-3	-4	0	3	1	1	37
WYOMING	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Appendix D-17 (continued).

TWO-YEAR COLLEGES

States	Fiscal years										
	1968 1969	1969 1970	1970 1971	1971 1972	1972 1973	1973 1974	1974 1975	1975 1976	1976 1977	1973 1977	1968 1972
ALABAMA	14	3	15	13	7	6	23	16	-15	28	53
ALASKA											
ARIZONA	12	12	20	24	16	11	29	19	-5	62	89
ARKANSAS	11	4	9	0	0	34	35	71	-1	208	27
CALIFORNIA	9	5	12	5	1	8	9	3	12	35	41
COLORADO	28	21	26	12	10	2	8	19	6	41	121
CONNECTICUT	28	25	17	11	-0	5	14	3	-4	15	119
DELAWARE	150	39	14	31	-19	5	38	187	1	329	426
FLORIDA	11	10	11	9	-0	7	11	133	1	188	49
GEORGIA	14	11	12	5	2	9	4	70	-5	83	50
HAWAII	42	35	13	22	14	9	6	19	0	38	168
IDAHO						10	-19	23	14	28	
ILLINOIS	22	20	15	14	6	6	7	2	-2	15	95
INDIANA			3	96	6	4	17	47	5	90	177
IOWA	11	9	9	1	22	7	4	-23	1	-13	34
KANSAS	3	26	12	6	-1	0	0	10	0	12	56
KENTUCKY	25	1	-17	21	9	3	4	25	0	36	27
LOUISIANA	63	-2	51	24	-17	22	15	-1	-5	30	295
MAINE											
MARYLAND	24	30	17	9	5	7	5	17	3	35	110
MASSACHUSETTS	41	15	3	26	-3	15	3	-6	2	13	113
MICHIGAN	20	20	8	5	3	11	13	-36	0	-15	65
MINNESOTA	26	13	9	7	-2	0	0	10	0	12	60
MISSISSIPPI	2	6	6	4	13	1	9	24	-1	35	22
MISSOURI	20	11	2	8	13	7	-2	23	-3	24	48
MONTANA		44	7	-7	-7	16	0	35	-10	41	
NEBRASKA	12	13	16	8	33	5	13	48	15	111	60
NEVADA				200	166	56	63	14	4	206	
NEW HAMPSHIRE											
NEW JERSEY	92	113	71	20	22	8	12	16	1	44	746
NEW MEXICO	20	6	-3	3	-3	19	16	14	4	66	29
NEW YORK	17	12	14	11	5	4	2	12	-10	7	65
NORTH CAROLINA	27	16	24	12	-16	1	0	18	-5	13	106
NORTH DAKOTA	3	1	3	6	0	6	0	6	1	14	16
OHIO	20	24	10	11	3	4	6	25	3	48	85
OKLAHOMA	12	0	37	23	1	12	10	23	7	66	90
OREGON	33	22	25	6	6	12	10	22	-2	48	117
PENNSYLVANIA	50	18	14	15	1	6	6	11	6	34	134
RHODE ISLAND	3	14	16	2	8	9	6	82	3	122	42
SOUTH CAROLINA	0	27	10	29	7	4	28	-53	7	-32	81
SOUTH DAKOTA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TENNESSEE	66	28	22	27	14	26	20	39	0	112	233
TEXAS	12	28	13	12	6	8	11	23			84
UTAH	16	-7	0	-7	-8	0	9				0
VERMONT	0	28	19	-16	79	11	9	36	-26	22	29
VIRGINIA	66	13	23	19	15	17	17	14	-2	54	177
WASHINGTON	9	13	18	9	4	8	4	11	-6	16	61
WEST VIRGINIA	14	8	34	25	-27	12	33	6	27	103	109
WISCONSIN	-33	21	3	-1	7	5	3	9	0	15	-17
WYOMING			15	4	-3	38	16	-3	4	61	

Appendix D-18. Percentage of State General Revenue Appropriated Directly to Public Institutions: Advanced Graduate and Research Universities, Other Universities and Colleges, and Two-year Colleges, 1968-1977, by Type of Institution and Region

ADVANCED GRADUATE AND RESEARCH UNIVERSITIES

States	Fiscal years									
	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977
ALABAMA	10	8	9	9	9	9	12	11	12	11
ALASKA										
ARIZONA	18	20	17	18	16	14	16	13	12	13
ARKANSAS	9	9	9	9	8	7	8	9	9	8
CALIFORNIA	6	7	7	7	6	6	6	6	6	5
COLORADO	12	11	13	15	11	7	10	10	10	11
CONNECTICUT	6	6	5	5	5	4	4	5	4	4
DELAWARE	5	5	5	5	5	5	4	5	5	5
FLORIDA	9	8	8	8	7		6	6	7	7
GEORGIA	6	6	6	7	7	6	6	6	6	6
HAWAII	8	10	9	11	12	11	8	7	7	8
IDAHO	20	20	18	18	18	10	10	10	10	10
ILLINOIS	14	14	11	11	10	9	8	8	8	7
INDIANA	16	17	15	14	13	13	12	11	12	12
IOWA	26	16	16	16	16	13	12	12	12	12
KANSAS	13	12	12	14	14	16	13	13	14	14
KENTUCKY	10	8	8	10	9	9	9	9	9	9
LOUISIANA	11	10	10	13	10	4	4	4	8	8
MAINE	0	0	0	0	0	0	0	0	0	0
MARYLAND	7	7	7	7	7	7	7	7	6	5
MASSACHUSETTS	3	3	3	3	3	3	3	3	3	3
MICHIGAN	11	10	11	10	9	8	7	7	6	6
MINNESOTA	9	10	8	8	7	6	6	6	5	5
MISSISSIPPI	11	8	7	9	9	10	10	10	11	11
MISSOURI	11	12	12	12	11	10	10	9	9	9
MONTANA	21	20	21	22	20	15	14	14	16	15
NEBRASKA	14	19	15	19	21	17	17	18	25	24
NEVADA	0	0	0	0	0	0	0	0	0	0
NEW HAMPSHIRE	13	13	14	10	9					
NEW JERSEY	3	3	3	3	5	5	4	4	4	4
NEW MEXICO	11	11	11	12	11	11	10	10	10	10
NEW YORK	2	2	2	2	2	2	2	2	2	2
NORTH CAROLINA	5	5	5	6	6	6	5	5	6	6
NORTH DAKOTA	0	0	0	0	0	0	0	0	0	0
OHIO	5	5	5	5	5	4	4	4	4	4
OKLAHOMA	18	15	16	16	16	16	14	14	13	13
OREGON						13	11	11	11	10
PENNSYLVANIA	6	6	6	5	5	4	4	4	4	4
RHODE ISLAND	7	7	7	7	6	6	7	6	6	6
SOUTH CAROLINA	6	6	7	7	7	9	10	11	11	9
SOUTH DAKOTA						18	20	21	19	19
TENNESSEE	13	13	13	13	12	12	12	12	12	12
TEXAS	12	12	13	14	11	11	12	11	13	13
UTAH	15	15	13	14	13	12	13	14		
VERMONT	10	10	7	8	7	6	7	7	6	6
VIRGINIA	9	9	8	9	9	10	10	10	10	10
WASHINGTON	11	11	12	11	10	10	10	10	9	9
WEST VIRGINIA	9	9	9	8	8	9	8	9	7	7
WISCONSIN	10	11	10	10	11	10	9	8	8	8
WYOMING	32	32	33	33	30	39	26	25	23	23

Appendix D-18 (continued)

OTHER UNIVERSITIES AND COLLEGES

States	Fiscal years									
	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977
ALABAMA	4	4	5	5	4	3	3	3	6	5
ALASKA										
ARIZONA	2	2	2	2	2	2	2	1	1	1
ARKANSAS	6	7	7	7	7	6	6	7	7	7
CALIFORNIA	5	6	6	7	6	6	6	5	5	5
COLORADO	5	5	6	5	4	4	3	4	4	4
CONNECTICUT	3	3	3	3	2	2	2	2	1	1
DELAWARE	0	0	0	0	0	0	0	1	1	1
FLORICA	3	3	4	4	4		3	3	2	2
GEORGIA	2	2	2	2	2	2	2	2	2	2
HAWAII	0	0	0	0	0	0	0	0	0	0
IDAHO	0	1	4	5	6	11	12	11	10	11
ILLINOIS	2	2	1	2	2	2	1	1	1	1
INDIANA	4	4	4	7	7	7	6	6	7	7
IOWA	2	1	2	1	2	1	1	1	1	1
KANSAS	6	6	6	6	6	7	6	5	6	6
KENTUCKY	7	6	8	8	8	8	7	7	7	7
LOUISIANA	7	6	6	8	6	1	1	1	2	2
MAINE	15	14	13	13	12	12	12	12	11	9
MARYLAND	2	2	2	2	3	2	2	2	2	2
MASSACHUSETTS	2	2	2	2	2	2	2	2	1	1
MICHIGAN	2	2	3	3	2	2	2	2	1	1
MINNESOTA	3	3	3	3	3	2	2	2	2	2
MISSISSIPPI	3	3	2	3	3	3	3	4	4	4
MISSOURI	5	5	5	5	5	5	5	4	4	5
MONTANA	6	9	8	8	7	6	5	4	5	5
NEBRASKA	3	4	5	7	7	7	5	7	3	3
NEVADA	19	18	19	17	18	15	15	15	16	16
NEW HAMPSHIRE	3	4	3	2	1					
NEW JERSEY	1	2	2	2	2	3	3	2	3	3
NEW MEXICO	4	3	3	4	3	3	3	3	2	2
NEW YORK	5	5	5	5	6	4	4	5	4	3
NORTH CAROLINA	3	3	4	4	4	4	4	4	5	5
NORTH DAKOTA	18	21	19	17	15	14	14	11	16	15
OHIO	6	7	7	7	6	6	5	5	5	5
OKLAHOMA	7	8	7	7	6	6	6	6	6	6
OREGON						8	6	6	8	7
PENNSYLVANIA	2	3	2	2	2	2	3	2	3	3
RHODE ISLAND	2	2	3	3	2	2	3	2	2	2
SOUTH CAROLINA	2	2	2	2	2	2	2	3	3	3
SOUTH DAKOTA						8	8	8	7	7
TENNESSEE	2	2	2	3	2	2	2	2	2	2
TEXAS	3	3	3	3	3	3	3	3	3	3
UTAH	3	3	2	3	3	2	3	3		
VERMONT	3	3	2	2	1	1	2	2	2	2
VIRGINIA	3	3	3	3	3	2	2	2	2	2
WASHINGTON	3	3	3	3	3	3	4	3	3	3
WEST VIRGINIA	8	8	8	8	7	7	7	8	5	4
WISCONSIN	8	9	9	10	11	10	8	8	7	7
WYOMING	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Appendix D-18 (continued).

TWO-YEAR COLLEGES

States	Fiscal years									
	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977
ALABAMA	1	1	2	2	2	2	2	2	3	2
ALASKA										
ARIZONA	3	3	3	3	3	3	3	3	3	3
ARKANSAS	0	0	0	0	0	0	1	1	1	1
CALIFORNIA	2	2	3	3	3	3	4	3	4	4
COLORADO	0	1	3	3	3	3	2	2	2	3
CONNECTICUT	1	1	1	1	1	1	1	2	1	1
DELAWARE	0	1	1	1	1	1	1	2	2	2
FLORIDA	6	5	6	6	6	6	5	5	6	6
GEORGIA	0	0	0	0	0	0	0	1	1	1
HAWAII	1	1	1	2	2	2	2	2	2	2
IDAHO	0	0	0	0	0	0	1	1	1	1
ILLINOIS	1	1	1	1	1	2	2	2	2	2
INDIANA	0	0	0	0	0	0	0	0	1	1
IOWA	4	2	3	2	3	2	2	2	3	3
KANSAS	0	0	0	0	0	0	1	1	1	1
KENTUCKY	0	0	1	1	1	1	1	0	0	1
LOUISIANA	0	0	0	0	0	0	0	0	0	0
MAINE	0	0	0	0	0	0	0	0	0	0
MARYLAND	0	0	1	1	2	2	2	2	2	2
MASSACHUSETTS	0	0	1	1	1	1	1	1	1	1
MICHIGAN	1	1	2	2	2	1	1	1	1	1
MINNESOTA	1	1	1	1	1	1	1	0	0	0
MISSISSIPPI	2	2	2	2	2	2	2	2	3	3
MISSOURI	1	1	1	1	1	1	1	1	1	1
MONTANA	0	0	0	0	0	0	0	0	0	0
NEBRASKA	1	1	1	2	2	2	3	3	6	3
NEVADA	0	0	0	0	0	0	2	2	3	4
NEW HAMPSHIRE	0	0	0	0	0					
NEW JERSEY	0	0	0	0	1	1	1	1	1	1
NEW MEXICO	0	0	0	0	0	0	0	0	0	0
NEW YORK	0	0	0	1	1	1	1	1	1	1
NORTH CAROLINA	2	3	4	4	4	4	5	5	5	5
NORTH DAKOTA	3	3	3	3	3	2	2	2	2	2
OHIO	0	0	1	1	1	1	1	1	1	1
OKLAHOMA	1	1	1	2	2	2	2	3	3	3
OREGON		3	4	4	5	5	4	4	4	4
PENNSYLVANIA	0	0	0	0	0	0	0	0	0	0
RHODE ISLAND	0	1	1	1	1	2	2	2	2	2
SOUTH CAROLINA	0	0	0	0	0	0	0	0	0	0
SOUTH DAKOTA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TENNESSEE	0	0	0	1	1	1	1	1	1	1
TEXAS	2	2	3	3	3	3	3	3	4	4
UTAH	0	0	0	0	0	0	1	1		
VERMONT	1	1	0	1	0	0	0	0	1	0
VIRGINIA	1	2	2	2	2	3	3	3	3	3
WASHINGTON	4	4	5	5	6	6	6	6	6	6
WEST VIRGINIA	0	0	0	0	0	0	0	0	0	0
WISCONSIN	1	0	0	0	0	0	0	0	0	0
WYOMING	3	3	4	4	6	8	6	7	7	7

Appendix D-19. State Appropriations Per FTE Student in Public Institutions: Advanced Graduate and Research Universities, Other Universities and Colleges, and Two-year Colleges, 1968-1977, by Type of Institution and Total, by State

ADVANCED GRADUATE AND RESEARCH UNIVERSITIES

States	Fiscal years									
	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977
ALABAMA	1291	1206	1474	1574	1755	1661	2241	2296	2853	2738
ALASKA										
ARIZONA	873	1224	1106	1346	1465	1439	1692	1822	1824	2075
ARKANSAS	1807	1996	2145	2190	2471	2787	3845	4472		
CALIFORNIA						3689	4041	4559	4869	5759
COLORADO						1015	1625	1780	1926	2133
CONNECTICUT										
DELAWARE	1121	1178	1225	1280	1224	1291	1371	1568	2008	2107
FLORIDA										
GEORGIA						2702	3119	3366	2660	2563
HAWAII	1498	1824	2059	2343	2485	2714	2275	2401	2948	3547
IDAHO						2500	2419	3030	3547	3774
ILLINOIS	2123	2164	2426	2475	2420	2564	2810	3073	2930	3045
INDIANA									2471	2576
IOWA	1850	2063	1884	2109	2190	2299	2704	2843	3364	3833
KANSAS									2646	2953
KENTUCKY	2805	3041	3064	2417	2420	2730	2748	3196	3259	3563
LOUISIANA	1050	1051	1027	1210	1163	978	1098	1214		
MAINE	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
MARYLAND										
MASSACHUSETTS										
MICHIGAN									3192	3343
MINNESOTA						2401	2667	2692	3279	3492
MISSISSIPPI	1098	1115	1130	1534	1633	1753	2046	2274	2401	2495
MISSOURI	1614	1882	1982	1921	2107	2270	2441	2681	2803	3040
MONTANA						1169	1336	1364	1586	1708
NEBRASKA	1108	1378	1532	1827	1973	1964	2516	2945	1960	2458
NEVADA	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
NEW HAMPSHIRE	1073	1141	1018	1038	1027					
NEW JERSEY						3465	3551	3763	4585	4893
NEW MEXICO	1195	1222	1311	1366	1359	1554	1662	1885	2096	2468
NEW YORK										
NORTH CARCLINA										
NORTH DAKOTA	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
OHIO	1148	1240	1343	1349	1519	1584	1731	1887	2210	2313
OKLAHOMA	1001	1095	1187	1338	1514	1564	1668	1822		
OREGON						1356	1488	1540	1824	2082
PENNSYLVANIA	1977	1718	1913	1866	1901	2032	2041	2205	2385	2423
RHODE ISLAND										
SOUTH CAROLINA										
SOUTH DAKOTA										
TENNESSEE						1560	1773	1913		
TEXAS	997	1017	1166	1193	1330	1398	1667	1670	2075	2184
UTAH	1044	1160	1230	1359	1421	1416	1639	1872		
VERMONT	1328	1462	1354	1392	1400	1385	1381	1500	1482	1423
VIRGINIA	1534	1868	1824	2223	2294	2182	2258	2585	2779	3047
WASHINGTON	2074	2166	2373	2291	2107	2199	2542	2873	3124	3402
WEST VIRGINIA	1783	1780	1960	2050	2281	2624	2565	2691	2510	2887
WISCONSIN										
WYOMING		1462	1653	1791	2046	1799	2193	2575	3165	3211

Appendix D-19 (continued)

OTHER UNIVERSITIES AND COLLEGES

States	Fiscal years									
	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977
ALABAMA	816	761	858	919	967	916	1237	1216	1683	1615
ALASKA										
ARIZONA	826	884	966	1168	1250	1331	1556	1566	1450	1591
ARKANSAS	579	660	685	826	908	1001	1209	1520		
CALIFORNIA						1698	1917	2117	2291	2639
COLORADO						1026	1109	1115	1219	1273
CONNECTICUT										
DELAWARE	1357	1493	1666	1667	1443	1718	1883	2765	3485	3264
FLORIDA										
GEORGIA						1301	1635	1762	1258	1452
HAWAII	*****	*****	1607	1772	1395	1315	1531	1577	2309	2814
IDAHO						1598	1673	1985	2185	2487
ILLINOIS	1452	1625	1768	1807	1779	1989	1990	2052	1907	2217
INDIANA									1909	2077
IOWA	899	1004	980	1048	1142	1314	1497	1763	2229	2479
KANSAS									1623	1921
KENTUCKY	867	1030	1285	1442	1526	1710	1842	1999	1955	2225
LOUISIANA	1015	575	517	1132	1086	1168	1184	1193		
MAINE	1198	1109	1297	1363	1389	1447	1662	1804	1645	1597
MARYLAND										
MASSACHUSETTS										
MICHIGAN									908	936
MINNESOTA						1304	1407	1514	1819	2026
MISSISSIPPI	602	646	685	914	1043	1208	1362	1454	1412	1487
MISSOURI	836	906	955	822	914	1042	1473	1589	1693	1850
MONTANA						1440	1494	1499	1583	1656
NEBRASKA	274	331	554	589	646	791	831	1059	1383	1363
NEVADA	1662	1501	1619	1583	1680	1914	2161	2252	2889	3080
NEW HAMPSHIRE	671	852	587	491	419					
NEW JERSEY						1270	1391	1348	1407	1655
NEW MEXICO	1081	1032	1106	1217	1206	1319	1550	1692	1926	2315
NEW YORK										
NORTH CAROLINA										
NORTH DAKOTA	658	768	793	835	872	1047	1351	1382	2056	2107
OHIO	720	752	894	952	1026	1215	1302	1598	1657	1850
OKLAHOMA	451	464	530	559	649	679	819	972		
OREGON						3035	3630	3560	5378	5834
PENNSYLVANIA	970	1245	1331	1368	1480	1781	1973	2209	2625	2748
RHODE ISLAND										
SOUTH CAROLINA										
SOUTH DAKOTA										
TENNESSEE						1311	1381	1474		
TEXAS	783	777	866	893	1054	1143	1494	1414	2062	1995
UTAH	595	636	754	789	975	1105	1265	1400		
VERMONT	1106	1137	1189	1181	1030	1082	1318	1196	1147	1066
VIRGINIA	646	777	758	824	1004	1028	1081	1297	1310	1473
WASHINGTON	1125	1150	1257	1508	1353	1523	1960	2065	2144	2356
WEST VIRGINIA	879	922	1009	932	1016	1335	1401	1523	1521	1777
WISCONSIN										
WYOMING	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Appendix D-19 (continued)

TWO-YEAR COLLEGES

States	Fiscal years									
	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977
ALABAMA	481	421	567	529	575	576	715	660	807	982
ALASKA										
ARIZONA	441	422	463	504	530	567	569	560	564	600
ARKANSAS	332	437	606	668	703	1024	1600	1305		
CALIFORNIA						390	937	863	673	746
COLORADO						946	1033	998	990	1162
CONNECTICUT										
DELAWARE	2654	2181	2200	2186	1873	2828	3283	3362	1484	1436
FLORIDA										
GEORGIA						1126	1386	1535	944	1127
HAWAII	917	863	836	1050	1002	973	915	1062	1047	1294
IDAHO						686	856	1189	1181	1165
ILLINOIS	385	314	473	527	570	640	705	706	781	982
INDIANA									1135	1377
IOWA	656	626	842	771	908	811	890	918	1745	1984
KANSAS									604	629
KENTUCKY	720	507	712	874	929	1032	987	987	881	1083
LOUISIANA	1226	643	960	765	455	757	696	723		
MAINE	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
MARYLAND										
MASSACHUSETTS										
MICHIGAN									810	914
MINNESOTA						1028	1068	1076	1254	1437
MISSISSIPPI	344	452	479	527	584	566	676	695	766	783
MISSOURI	372	386	383	374	448	509	501	505	502	729
MONTANA						752	702	765	671	808
NEBRASKA	501	477	725	740	806	814	1106	1228	1552	866
NEVADA	*****	*****	*****	875	1229	686	1356	1113	1200	1748
NEW HAMPSHIRE	*****	*****	*****	*****	*****					
NEW JERSEY						814	806	706	616	685
NEW MEXICO	220	299	377	485	497	593	504	568	728	863
NEW YORK										
NORTH CAROLINA										
NORTH DAKOTA	379	454	525	558	581	599	687	689	828	817
OHIO	374	365	531	529	585	648	806	874	879	1083
OKLAHOMA	384	388	454	506	536	600	636	752		
OREGON		553	693	553	654	702	697	713	716	837
PENNSYLVANIA	649	601	664	555	620	692	772	951	1030	1024
RHODE ISLAND										
SOUTH CAROLINA										
SOUTH DAKOTA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TENNESSEE						1428	1295	1215		
TEXAS	483	456	539	533	584	646	730	730	849	
UTAH	585	552	682	801	990	1298	1536	1615		
VERMONT	1732	1965	2087	2116	2681	1428	1469	1457	1165	1485
VIRGINIA	780	880	906	876	948	1216	1271	1206	1301	1450
WASHINGTON	707	770	869	847	837	880	966	1059	1064	1281
WEST VIRGINIA	456	421	549	482	255	1009	1001	896	1117	1015
WISCONSIN										
WYOMING			334	250	528	554	523	587	812	845

Appendix D-19 (continued).

ALL PUBLIC HIGHER EDUCATION

States	Fiscal years									
	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977
ALABAMA	955	663	1055	1077	1179	1162	1550	1512	1841	1880
ALASKA										
ARIZONA	770	853	939	1095	1146	1122	1260	1267	1216	1388
ARKANSAS	926	1028	1079	1222	1343	1521	2036	2302	2356	2524
CALIFORNIA	916	954	1080	1070	1057	1193	1371	1466	1600	1756
COLORADO	944	939	1168	1274	1175	1075	1442	1526	1638	1763
CONNECTICUT	1474	1480	1674	1683	1823	1850	1884	1983	1968	2120
DELAWARE	1217	1310	1408	1499	1442	1621	1772	2069	1935	1980
FLORIDA	1154	1278	1407	1509	1459	1656	1765	1915	1014	1072
GEORGIA	2064	2315	2334	2522	2586	2792	3446	3504	2616	2662
HAWAII	1391	1596	1700	1962	1988	2071	1761	1857	2105	2244
IDAHO						1862	1891	2329	2600	2849
ILLINOIS	1502	1495	1675	1718	1622	1716	1816	1900	1890	2078
INDIANA	1460		1435	1532	1601	1705	1892	1988	2308	2440
IOWA	1434	1547	1482	1590	1686	1691	1921	2056	2753	3112
KANSAS	929	873	935	1042	1070	1222	1399	1588	1884	2139
KENTUCKY	1408	1488	1691	1754	1796	2011	2094	2357	2337	2622
LOUISIANA	1041	1013	980	1155	1079	1018	1090	1179	1852	2054
MAINE	1198	1109	1297	1363	1389	1447	1662	1804	1647	1597
MARYLAND	1057	1060	1163	1347	1481	1524	1623	1663	1659	1666
MASSACHUSETTS	1315	1253	1489	1738	1744	1883	1848	1931	2253	2323
MICHIGAN	851	877	924	959	1031	1151	1378	1263	1657	1730
MINNESOTA	1182	1191	1323	1432	1598	1765	1938	2012	2413	2614
MISSISSIPPI	752	794	812	1058	1156	1236	1429	1540	1563	1635
MISSOURI	1099	1203	1256	1163	1275	1361	1580	1717	1724	1952
MONTANA		994	987	1007	1042	1215	1337	1364	1542	1671
NEBRASKA	881	876	957	1123	1229	1358	1651	1924	1809	1903
NEVADA	1662	1501	1638	1569	1656	1750	2011	1953	2393	2674
NEW HAMPSHIRE	954	1059	897	857	842					
NEW JERSEY	1042	1091	1150	1241	1502	1663	1724	1711	1721	1935
NEW MEXICO	1080	1065	1164	1250	1252	1420	1527	1761	1904	2246
NEW YORK	1800	1921	2053	1944	1920	1808	1932	2178	2118	2330
NORTH CAROLINA	1234	1481	1700	1730	1950	2022	2582	2949	3484	3889
NORTH DAKOTA	603	704	741	780	810	1033	1270	1292	1926	1926
OHIO	928	896	997	1028	1124	1212	1373	1528	1613	1769
OKLAHOMA	697	734	810	907	990	1039	1141	1290	1387	1629
OREGON	1369	1214	1329	1225	1288	1342	1440	1453	1650	1820
PENNSYLVANIA	1295	1352	1495	1421	1526	1708	1785	1971	2151	2232
RHODE ISLAND	1434	1566	1769	1871	1765	1944	2192	2323	1620	1981
SOUTH CAROLINA	1204	1296	1623	1603	1748	2117	2457	2924	2816	2775
SOUTH DAKOTA	955	973	971	1047	1182	1660	1993	2177	2480	2881
TENNESSEE	1021	1066	1148	1206	1349	1512	1663	1771	1688	1926
TEXAS			1215	1209	1376	1480	1769	1743	2242	
UTAH	910	951	1085	1206	1323	1380	1597	1804		
VERMONT	1295	1418	1383	1385	1390	1338	1392	1436	1381	1343
VIRGINIA	1211	1357	1359	1506	1563	1672	1727	1873	1954	2165
WASHINGTON	1320	1320	1495	1483	1356	1437	1645	1802	1858	2124
WEST VIRGINIA	1174	1158	1325	1261	1363	1771	1802	1688	1864	2056
WISCONSIN	1193	1260	1286	1471	1765	2004	2139	2241	2256	2500
WYOMING			1119	1103	1337	1267	1328	1470	1506	1928

175

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