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ABSTRACT

During the past decade, the higher education system of New York State has made significant and substantial gains, not only in numbers of institutions, programs, faculty and students, but in the funding of the system. This background paper, illustrating and summarizing these major changes, covers: (1) state appropriations for higher education; (2) expenditures per student and tuition rates; (3) enrollment levels and distribution; (4) output of the systems--degrees conferred; (5) facilities--amount, distribution, age, condition, value, and debt; (6) specific state aid programs--institutions and students; (7) capital construction and federal programs; and (8) prospects--population trends, enrollment trends, the economic outlook, and the fiscal condition of the state and city of New York. (Author/KE)

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THE HIGHER EDUCATIONAL SYSTEM OF NEW YORK STATE

A Summary of Major Changes in the State's Higher Educational System and Funding in Recent Years

U.S. DEPARTMENT OF HEALTH,
EDUCATION & WELFARE
NATIONAL INSTITUTE OF
EDUCATION

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March 1976

The University of The State of New York
The State Education Department
Office of Higher and Professional Education
Albany, New York

HE008025

**THE HIGHER EDUCATIONAL SYSTEM
OF NEW YORK STATE**

**A Summary of Major Changes in the State's
Higher Educational System and
Funding in Recent Years**

**State Higher Education Appropriations
Expenditures Per Student and Tuition Rates
Enrollment Levels and Distribution
Degrees Awarded
Facilities
Specific State Aid Programs
Prospects: Population Trends and Enrollments**

March 1976

**The University of the State of New York
The State Education Department
Office of Higher and Professional Education
Albany, New York**

THE UNIVERSITY OF THE STATE OF NEW YORK

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FOREWORD.

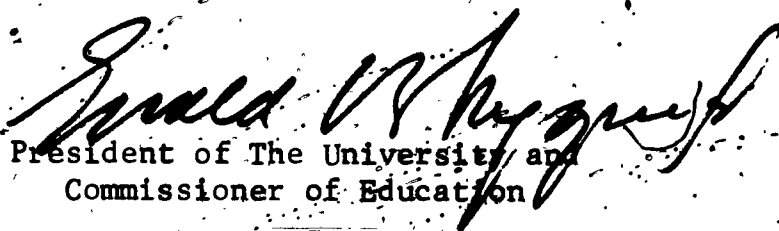
New York State's higher educational system is a four-sector, open-access system with high inter-institutional mobility, coordinated to meet comprehensive but diverse New York State needs. The four sectors are the State University of New York, the City University of New York, a system of public community colleges and a large number of independent or private institutions. The measurable variables in the system that help in the assessment of its scope are the number of institutions, student enrollments, faculty and staff, facilities, programs, and the levels and structure of financial support and expenditures.

It is an open-access system with high mobility in that both students and faculty and staff are free to move in and out of the various institutions in the State and to transfer among institutions; and, in that New York State residents leave the State to pursue education and employment in other states and those from other states and nations enroll in or are employed in New York State institutions.

Higher Education in New York is a large and complex enterprise. The State's role in planning for and, especially, in providing financial support for this system has been an

increasing one in recent years, but it is quite evident that more thorough and detailed planning is necessary now and in the years ahead if the State is to maintain and strengthen its higher educational system and provide financial support in a rational manner, i.e., economically and equitably.

This paper attempts to portray the higher educational system of the State by presenting recent data on major aspects of the system and measuring the State's role in financing institutions, students and programs. If planning is to be successful, it must, at least, address the questions: Where have we been?, Where are we now?, and Where do we wish to be in the years ahead and how do we get there? This paper provides background to help answer these questions. It serves as a point of departure for the Regents, college officials and public officials who must chart the future course of the State's higher educational system and its financing.


President of The University and
Commissioner of Education

SUMMARY

During the past decade, the higher educational system of New York State has made significant and substantial gains, not only in numbers of institutions, programs, faculty and students, but in the funding of the system. This report is intended as a background paper illustrating and summarizing these major changes. A summary of summaries can only touch on the highlights; the details are presented in the textual and tabular materials comprising the body of the document.

State Appropriations

- Appropriations have increased 51 percent in four years.
- During the same four-year period, higher education's share of the total State revenues has ranged from 10 to 12 percent.
- The relative share of total appropriations going to State University has decreased, remained constant for community colleges, increased to independent colleges and for student aid.

◦ The State provides 75 percent of State University funds, 40 percent of City University, 33-40 percent of community colleges and 5-7 percent of independent colleges and universities.

◦ Although the New York State percent of total revenues appropriated for higher education is at the mean when compared to other states, the percent increase in the past four years is less.

Cost Per Student and Tuition Rates

◦ Differences in educational cost per student at public and independent institutions with comparable programs are statistically insignificant.

◦ Tuition rates at independent colleges relate closely to their educational cost per student.

◦ Tuition charges at SUNY institutions cover only a little more than one-quarter of the educational cost per student.

Enrollments

◦ In the last 15 years, the enrollment shares of public and independent institutions have reversed from

- 35 percent public and 65 percent independent to 65 percent public and 35 percent independent.
- In the same period, the independent institutions have increased enrollments from 236 to 344 thousand students and the public from 144 to 577 thousand students.
- Major growth occurred in the public two-year college sector, enrollments increasing from 37 to 248 thousand students in 15 years.
- While full-time undergraduate enrollment has increased by 26.5 percent in the last five years, part-time undergraduate enrollment has increased by 40.2 percent.
- The independent colleges and universities have maintained the major share of graduate students, enrolling 61.5 percent of the total in 1974.

Degrees

- Associate degrees granted now exceed 45,000 per year with 63 percent at State University, 22 percent at City University and 15 percent at independent institutions.
- Bachelor's degrees granted now exceed 87,000 per year with 28 percent at State University, 19.5 percent at City University and 52.5 percent at independent institutions.

Master's degrees granted now exceed 41,000 per year with 19 percent at State University, 16 percent at City University and 65 percent at independent institutions.

More than 4,900 first-professional degrees are given each year with 16 percent at State University and 84 percent at independent institutions.

Doctoral degrees granted now exceed 3,400 per year with 22 percent at State University, 5 percent at City University, and 73 percent at independent institutions.

Facilities

The State University and independent institutions have constructed more than two-thirds of their facilities in the last 20 years and approximately 85 percent of their total facilities are in satisfactory condition.

The City University belatedly established a construction program and 50 percent of its plant facilities are in need of remodeling or demolition. Rentals for leased space are a major budget component while new facilities are under construction.

The square footage per student at State University senior campuses and the independent institutions is approximately three times that of the City University senior colleges.

Specific State Aid Programs: Students and Institutions

- Regents College Scholarships have not increased proportionately to enrollments; the ratio of scholarship holders to students enrolled has been falling.
- Scholar Incentive Awards are now assisting more students in public institutions than in independent institutions.
- Considering the total of State student aid awards in 1974-75, State University had 27 percent of the students and 40 percent of the awards; the community colleges had 14 percent of the students and 17.5 percent of the awards; the City University had 27 percent of the students and only 4 percent of the awards; and, the independent institutions had 31 percent of the students and 38 percent of the awards.
- The average award per student in 1974-75 varied from \$287 at City University, to \$298 at upstate community colleges, to \$358 at State University, and to \$512 at the independent institutions.
- State appropriations for educational opportunity programs have increased at about the same rate as program enrollments with little difference in aid per student in the three sectors (independent-\$1,432, SUNY-\$1,397, and CUNY-\$1,233).

- ° State subsidies for health professions education have increased enrollments in medical, dental and nursing schools.

Trends and Prospects

- ° U.S. population growth is slowing down; the growth rate is lower in New York State than in the rest of the nation.
- ° Full-time undergraduate enrollment will plateau in 1980-81 and decline thereafter.
- ° The economy of New York State is static, if not in decline, and recessions affect the State more than they do the rest of the nation.
- ° Serious financial problems of the City and State of New York will require retrenchment, restructured priorities, and constraints on appropriations.

THE HIGHER EDUCATIONAL SYSTEM
OF NEW YORK STATE

I

STATE APPROPRIATIONS FOR HIGHER EDUCATION

For its 1975-76 fiscal year, New York State has appropriated more than \$1.2 billion for support of higher education. In 1960-61, the State provided less than \$100 million for all higher educational purposes. The appropriation level has increased by more than 50 percent in the four years since 1971-72 (Appendix Table I).

This rapid growth in expenditures reflects the recent State recognition of its responsibility for financing public and independent higher education. The major increase in State support has been for the growth and development of the State University system. Second in importance has been the growth of The City University of New York and the commitment of the State to significant sharing in the financing of this institution.

Thirdly, the State assumed some responsibility for the financial support of independent institutions by adoption of the Bundy program in 1968. These more recent years have also seen initiation and growth of programs for disadvantaged students, direct operating and capital aid to non-public medical,

dental and nursing schools and a marked expansion, in 1974, of aid to students through the Scholar Incentive-Tuition Assistance Program.

Fifteen years ago, only about 6 percent of general State revenues went to higher education; by 1967-68, the figure had reached 10 percent and, over the past five years, the share for this purpose has ranged between 10 and 12 percent (Table 1).*

Distribution of State Aid

A more concise summary of the level and distribution of State appropriations for higher education is presented in Table 2. Not surprisingly, more than one-half of the State's higher education outlay is for the State University. Appropriations for the various institutions and programs of the University are now at the level of \$670 million, almost \$200 million above the level of four years ago and amounting to about 54 percent of the total State higher education appropriations. The University's relative share of State funds has actually fallen somewhat since 1971-72, the declining relative share primarily

*Compared to an average of 12.6 percent for the nation's 17 largest (in terms of tax revenues) states.

Table 1
New York State
Higher Education's Share
of Total State Revenues
1971-72 - 1975-76
(\$ Million)

	<u>Total State Revenues*</u>	<u>Appropri- ation for Higher Education</u>	<u>Higher Education Percent Of Total</u>
1971-72	\$ 6,939	\$ 830	12.0
1972-73	8,132	872	10.7
1973-74	8,400	1,012	12.0
1974-75	9,504	1,173	12.3
1975-76	11,187	1,253	11.2

*Excluding Federal revenue sharing funds.

Table 2
 Distribution of State Appropriations
 For Higher Education
 1971-72 and 1975-76
 (Amounts in \$ Million)

	Amounts		Percent Change	Percent of Total	
	1971-72	1975-76		1971-72	1975-76
State Univ. of NY ¹	\$472.7	\$669.9	41.7	57.2	53.7
City Univ. of NY ²	90.0	176.9	96.6	10.9	14.2
Community Colleges ²	92.0	137.4	49.3	11.1	11.0
Aid to Non-Public Institutions					
Buddy Aid ³	26.9	57.4	113.4	3.3	4.6
Health Prof. Educ. ⁴	8.9	13.9	56.2	1.1	1.1
Aid to Students ⁵	75.5	127.6	69.0	9.1	10.2
Prog. for Disad- vantaged Students	31.8	34.4	8.2	3.9	2.8
Other State Educ. Support & Programs	8.0	7.7	(3.8)	1.0	.6
Other SUNY Programs	14.2	15.1	6.3	1.7	1.2
Other State Agencies and Special Prog.	5.8	7.8	34.5	.7	.6
Total	\$825.8	\$1,248.1	51.1	100.0	100.0

¹Excluding certain programs covered in categories below and including estimates of funds for employee benefits.

²State share of operating budgets.

³Aid formula increased by average of about 60 percent in 1973; sixteen additional institutions became eligible for aid between 1971-72 and 1975-76.

⁴Excluding funds for capital grants: \$4.0 million in 1971-72 and \$5.3 million in 1975-76.

⁵Increase mainly attributable to adoption of Tuition Assistance Program in 1974.

attributable to a doubling of the State's allocations to The City University of New York, increased Bundy aid to non-public institutions and adoption of the Tuition Assistance Program providing higher levels of State aid to students. (It is of some interest to note that the State University's share of the 1960-61 appropriations of \$90 million also came to about 55 percent of the total; the balance of funds in that year went to the only other three State commitments for higher education: the colleges of the City of New York, the community colleges and students through the Regents Scholarship Program.)

Over the past four years, The City University of New York, owing largely to its open admissions policy but also to general increases in enrollments and costs, has received an increase in State appropriations from \$90 million to almost \$177 million, an increase of about 97 percent resulting in an increase, also, in its share of total State appropriations from 11 percent to more than 14 percent in this current year.*

State allocations to the community colleges have risen by almost 50 percent since 1971-72 to a current level of \$137 million.

The program of direct aid to non-public colleges and universities now accounts for about \$57 million per year, more than double the level disbursed to a smaller number of institutions

*Prior to adjustments which may be made as a result of reductions in expenditures by the City, including those for CUNY, --all resulting from the City's financial crisis.

in 1971-72. The increase is also attributable to a 60 percent increase in the grant formula adopted in 1973. The aid program accounts for about 4.6 percent of total State higher educational funding.

With the adoption of a new capitation-aid formula in 1974, the State's non-public medical and dental schools now receive almost \$14 million annually in operating aid. The capitation aid is accompanied by State aid for enrollment expansion which also applied to the nursing schools in 1971-72. Current support of these institutions has thus risen by more than 50 percent over the past four years and accounts for slightly more than 1 percent of total State higher education outlays.

As noted earlier, the State's new Tuition Assistance Program has resulted in an expansion of aid to students in both public and independent institutions of almost 70 percent over the past four years. These outlays, now in excess of \$125 million per year, account for 10 percent of State funding.

The only important area which has received no significant increase in State support is that of the programs for disadvantaged students, the increase over the past four years amounting to only 8 percent.

Comparison of State Appropriations to Institutional Expenditures

The total resource needs and expenditures of the institutions and programs are not, of course, reflected in these summary tabulations of State appropriations. The total expenditures of the State University of New York are considerably in excess of the direct State support, the balance of funds coming from student tuition, Federal and other governmental sources, gifts and grants for sponsored research and other programs and other institutional income. Nonetheless, the State supplies about 75 percent of the funds expended by the State University for current educational operations.

Similarly, the total expenditures of the institutions of The City University of New York exceed the amounts shown in its budgetary requests to the City and the State. The present legislative formula provides State aid in the amount of 50 percent of operating expenditures, net of tuition revenues, as presented in its budget submission as finally certified by the mayor of the City of New York. These State funds come to an estimated 40 percent of its actual total operating budget.

The community colleges receive between one-third and 40 percent of their operating expenditures from the State, the latter figure applying for those institutions that have adopted "full opportunity" admissions programs.* The balance of the financial needs of the institutions is met by student tuition charges and tax revenues of the sponsoring local government.

The program of direct State aid to non-public institutions has a widely varying impact on the various colleges and universities depending upon their enrollments, degrees conferred, program structure and other variables. The State's share of current educational operating expenditures of these institutions can be estimated at 5 to 7 percent.

New York State's Appropriation Compared to Other States

Comparison of the various states of the nation with respect to tax revenues and appropriations for higher education is at best of doubtful validity and, at worst, dangerously deceptive. The various states differ widely in the range and level of State-supported activities and services versus those which are supported by local governments. In some states, the burden of financing public school systems falls dominantly, if not

*And whose expenditures fall within State mandated expenditure ceilings.

totally upon local governments; in others, the state is dominant. Other functions of local governments may be heavily subsidized by revenues collected by the state and shared with these other entities. Major capital expenditures for some are funded currently, for others through long-term debt issues, and for still others through independent public authorities whose bond issues and expenditures are not part of the state budget. The higher educational systems of some states are funded almost totally by state appropriations with very low tuition charges to students; in other states, tuition revenues contribute significant amounts and shares to the cost of institutional operations.

Nonetheless, such data on tax revenues and higher educational appropriations are collected and published. Table 3 contains such a tabulation for the 17 states with the highest total tax revenues -- for what it is worth. One notes that New York's appropriations for higher education in 1971-72 came to 12 percent of total tax revenues. This figure is very close to the average for the 17 states. All 17 states have had significant increases in such appropriations over the past four years ranging from a low of 22 percent for Connecticut to almost 100 percent for the State of Texas. The weighted

Table 3
 State Tax Revenues and Appropriations
 For Higher Education
 Selected States
 1971-72 and 1975-76
 (Amounts in Million Dollars)

	1971-72			1975-76	
	Total Tax Revenues	Approp. Higher Education	Percent for Hi. Educ.	Approp. Higher Education	Percent Increase 1971-75
New York	\$ 6,939	\$ 830	12.0	\$1,253	51
California	6,740	854	12.7	1,542	81
Pennsylvania	3,863	347	9.0	623	80
Illinois	3,398	475	14.0	643	35
Michigan	3,062	379	12.4	557	47
Texas	2,572	418	16.3	830	99
Ohio	2,189	286	13.1	452	58
Florida	1,990	248	12.4	411	66
Wisconsin	1,628	226	13.9	334	48
Minnesota	1,324	165	12.4	251	52
Maryland	1,272	142	11.2	207	46
Georgia	1,198	163	13.6	240	47
Indiana	1,187	201	17.0	295	47
Connecticut	989	112	11.8	137	22
Iowa	759	120	15.8	195	63
Colorado	602	113	18.8	184	63
Arizona	595	98	16.4	163	66
Totals	\$40,309	\$5,176	12.8	\$8,317	61

Sources: M. M. Chambers of Illinois State University
The Book of the States, The Council of State Governments, 1974.

average increase for all 17 states is 61 percent with New York's increase coming to 51 percent. New York's expanded financing for higher education is not unique, but in fact, relatively modest in comparison to the efforts of other states.

II

EXPENDITURES OR "COSTS" PER STUDENT AND TUITION RATES

Costs Per Student

It is possible, with a reasonable degree of accuracy, to determine the expenditures made by individual institutions on their educational activities, to calculate costs per student enrolled and to compare such costs among institutions.*

Certain conclusions which can be expressed as pecuniary platitudes are familiar to students of college finances. The first is that institutions tend to live within their means, even though there are many incurring deficits and others with salutary surpluses. The independent institution which was founded one hundred or more years ago, which has achieved a prestigious reputation and which has accumulated a significant endowment will have higher expenditures per student than the newer institutions without these attributes. Similarly, the

*See Appendix for "A Note on the Determination of Cost Per Student", setting forth the method used in calculating costs cited in this section and describing the bases for improvements in cost calculations and comparisons made in recent years.

public institution which is funded more generously by its governmental sponsor will spend more per student than the one which is offered less funds. Next in this litany: there is more variation in the cost per student among independent institutions than there are differences between the average independent institution and the average publicly sponsored institution. And finally, there is little diversity in the level of expenditures per student among those public institutions of a given type and function which are part of the same publicly sponsored system.

Since the mid-1960's, the expenditures or costs of higher educational institutions have been rising at an average annual rate of approximately 7.5 percent. This rate is the average for the 16 independent institutions whose data are presented in Table 4. Expenditures per full-time equivalent student in 1972-73 ranged from \$1,800 to \$3,500 per year and averaged just over \$2,400. The average rose to \$2,600 in 1973-74. An inverse relationship exists between changes in student enrollment and expenditures per student. In general, unit costs rise more sharply for those institutions which have lost enrollment and have actually fallen for some institutions which have had increases in enrollment. The resource commitments of an institution are already set before the enrollments at the beginning

Table 4
 Educational and General Expenditures¹
 Per Full-Time Equivalent Student (FTES)²
 Representative State-Aided Independent Institutions
 1972-73 and 1973-74

	1972-73		1973-74		Percent Change	
	FTES	E & G Expend. Per FTES	FTES	E & G Expend. Per FTES	FTES	Expend. Per FTES
Adelphi Univ.	6,306	\$2,243	6,801	\$2,433	7.8	8.5
Hofstra Univ.	10,120	2,138	9,899	2,305	(2.2)	7.8
Pace University	6,863	1,884	7,349	2,225	7.1	18.1
Alfred Univ.	1,843	3,519	1,854	3,510	.6	(.3)
Barnard College	1,945	3,256	1,920	3,680	(1.3)	13.0
Colgate Univ.	2,543	3,056	2,572	3,312	1.1	8.4
Elmira College	2,176	1,326	2,370	1,380	8.9	4.1
Hartwick Col.	1,727	2,869	1,596	3,427	(7.6)	19.4
Hobart & Wm.Sm. Col.	1,603	3,005	1,699	2,969	6.0	(1.2)
Ithaca Col.	4,305	2,991	4,529	2,640	5.2	(11.7)
Russell Sage Col.	2,954	1,862	3,282	1,714	11.1	(8.0)
St. Lawrence Univ.	2,441	2,535	2,428	2,801	(.5)	10.5
Skidmore College	2,043	3,097	1,978	3,392	(3.2)	9.5
Union College	2,376	2,746	2,448	2,951	3.0	7.5
Vassar College	2,204	3,737	2,284	3,883	3.6	3.9
Wagner College	2,718	2,337	2,534	2,404	(6.8)	2.9
Average 16 Inst.	3,385	\$2,425	3,444	\$2,608	2.5	7.5

¹ Educational and General Expenditures as defined by accepted accounting guides and as reported by the institutions adjusted by exclusion of expenditures for sponsored research, other sponsored programs, indirect costs attributable to such sponsored activities, student aid and debt service. The resulting figure is considered to be the most practicable measure of the "cost" of providing educational services to students.

² Full-Time Equivalent Students (FTES) = full-time fall enrollment + .3 (part-time undergraduates) + .4 (part-time graduate and first-professional) + .15 (summer session undergraduates) + .2 (summer session graduate and first-professional).

of the academic year are known. Adjustments in the level of variable resources committed can only be made over a period of two years or more. Those familiar with the nature of the institutions listed will perceive some validity in the platitudes expressed in the first part of this discussion of costs.

Table 5 presents comparable data for the 10 fully operational State University colleges. The average cost per student per year for these 10 institutions is almost identical to that of the 16 independent institutions. The slightly lower figures for the public institutions are probably statistically insignificant. Since the public institutions are funded on the basis of budgetary formulae, the variation of costs among them is small. Unlike the independent institutions, the public colleges generally operate at or near their enrollment capacity. Six of the independent institutions have lower costs than do the public, 10 have higher costs. All of the public institutions had increases in enrollments between the two years (except one for which an identical enrollment figure was reported) averaging 2 percent. Expenditures per student increased by 5 percent on the average with a range of 1.8 percent to more than 10 percent.

Table 5
 Educational and General Expenditures¹
 Per Full-Time Equivalent Student (FTES)²
 State University Colleges
 1972-73 and 1973-74

	1972-73		1973-74		Percent Change	
	FTES	E & G Expend. Per FTES	FTES	E & G Expend. Per FTES	FTES	Expend. Per FTES
Brockport	8,340	\$2,257	8,800	\$2,406	5.5	6.6
Buffalo	8,716	2,673	9,500	2,724	9.0	1.9
Cortland	5,078	2,461	5,200	2,575	2.4	4.6
Fredonia	4,817	2,254	5,000	2,347	3.8	4.1
Geneseo	5,068	2,357	5,230	2,610	3.2	10.7
New Paltz	6,343	2,362	6,343	2,595	0	10.0
Oneonta	5,733	2,429	5,800	2,627	1.2	8.2
Oswego	7,376	2,359	7,700	2,413	4.4	2.3
Plattsburgh	4,985	2,328	5,350	2,396	7.3	2.9
Potsdam	4,615	2,536	4,731	2,582	2.5	1.8
Average 10 Inst.	6,107	\$2,410	6,365	\$2,530	4.2	5.0

¹As defined for Table 4. Expenditure data are from Annual Reports of The Chancellor for the respective years. Educational and General Expenditures for each institution have been adjusted by the same factors applied to the data for the independent institutions. Three expenditure elements for SUNY have been pro-rated and allocated to the institutions: Central Administration, Employee Benefits and certain items of University-wide Programs.

²As reported in succeeding years' Executive Budgets of New York State.

If one thing is evident from these tabulations, it is that the costs of providing education do not differ significantly between public and independent institutions. Nor should it be expected that they would differ so long as one compares institutions of similar size, mission and programs. The higher educational process and the resources employed are quite the same whether the institution is in the public or independent sector.

Tuition Rates

The cost of producing or supplying educational services has thus far been cited. Data on the prices charged to students by the independent institutions are displayed in Table 6. Commensurate with the rise in costs, tuition rates have also been increased by an average of 7.6 percent per year over the past nine years. More recently, the institutions increased tuition charges by an average of only 3.8 percent between 1972 and 1973 as opposed to the increase in unit costs of 7.5 percent.

We note also that most of these independent institutions set tuition rates closely approximating their educational cost per student. The average tuition rate was only \$90 above average cost in 1972-73 and virtually identical to cost in the following year (not shown in table but calculated at \$2,610).

Table 6
Tuition Rates and Increases
Representative State-Aided Independent Institutions
1966-1975

	Tuition Rates Per Academic Year ¹				Percent Increase 1966-1975	
	1966-67	1969-70	1972-73	1975-76	Nine-Years	Per Year ²
Adelphi Univ.	\$1,495	\$1,800	\$2,328	\$2,890	93	7.5
Hofstra Univ.	1,390	1,650	2,370	3,010	116	9.0
Pace University	1,240	1,400	2,035	2,400	93	7.5
Alfred Univ.	1,675	2,292	2,650	3,300	97	7.8
Barnard College	1,800	2,100	2,960	3,460	92	7.5
Colgate Univ.	1,950	2,450	2,950	3,475	78	6.6
Elmira College	1,835	2,050	2,985	3,300	80	6.7
Hartwick Col.	1,400	1,700	2,550	3,450	146	10.5
Hobart & Wm. Sm. Col.	1,750	2,200	2,785	3,290	88	7.3
Ithaca Col.	1,870	2,365	2,860	3,420	83	7.0
Russell Sage Col.	1,300	1,500	2,100	2,300	77	6.5
St. Lawrence Univ.	1,750	2,325	2,718	3,170	81	6.8
Skidmore College	1,815	2,400	3,005	3,600	98	7.9
Union College	1,833	2,143	2,760	3,300	80	6.8
Vassar College	1,500	2,130	2,815	3,275	118	9.1
Wagner College	1,610	1,810	2,290	3,275	103	8.2
Average ³	\$1,570	\$1,930	\$2,515	\$3,035	93	7.6

¹Tuition charge plus general fee, but excluding special fees, student activities fees, etc.

²Compound annual rate of increase.

³Weighted by institutional enrollments.

Tuition income does not cover the full cost of education. The tuition rates are the nominal or gross tuition rates billed to students. Tuition income along with other general income is redistributed among students through scholarship grants. For these independent institutions, about 63 percent of the scholarship grants are unfunded by gifts or the income from restricted scholarship endowment funds. The result is that an average of 8 to 10 percent of tuition income is not collected in cash but is redistributed among students through scholarship grants. In effect, those whose income level is sufficiently high to require them to pay full tuition have some of their tuition payments redistributed to those who cannot afford to pay the full charge. *

The undergraduate tuition rate of the State University is \$650 for lower-division and \$800 for upper-division students. Thus, in 1973-74, tuition charges came to about 28.5 percent of the average cost of educational services provided to these students, as opposed to tuition rates of the private institutions approximating 100 percent of cost. The tuition differential is, of course, the economic basis for the State's Tuition Assistance Program; the virtually identical costs of the public

* For additional data and discussion of these matters, see The State-Aided Colleges: Financial Profiles - 1969-1973, The State Education Department, Albany, New York, March 1974.

and independent institutions and the obvious cost-price differential provide additional economic rationale for the State's student aid program.

III

ENROLLMENT LEVELS AND DISTRIBUTION

New York State has some 220 degree-granting colleges and universities (Table 7).^{*} Independent colleges and universities were the largest sector of higher education until the early 1960's. Obviously, the absence of a comprehensive state university system both permitted and stimulated the founding and growth of private colleges. The State has 138 independent higher institutions ranging from the small two-year junior college to the major comprehensive university. The growth of the State University of New York and The City University of New York over the past 15 years is certainly the most dramatic that has ever occurred in any public system. In all, the State University has under its aegis, 64 institutions, including 28 offering programs leading to the baccalaureate and higher degrees, 6 two-year agricultural and technical institutes and 30 community colleges. This large and complex system is hardly

^{*}The count varies slightly depending upon the identification and classification of independently chartered versus affiliated institutions.

TABLE 7

New York State's
Higher Education System

Institutions of Higher Education - 1974

	<u>Four Year</u>	<u>Two Year</u>	<u>Total</u>
Independent Institutions	121	17	138
General	101	16	117
Seminaries	20	1	21
State University of New York	28	36	64
City University of New York	<u>11</u>	<u>8</u>	<u>19</u>
Total Institutions	161	60	221

to be compared with the structure of the State's public higher education component of the late 1940's.

The City University of New York has grown from 4 colleges in the 1930's to 11 senior institutions and 8 community colleges (the latter, until 1975, having been technically under the jurisdiction of the State University). Its growth has brought about a new and significant presence of public higher education in the metropolis.

Distribution of Student Enrollments

The growth and development of the public sector has been the major factor in a doubling of the higher education capacity of the State over the past 20 years and it has also brought about dramatic changes in the distribution of student enrollments. In the Fall of 1974, the public and independent institutions of the State enrolled 505,000 full-time undergraduate students. This number was supplemented by an additional 229,000 part-time undergraduates. Full-time graduate and professional degree students exceeded 62,000 and part-time students at these levels numbered 125,000. Thus, the total number of students in attendance at the public and independent higher institutions of the State was about 922,000 and preliminary estimates indicate that the figure in the current year is approaching one million.

While independent institutions were dominant until the post-World War II period, they now enroll only 35 percent of the full-time undergraduates. The various institutions of the State University now enroll a proportion approaching 40 percent of such students and those of the City University of New York enroll about 25 percent.

The independent institutions continue to enroll about two-thirds of graduate and professional students.

While the State's population is about 8.5 percent of that of the nation, its institutions of higher education enroll 10 percent or more of the nation's students--depending partly, again, on how one counts such students.

Enrollment Growth of the 1960's

Total headcount enrollments in the State's colleges and universities of 382,000 in 1960 increased by almost 50 percent to 569,000 in 1965 and rose by another 34 percent between 1965 and 1970 to a level of 764,000 (Table 8). We have seen that those enrollments reached a level of 922,000 in the Fall of 1974, a further increase, in the latest four-year period, of 21 percent. All sectors, public and private, and almost every individual institution grew during the decade of the

TABLE 8

New York State Colleges and Universities
Total Head-Count Enrollment
1960-1965-1970
(Thousand)

	1960	% of Total	1965	% of Total	1970	% of Total	Percent Increase 1960/65	Percent Increase 1965/70
State University	82.7	21.6	174.0	30.6	321.1	42.0	110.4	84.5
Four-Year	45.2	11.8	76.0	13.4	132.2	17.3	68.1	73.9
Two-Year	37.5	9.8	98.0	17.2	188.9	24.7	161.3	92.8
City University*	62.5	16.4	105.1	18.5	129.0	16.9	68.1	22.7
Independent Institutions	236.5	62.0	289.9	50.9	314.1	41.1	22.6	8.3
Four-Year	233.6	61.2	282.7	49.7	306.3	40.1	21.0	8.3
Two-Year	2.9	.8	7.2	1.2	7.8	1.0	148.3	8.3
Total State	381.7	100.0	569.0	100.0	764.2	100.0	49.1	34.3

*Excluding two-year colleges, which are included under State University.

1960's, but so also did most systems and institutions throughout the country. More interesting and more pertinent to New York's case was the change in distribution of enrollments.

Independent institutions grew by about one-third during the decade; enrollments in the senior institutions of the State University almost tripled; those in the rapidly developing community colleges under the supervision of State University grew by four-fold; finally, the colleges of the City University of New York more than doubled their enrollments.

The pattern of development has continued through the current year. In the past four years, enrollments of State University institutions, including the community colleges, have risen by almost 28 percent, those of the City University by 30 percent and those of the independent institutions by an additional 10 percent (Table 9).

The differential growth of the sectors has obviously produced marked changes in the relative shares of the sectors. While State University institutions enrolled about 22 percent of all students in 1960, they now enroll 35 percent. The share of City University, excluding the eight community colleges under its jurisdiction, rose only slightly from 16 to

TABLE 9

New York State Colleges and Universities
Enrollments - Fall 1974

	Undergraduate			Graduate and Professional			Total Headcount	% of Total
	Full- Time	% of Total	Part- Time	Full- Time	% of Total	Part- Time		
Independent Institutions								
Four-Year	176,700	35.2	53,200	41,300	68.1	73,500	344,700	37.4
Two-Year	170,600	34.0	51,900	41,300	68.1	73,500	337,300	36.6
	6,100	1.2	1,300				7,400	.8
State University of New York								
Four-Year	197,700	39.4	87,300	14,600	24.1	25,700	325,300	35.3
Two-Year	104,500	20.8	16,800	14,600	24.1	25,700	161,600	17.5
	93,200	18.6	70,500				163,700	17.8
City University of New York								
Four-Year	127,900	25.5	92,700	4,700	7.8	26,600	251,900	27.3
Two-Year	85,800	17.1	50,400	4,700	7.8	26,600	167,500	18.2
	42,100	8.4	42,300				84,400	9.1
Total All Institutions	502,400	100.0	233,200	60,600	100.0	125,800	921,900	100.0

18 percent of the total--although total growth, as we have noted, was substantial. The relative share of the independent institutions has fallen from 62 percent in 1960 to 37 percent today.

The public community colleges, by number, mission and location, have been of major importance in opening access and opportunity for higher education for young people (and many older) of the State. We note that the upstate community college enrollments, combined with those of the two-year agricultural and technical institutes, exceed those of the senior institutions of the State University. A comparable impact has been made by the community colleges of the City University of New York.

In summary, New York State could not have shared in the massive growth of higher educational enrollments which the nation experienced during the 1960's without the expansion and development of its public institutions. While some additional numbers of high school graduates who could not have found access in New York would have attended institutions out of State, it is quite probable that a far greater number of such potential students would simply not have attended college.

Enrollment Expansion: 1969-1974

In the five years between 1969 and 1974, first-year full-time enrollments increased by almost 19 percent (Table 10). Most significant to this growth has been the role of the public community colleges. The two-year institutions of the State increased freshman enrollments by more than one-third while the senior institutions increased their admissions of first-year students by less than 10 percent. Most dramatic has been the growth of enrollment in the eight community colleges in the City of New York, with entering classes rising by more than 80 percent. The upstate community colleges also enrolled 25 percent more freshmen by the end of the five-year period while the two-year institutions of the independent sector (historically, small in total size) experienced a decrease of 10 percent in first-year students.

The two-year public institutions now enroll more than 40 percent of all first-year students.

The four-year institutions of the State enroll a smaller percentage of first-year students today than they did five years ago, 56 percent versus 61 percent. The senior institutions of the State University enroll about the same relative share of first-time freshmen as they did in 1969, slightly more than 15 percent. City University has increased the first-year

Table 10
New York State
Full-Time, First-Time Freshmen
By Sector, Fall 1969 and Fall 1974

	1969		1974		Percent Change
	Number	Percent of Total	Number	Percent of Total	
State University	55,186	45	67,892	47	23
Two-Year	36,362	30	45,416	31	25
Four-Year	18,824	15	22,476	16	19
City University	20,367	17	33,880	23	66
Two-Year	8,820	7	16,184	11	84
Four-Year	11,547	10	17,696	12	53
Independent	47,310	38	44,162	30	(7)
Two-Year	2,947	2	2,661	2	(9)
Four-Year	44,363	36	41,501	28	(7)
Total	122,863	100	145,934	100	19
Two-Year	48,129	39	64,261	44	34
Four-Year	74,734	61	81,673	56	9

For further detail, see Appendix Table II.

students in its senior institutions from 9.4 percent of the State total in 1969 to 12.1 percent in 1974. The independent institutions, in the Fall of 1974, enrolled 6.5 percent fewer freshmen than they did in 1969 with their share of total first-year enrollments dropping from 36 percent to 28 percent.

The level and distribution of first-time freshmen in 1973 and 1974 does, obviously, give us a forecast of total undergraduate enrollments in the immediate years ahead.

The five-year period ending in the Fall of 1974 saw total State full-time undergraduate enrollments rise by almost 27 percent. The four-year institutions of State University increased enrollments by one-third and those of the City University by 60 percent. By the Fall of 1973, the independent institutions enrolled 4 percent fewer students than they did four years earlier but by 1974, they had again increased enrollment back to the level of 1969 (Tables 11 and 12).

Part-Time Enrollments

Part-time undergraduate enrollments rose even more rapidly than full-time between 1969 and 1974 with a statewide increase of 40 percent. While the senior institutions of State University enroll a relatively small proportion of part-time students (about 7 percent), they showed the greatest rate of increase

Table 11
New York State
 Full-Time Undergraduate Enrollment
 Fall 1969 to Fall 1974

Institutional Type	Fall 1969	Fall 1970	Fall 1971	Fall 1972	Fall 1973	Fall 1974	Percent Change Fall 69-Fall 74
<u>Four Year Institutions</u>							
State University	78,849	87,953	93,121	93,865	99,272	104,493	32.5%
City University	54,345	67,247	77,905	81,426	84,511	87,056	60.2
Independent	170,128	171,949	172,022	167,483	163,463	170,374	0.1
Total Four Year	303,322	327,149	343,048	342,774	347,246	361,923	19.3
<u>Two Year Institutions</u>							
State University	68,625	76,856	82,827	84,840	88,779	93,086	35.6
City University	21,676	29,408	35,925	39,554	41,557	43,938	102.7
Independent	5,450	5,573	5,216	5,293	6,378	6,046	10.9
Total Two Year	95,751	111,837	123,968	129,687	136,714	143,070	49.4
Total State	399,073	438,986	467,016	472,461	483,960	504,993	26.5%

Table 12

New York State
 Percentage Distribution of Full-Time Undergraduate Enrollment
 Fall 1969 to Fall 1974

Institutional Type	Fall 1969	Fall 1970	Fall 1971	Fall 1972	Fall 1973	Fall 1974
<u>Four Year Institutions</u>						
State University	19.8%	20.0%	19.9%	19.9%	20.5%	20.7%
City University	13.6	15.3	16.7	17.2	17.5	17.2
Independent	42.6	39.2	36.8	35.4	33.8	33.7
Total 4 Year	76.0	74.5	73.5	72.6	71.8	71.7
<u>Two Year Institutions</u>						
State University	17.2	17.4	17.1	18.0	18.3	18.4
City University	5.4	6.7	7.7	8.4	8.6	8.7
Independent	1.4	1.3	1.1	1.1	1.3	1.2
Total 2 Year	24.0	25.5	26.5	27.4	28.2	28.3
Total State	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

over the five-year period, 81 percent. The number of these students enrolled in the senior institutions of the City University increased by 14,000 over the five years, for a growth rate of 42 percent. The senior independent institutions continued to enroll the largest number and share of part-time students among the senior institutional group, with an increase over the five years of 12,000 or 29 percent.

The greatest numerical growth in part-time undergraduates occurred in the community colleges with 30,000 additional students enrolled in 1974 over the 1969 level, an increase of 41 percent (Table 13). Not only have the community colleges been the institutions with the greatest growth of part-time enrollments, but they have, in fact, apparently filled a great need in this area. One notes that the enrollment of these part-time students in the senior institutions of the State University has increased by only 5,000 in the dozen years since 1963. Such enrollments in the senior institutions of City University are at the same level today as in 1963. There are, today, 10,000 fewer part-time undergraduates in the independent institutions than there were 12 years earlier. In effect, all of the net growth in total part-time enrollments since 1963 has occurred in the community colleges.

Table 13

Part-Time Undergraduate Enrollment at New York State Colleges and Universities, Fall 1969 to Fall 1974

Type and Control of Institution	Part-Time Undergraduate Enrollment						Percent Change 1969-74
	1969	1970	1971	1972	1973	1974	
<u>Total State</u>	163,229	169,191	175,413	195,045	215,707	228,779	40.2
<u>4-Year Institutions</u>	83,242	85,199	83,278	96,135	111,528	116,519	40.0
City University	33,681	34,938	35,372	40,221	46,502	47,702	41.6
State University	9,232	11,070	10,837	12,227	14,377	16,749	81.4
Independent Inst.	40,329	39,191	37,069	43,687	50,649	52,068	29.1
<u>2-Year Institutions</u>	79,987	83,992	92,135	98,910	104,179	112,260	40.3
Ag. & Tech. Colleges	5,568	6,613	7,565	8,045	7,146	7,282	30.8
Community Colleges	73,407	76,041	83,607	89,612	95,781	103,666	41.2
Independent Inst.	1,012	1,338	963	1,253	1,252	1,312	29.6

Graduate Enrollments

Although the public institutions have been developing graduate and professional education schools and programs, over the past decade, the independent institutions continue to be dominant in these fields. In 1963, the independent colleges and universities enrolled more than 80 percent of full-time graduate and professional students. With the State University increasing its enrollment of these students from about 4,000 in 1963 to 15,000 today, and the City University, traditionally committed to undergraduate education, developing its postgraduate programs to a level of 5,000 students, the share of the independent sector has dropped to about 67 percent.

The picture of part-time enrollments of graduate and professional students is somewhat different: the City University has long enrolled a significant number of part-time students at these levels and today enrolls more than 20 percent of the State total. So also do the institutions of the State University, with the independent institutions enrolling somewhat less than 60 percent of these students (Table 14).

The major independent universities, a few smaller universities and large colleges, and a number of specialized institutions have built up, over 100 years and more, the facilities, libraries and faculties to offer programs for advanced degrees and profes-

Table 14
 New York State
 Graduate and First-Professional Enrollment
 by Sector
 Full-Time and Part-Time
 Fall 1972 to Fall 1974

Year	All Institutions		State University		City University		Independent Colleges and Universities		
	Total	Full-Time	Total	Full-Time	Total	Full-Time	Total	Full-Time	
Fall 1972	173,159	58,456	36,694	13,745	30,111	4,855	106,354	39,856	66,498
Fall 1973	180,242	60,315	38,495	14,179	32,086	4,842	109,661	41,294	68,367
Fall 1974	187,704	62,296	40,307	14,687	31,988	5,536	115,409	42,073	73,336
Percent Change 1972-1974	8.4	6.6	9.8	6.9	6.2	14.0	8.5	5.6	10.3
Percent of Total 1974	100.0	100.0	21.5	23.6	17.0	8.9	61.5	67.5	58.5

sional degrees. It is likely that they will continue to hold a dominant position in these fields. Contrary to the projected trends in undergraduate enrollments, it is anticipated that the number of students pursuing graduate and professional degrees will continue to grow in the years immediately ahead and maintain relative stability through the 1980's.

IV

OUTPUT OF THE SYSTEM: DEGREES CONFERRED

The "outcomes" of higher educational activity would be properly measured not simply by the count of degrees conferred but by the difference in the quantity and quality of knowledge possessed by the students between the time they entered the institutions and left them as graduates with diplomas in hand. More than that, "outcomes" would include measures of research completed and findings published, changes in and additions to the content of courses, curricula and programs, improvements in institutional management, and services provided to the public through workshops, institutes, continuing education programs, etc.

But, for the purposes at hand, we are left with those variables which are easily expressed in quantitative terms and which can serve as general measures of and surrogates for the total growth of the system and the differential growth of its components.

Associate Degrees Awarded

In reviewing enrollments, we have commented on the dramatic growth of the community colleges and the significant role they now fill in the State's higher educational system. Their contribution is strongly evident in the growth in the number of associate degrees they confer. For the entire State, the total number of such degrees conferred rose from 31,000 in 1970-71 to almost 46,000 in 1974-75, an increase of almost 50 percent in the past four years. There is little merit in comparing the public and independent sectors in this field of education. The independent two-year colleges have never been large in number or size, many of them are specialized in mission and program, and they have addressed their curricula to limited student constituencies. Only a few of the senior independent institutions continue to offer two-year programs leading to associate degrees.

The public institutions, then, are dominant in the conduct of two-year programs leading to the associate degree. The 30 upstate community colleges and 6 agricultural and technical colleges of the State University have increased their production of associate degree graduates by almost 40 percent in the past four years (Table 15). The 8 community colleges of the City University of New York have had an even larger increase in

Table 15
New York State
Associate Degrees Granted
By Sector
1970-71 to 1974-75

Year	All Institutions			State University			City University			Independent Institutions		
	Total	2-Yr. Insts.	4-Yr. Insts.	Total	2-Yr. Insts.	4-Yr. Insts.	Total	2-Yr. Insts.	4-Yr. Insts.	Total	2-Yr. Insts.	4-Yr. Insts.
1970-71	30,915	28,617	2,298	20,584	20,445	139	6,406	6,106	300	3,925	2,066	1,859
1971-72	34,958	32,606	2,352	23,508	23,358	150	7,311	7,035	276	3,826	1,900	1,936
% Increase	13.1	13.4	2.3	14.2	14.2	7.9	14.1	15.2	(8.0)	(2.5)	(8.0)	4.1
1972-73	38,539	36,381	2,158	25,309	25,154	155	8,579	8,335	244	4,238	2,479	1,759
% Increase	10.2	11.6	(8.2)	7.7	7.7	3.3	17.3	18.5	(11.6)	10.8	30.5	(9.1)
1973-74	43,450	40,783	2,667	27,686	27,395	291	9,554	9,286	268	5,398	3,290	2,108
% Increase	12.7	12.1	23.6	9.4	8.9	(12.3)	11.4	11.4	9.8	27.4	32.7	19.8
1974-75	45,546	42,457	3,089	28,892	28,606	286	9,991	9,653	338	6,663	4,198	2,465
% Increase	4.8	4.1	15.8	4.4	4.4	(1.7)	4.6	4.0	26.1	23.4	27.6	16.9
% Increase 1971-1975	47.3	48.4	34.4	40.4	39.9	105.8	56.0	58.1	12.7	69.8	103.2	32.6

degrees awarded of 58 percent during this period. It is evident that the high and increasing growth rates of the 1960's and early 1970's are now abating. A number of the community colleges are operating beyond designed enrollment capacity. While several others have not yet reached (and may not reach) designed capacity, most of the institutions are fully enrolled, given the limits of present facilities. No new institutions of this type have been founded in recent years, although several have established branch or secondary campuses.

Baccalaureate Degrees Awarded

The annual number of baccalaureate degree recipients has increased by more than 20 percent since 1970-71 (Table 16). Commensurate with its rapid growth of undergraduate enrollments, the State University has increased its annual conferral of bachelor's degrees by one-third in the past four years to a current level of about 25,000 per year. This number amounts to 28 percent of the total number of bachelor's degrees granted in the State, compared to almost 20 percent for the City University of New York and 52 percent for the independent institutions. The City University has increased its degrees awarded by almost 25 percent over the four-year period while the independent institutions have increased awards by 14 percent. A comparison of Tables 16 and 17 is of some interest at

Table 16
New York State
Bachelor's Degrees Granted
By Sector
1970-71 to 1974-75

Year	All Institutions		State University		City University		Independent Institutions	
	Number	% of Total	Number	% of Total	Number	% of Total	Number	% of Total
1970-71	72,017	25.4	18,279	19.1	13,745	19.1	39,993	55.5
1971-72	75,531	28.9	21,836	20.3	15,326	20.3	41,369	54.8
% Increase	4.7		19.5		11.5		3.4	
1972-73	82,183	29.2	24,015	19.3	15,857	19.3	42,311	51.5
% Increase	8.8		10.0		3.5		2.3	
1973-74	83,747	30.1	25,173	19.8	16,600	19.8	41,974	50.1
% Increase	1.9		4.8		4.7		(.8)	
1974-75	87,150	28.0	24,393	19.5	17,006	19.5	45,751	52.5
% Increase	4.1		(3.1)		2.4		9.0	
% Increase 1971-1975	21.0		33.4		23.7		14.4	

this point. The relative shares of the three sectors in degree output have changed little in the past four years with the two public sectors increasing output by a few percentage points while the independent institutions have decreased their share by 3 percentage points. Nonetheless, the independent institutions continue to confer more than 50 percent of all baccalaureate degrees in the State even though their share of full-time undergraduate enrollments has fallen to only one-third of the total. The senior institutions of the State University maintain a fairly high ratio of graduates to enrollment, perhaps attributable in significant part to their increased enrollments of transfer students from the community colleges. The independent institutions maintain a similar high ratio of graduates to enrollment, indicating a satisfactory retention rate between the first and fourth years of undergraduate study but aided also by the enrollment of transfer students from the two-year institutions. The senior institutions of the City University have a lower ratio of graduates to total enrollment, undoubtedly attributable, in recent years, to its open admissions policy and a consequent lower overall retention rate.

Master's Degrees Awarded

The number of master's degrees granted by the State's institutions has increased even more rapidly than that of bachelor's degrees. By 1974-75, the number of master's degrees conferred reached the annual level of almost 42,000, for an increase of 40 percent over the number in 1970-71. It is of interest, also, that the number of such degrees is now almost 50 percent of the number of bachelor's degrees conferred as opposed to a ratio of 41 percent only four years ago (Table 17).

Both the State University and the independent institutions have increased their conferral of master's degrees by 42 percent over the past four years with the City University increasing its awards by 29 percent. Proportional to its share of graduate enrollments, the independent institutions confer almost two-thirds of all master's degrees with their share varying modestly from year to year but maintaining this level.

Doctoral and First Professional Degrees Awarded

As one moves from the undergraduate level through the doctoral and professional degree level, the role of the independent institutions becomes more dominant. While these institutions confer slightly more than 50 percent of the bachelor's degrees and almost two-thirds of the master's degrees, they grant almost three-quarters of all doctoral degrees and 84 percent of first-professional degrees (Tables 18 and 19).

Table 17
 New York State
 Master's Degrees Granted
 By Sector
 1970-71 to 1974-75

Year	All Institutions		State University		City University		Independent Institutions	
	Number	% of Total	Number	% of Total	Number	% of Total	Number	% of Total
1970-71	29,730	18.5	5,500	18.5	5,087	17.1	19,143	64.4
1971-72	33,252	18.8	6,258	18.8	6,001	18.0	20,993	63.2
% Increase	11.8	13.8	13.8	18.0	18.0	9.7	9.7	
1972-73	36,099	20.1	7,247	20.1	6,177	17.1	22,675	62.8
% Increase	8.6	15.8	15.8	2.9	2.9	8.0	8.0	
1973-74	36,690	20.6	7,576	20.6	6,124	16.7	22,990	62.7
% Increase	1.6	4.5	4.5	(.9)	(.9)	1.4	1.4	
1974-75	41,627	18.8	7,809	18.8	6,564	15.8	27,254	65.4
% Increase	13.5	3.1	3.1	7.2	7.2	18.5	18.5	
% Increase 1971-1975	40.0	42.0	42.0	29.0	29.0	42.4	42.4	

Table 18
 New York State
 Doctoral Degrees Granted
 By Sector
 1970-71 to 1974-75

Year	All Institutions		State University		City University		Independent Institutions	
	Number	% of Total	Number	% of Total	Number	% of Total	Number	% of Total
1970-71	2,645	22.6	598	22.6	94	3.6	1,953	73.8
1971-72	3,595	18.7	671	18.7	135	3.8	2,789	77.5
% Increase	35.9	12.2	12.2	43.6	42.8			
1972-73	3,953	20.1	796	20.1	150	3.8	3,007	76.1
% Increase	10.0	18.6	18.6	11.1	7.8			
1973-74	3,655	20.4	745	20.4	151	4.1	2,759	75.5
% Increase	(7.5)	(6.4)	(6.4)	.7	(8.2)			
1974-75	3,434	21.7	744	21.7	184	5.3	2,506	73.0
% Increase	(6.0)	(.1)	(.1)	21.9	(9.2)			
% Increase 1971-1975	29.8	24.4	24.4	95.7	28.3			

Table 19
New York State
1st Professional Degrees Granted
By Sector
1970-71 to 1974-75

Year	All Institutions		State University		Independent Institutions	
	Number	% of Total	Number	% of Total	Number	% of Total
1970-71	3,897		665	17.1	3,232	82.9
1971-72	4,256		717	16.8	3,539	83.2
% Increase	9.2		7.8		9.5	
1972-73	4,824		819	17.0	4,005	83.0
% Increase	13.3		14.2		13.2	
1973-74	4,811		769	16.0	4,042	84.0
% Increase	(.3)		(6.1)		.9	
1974-75	4,995		807	16.2	4,188	83.8
% Increase	3.8		4.9		3.6	
% Increase 1971-1975	28.2		21.4		29.6	

The increasing work load and activity in graduate and professional education relative to undergraduate education is evident in the fact that, for the State as a whole, the number of bachelor's degrees conferred annually increased by 21 percent in the past four years while the number of master's degrees increased by 40 percent, that of doctoral degrees by almost 30 percent and of first-professional degrees by 28 percent. In the latter two categories, the independent institutions have retained their high proportion of total degrees conferred. The City University of New York, with few and small programs leading to the doctorate, has doubled its degree output in the past four years but, in 1974-75, conferred less than 200 doctoral degrees or 5 percent of the total. The State University institutions confer about one-fifth of all doctoral degrees in the State, a ratio which has remained fairly constant for the past four years. Finally, one must note that the total number of doctorates conferred annually (and by both the State University and independent institutions) has decreased in each of the past two years, even though the growth over a four-year period has been significant. A major contributing factor to this recent decline may be the current oversupply of those holding the Ph.D. degree in relation to the plateauing demand and prospective decline in demand from academic insti-

tutions. Many candidates for the degree may have chosen to halt their pursuit of it and seek alternative careers. This type and level of education is one to be watched over the next few years in terms of its impact upon the graduate institutions (much as it has been watched in recent years and is currently under constant review).

Contrary to the record on academic doctoral degrees in recent years, the numbers of students pursuing first-professional degrees (medicine, dentistry, law, etc.) have continued to grow and the rate of change has been positive for most of the years since 1970-71 (Table 19). The independent institutions conferred almost 30 percent more such degrees in 1974-75 than they did four years earlier. The professional schools of the State University have also increased their professional degrees granted by one-fifth. The City University of New York operates no programs leading to the degrees in this category. As noted above, the independent institutions are dominant in this field, most of their professional schools having been founded many years ago while those of the State University have either been acquired or established only in the past 20 years. The relative shares of the two sectors have remained virtually constant over the past four years with the year-by-year rates of growth also being quite similar.

FACILITIES: AMOUNT, DISTRIBUTION, AGE, CONDITION, VALUE AND DEBT

More than two-thirds of the physical facilities now in place on the campuses of the State's public and independent colleges and universities have been constructed since the end of World War II. Almost 50 percent of the total facilities have been built in the past 12 years. The book value of these plant assets exceeds \$6 billion and more than 80 percent of the facilities are considered to be in satisfactory condition. For every student enrolled, there are about 120 square feet of usable space or the equivalent of a 10' by 12' room (Appendix Tables III and IV).

If enrollments and educational programs, and research and other activities of the higher educational establishment were to grow as they did through the decade of the 60's and the early 70's, concomitant growth of facilities and equipment, libraries and laboratories, dormitories and dining halls were necessary. The often maligned "edifice complexes" of college and universities presidents were as much induced by the growing student demand for access and admission as they were supported and abetted by the availability of new sources of funds. At the same time that sharply increasing numbers of students were looking

for new and additional doors to knock upon, Federal and State legislation and agencies made available massive amounts of funds in both outright grants and loans for the construction and equipping of educational and auxiliary plant.

Facilities growth, in general, followed the patterns of enrollment growth even though some of the funds went into replacement of obsolete and decaying structures and rehabilitation of others. The growth of enrollments and programs of the State University was accompanied by and, obviously, made possible by, a construction program of size and scope unprecedented in any state such that, by 1974, the University-operated institutions had available some 34 million net assignable square feet of plant facilities, valued at more than \$2 billion. Two-thirds of this space is for academic and administrative purposes, one-third for auxiliary enterprises--dormitories, dining halls, student unions, etc. (Appendix Table III). Between 1972 and 1974, the University added 13 percent to its facilities capacity and construction continues today on a large number of projects. In the Fall of this year, the University announced a moratorium on the start of new construction of some 104 projects valued at \$156 million. Prior to this action, having sharply reduced enrollment goals and plans, the University had, over the past

five years, cancelled planned construction with an estimated cost of \$1.3 billion.

Nonetheless, commensurate with its enrollments, the University facilities comprise almost one-third of the total higher educational facilities of the State (Appendix Table IV). Given the size and structure of the State's public higher educational system at the end of World War II and the construction which has occurred, it is understandable that almost 90 percent of the University's facilities have been built in the past 30 years and that more than 80 percent of all its facilities are in good condition (Appendix Table V). By 1972, the senior institutions of the University had in place approximately 150 square feet of net assignable space per full-time equivalent student enrolled.

By 1972, the 30 upstate community colleges had more than five million square feet of usable space and in the succeeding two years added an additional 20 percent to this total. Because these institutions primarily serve students in their own localities, little of their facilities are for auxiliary purposes, with more than 90 percent of their facilities devoted to academic and administrative purposes. Here, too, the building program has been substantial, most of these institutions having been

established since 1945 and about 80 percent of their facilities having been constructed since that year. Given the nature of their programs, among other factors, the space available to the community colleges is far less than proportional to enrollments. The upstate institutions have about 7 percent of the total State institutional space with an average of about 60 square feet per student enrolled. The value of these facilities may be estimated at about \$325 million.

The City University of New York has only in recent years begun its major construction programs. In 1972, the senior institutions of the University had less than 6 million square feet of net usable space, amounting to about 50 square feet per student, more than half of which had been constructed prior to World War II and only slightly more than one-half of which was deemed to be in satisfactory condition. These institutions are attended dominantly by commuting students so that almost 95 percent of the space is for academic and administrative purposes. Although the University added more than 13 percent to its facilities between 1972 and 1974, its needs in this area continue to be great, given the growth of the institution's enrollments and program commitments. Its facilities are far less than proportional to its enrollments, amounting to only 8 percent of the State's academic and administrative plant. Valued at less than \$400 million, the City University's facilities come to

only 6 percent of the total State investment in higher education plant, again, far less than proportional to the University's share of student enrollments.

The eight community colleges now under the Board of Higher Education added 20 percent to their 2.2 million square feet of usable space between 1972 and 1974. As with the senior institutions of the University, only 5 percent of the space is for auxiliary purposes. Although almost two-thirds of the facilities have been constructed since 1945, less than 40 percent of their total facilities are considered to be in satisfactory condition. The facilities of these City institutions come to about 3 percent of total State facilities and provide about 45 square feet of space per student, the lowest ratio of space to enrollment of all the State's institutional groups. The value of the facilities is approximately \$140 million.

By 1974, the State's independent institutions had more than 65 million square feet of net usable space, almost two-thirds of which was for academic and administrative purposes and about one-third for auxiliary enterprises. These institutions had added something less than 5 percent to their total facilities between 1972 and 1974.

More than 60 percent of the facilities of the independent institutions have been constructed since the end of World War II and 86 percent are deemed to be in satisfactory condition.

In all, these facilities comprise almost 60 percent of total State facilities and provide about 160 square feet of net usable space per student enrolled, the highest ratio of space to enrollment of the various institutional sectors. The facilities of the independent sector have a gross value in excess of \$3 billion.

The educational, administrative and auxiliary facilities of the State University, with a gross book value of about \$2.3 billion, are encumbered by debt in excess of \$2 billion or 91 percent of book value. In effect, this debt amounts to \$13,250 per full-time equivalent student and the annual debt service of almost \$112 million in 1973-74 amounts to an average of about \$730 per student. It will, thus, be noted that the annual debt service per student is about equal to the average undergraduate tuition charge of the State University of \$725 per year.

The aggregate facilities debt of the independent institutions is estimated at about \$1.1 billion against total plant value of more than \$3 billion, the former thus being about 35 percent of the latter. The total debt amounts to about \$4,400 per full-time equivalent student enrolled and the annual debt service of about \$82 million per year comes to \$325 per student. Generalizations and averages for the independent sector are less meaningful than for the public sector in that there is wide

diversity among the institutions in the amount of debt and annual debt service.*

Current and adequate data on the debt and debt service of The City University of New York and the various community colleges are not immediately available at this time but it is known that, especially for the former, the debt burden is becoming a significant factor in the financing of the institutions.

A recent survey of construction in progress indicates that, at the present time, there are 144 capital construction projects, with an estimated total cost of \$1.8 billion, underway on the campuses of the State's public and independent higher educational institutions. The State University of New York, including the 30 community colleges under its jurisdiction, has 90 construction projects in progress on 35 campuses, at an estimated full cost of \$747 million. Forty-two of these projects, valued at \$576 million, are on the campuses of the State University operated institutions. Forty-eight of the projects, valued at \$170 million, are for the upstate community colleges.

The City University of New York has 36 projects underway on 19 campuses, including its community colleges, with an

*For details, see the previously cited The State-Aided Colleges: Financial Profiles - 1969-1973.

estimated value of \$898 million.

In the independent sector, 18 projects are in progress on 14 campuses at an estimated cost of \$107 million. These projects, however, are only those for which the Dormitory Authority is providing funds. It is known that additional construction is in progress at a number of independent institutions being financed by institutional, Federal and other funds.

The progress and future status of all construction projects in both the public and independent sectors are being affected, if not threatened; by the precarious financial condition of the City of New York and the tightness of the financial markets confronting several State agencies including the Housing Finance Agency and the Dormitory Authority. Some examples: cash is not available for current work on some community college projects, resulting in a shutdown of construction at Nassau Community College and the prospect that other shutdowns will occur. The State University has cash available for only one more month of construction, at this time, and there is a considerable amount of unfinanced debt encumbering current operating funds.

At the City University, projects valued at \$18 million at the senior colleges may be temporarily halted; there is also a planned shutdown of community college projects of the City

University with an estimated value of \$37 million.

In the independent sector, financing of 2 of the 18 projects has not been obtained to date although there is a commitment from the Dormitory Authority. All institutions with new applications have been notified by the Dormitory Authority that they will not be able to obtain funding and that this situation will continue for the foreseeable future.

Prospective enrollment declines of the 1980's are now accompanied by the additional factor of the difficulties of financing resulting from the conditions of the financial markets and public financing authorities. At the present time, all sectors of higher education are carefully reviewing construction in progress and construction plans and reordering priorities. Obviously, it would be damaging to a number of institutions, as well as being wasteful, if facilities already under construction cannot be completed.

VI

SPECIFIC STATE AID PROGRAMS: INSTITUTIONS AND STUDENTS

The foregoing sections have broadly surveyed recent trends in major aspects of the State's higher educational system: State financing, enrollments, degrees conferred and facilities. The following sections summarize recent trends in programs of

State aid for certain special purposes: aid to students, support of educational opportunity for disadvantaged students and subsidies of health professions education. Detailed data on these programs are available in the annual reports prepared by the administering offices and in other documents published by the Education Department.

Regents College Scholarships

As total full-time undergraduate enrollments have risen and their distribution among institutional sectors has changed in recent years, so has the distribution of recipients of Regents college scholarships. The number of Regents scholarships awarded annually is set by legislative formula in such manner that the total number changes only randomly and very little from year to year. Hence, the number of scholarships awarded in 1974-75, 67,232, was only 9 greater than the number awarded in 1971-72. But over this three-year period, the total number of full-time undergraduates increased by almost 38,000 or 8 percent. Consequently, the ratio of scholarship winners fell from 14.3 percent to 13.2 percent of students enrolled (Table 20).

Table 20
Regents College Scholarship Recipients
And Full-Time Undergraduate Enrollment
By Sector - 1971-72 and 1974-75

	1971-72		1974-75	
	Total Full-Time Undergrad. Enrollment	Scholarship Recipients Number Percent of Enrollment	Total Full-Time Undergrad. Enrollment	Scholarship Recipients Number Percent of Enrollment
State University				
State Univ. Operated	110,909	26,821 24.2	125,209	28,801 23.0
Percent of Total	23.7		24.8	42.8
Community Colleges	65,039	2,303 3.5	72,370	3,040 4.2
Percent of Total	13.9		14.3	4.5
City University				
Senior & Comm. Colleges	113,830	8,156 7.2	130,994	6,922 5.3
Percent of Total	24.4		25.9	10.3
Independent Institutions	177,238	29,679 16.7	176,420	27,994 15.9
Percent of Total	38.0		34.9	41.6
Other Institutions ¹	NA	264 -	NA	475 -
Percent of Total	-	.4	-	.7
Totals	467,016	67,223 14.3 ^a	504,993	67,232 ^a 13.2 ^a

¹Hospital nursing schools, business and vocational schools.

^aExcluding "Other Institutions".

We have seen that the enrollment growth of the past 15 years has varied considerably among the sectors, resulting in marked changes in the sectoral distribution of enrollments. Obviously, these changes, along with changes in the specific institutional choices made by scholarship recipients, have resulted in changes in the distribution of scholarship recipients and in the proportions of recipients enrolled in the various institutions. While the University-operated institutions of the State University increased their share of total full-time undergraduate enrollments by only about 1 percentage point between 1971 and 1974, they increased their share of Regents scholarship recipients by 3 percentage points, from about 40 percent of the total to almost 43 percent.

Although the total numbers are small, the community colleges under the jurisdiction of the State University also increased their share of scholarship recipients more than proportionally to increases in enrollment. This group of institutions is the only one which also increased its percentage of scholarship winners to enrollment over the three-year period, the other groups sustaining decreases in such ratios attributable to the static number of total scholarships awarded.

The City University, including its community colleges, experienced a 15 percent increase in enrollment over this three-year period, but a 15 percent decrease in the number of scholarship recipients, from more than 8,000 to less than 7,000. While the University's open enrollment policy would, in part, account for the decreasing share of total scholarship winners attending its institutions, it should not account for the decrease in its absolute number of such students.

In the independent sector, enrollment fell by .5 percent between 1971 and 1974 but the number of scholarship winners in attendance fell by more than 1,600 or almost 6 percent. As a result of this shift in enrollments and student choices, the share of total scholarship winners in the independent sector fell from 44.2 percent in 1971-72 to 41.6 percent in 1974-75. This also meant that, in the latter year, the State University institutions enrolled both a larger number and a larger percentage of scholarship winners than did the independent institutions.

Although the ratio of scholarship recipients to students enrolled has fallen over the past three years, it still holds that almost one-quarter of the full-time undergraduate students enrolled in the State University institutions are scholarship recipients. For the independent institutions, the percentage

of scholarship holders is 16 percent of the undergraduates but the lower ratio is attributable to the fact that almost 28 percent of the students in the independent institutions are not residents of New York State and, therefore, do not qualify for State financial aid. The independent institutions have 22 percent of their State resident enrollments receiving scholarships, less than 2 percentage points below the ratio which obtains for the State University.

The City University of New York, including its community colleges, has had only 5 to 7 percent of its undergraduate students holding Regents scholarships. While less than 1 percent of its community college students hold such scholarships, less than 8 percent of those enrolled in the senior institutions are scholarship holders. Since scholarships are awarded even though students are not charged tuition, as applies for scholar incentive awards, it is difficult to explain the low ratio of scholarship holders in the senior institutions of the City University. It may be attributable to the fact that a large proportion of scholarship recipients in the City attend colleges upstate or out of State.

Scholar Incentive Awards

In recent years, more than one-half of all State student aid has gone to students attending public institutions, a

development inconsistent with the original purpose of the Scholar Incentive Program of aiding the non-public institutions and their students. While there was never an intent to exclude students attending public institutions from eligibility for basic financial aid, the Scholar Incentive Program was intended to enable the independent institutions to continue to recruit and enroll students as the low tuition public institutions grew in number and size.

When the 1974 Legislature adopted the new Tuition Assistance Program, the State took a large step in the direction of restoring its student aid system to the structure and purposes originally planned. Implementation of the new program, and appropriate modification of it over time, will fulfill goals sought by the Regents and recommendations made by them since 1967 when they published their study, Freedom to Pursue a College Education and reemphasized by their issuance of a 1972 Position Paper, Financing Higher Education Needs in the Decade Ahead.

Because of the very low income level which the law established for eligibility for the maximum grant of \$600, only about one-fifth of the students receiving scholar incentive grants in 1973-74 qualified for a maximum grant. At the other end of the

scale, more than one-third of the students received the minimum grant. As a result, the average annual award in 1973-74 came to little more than \$250, hardly a sum which could make a significance difference in the ability of the average student to finance his college attendance. Moreover, the data indicate that there are little differences in the distribution of students by income level between public and independent institutions. Thus, the low average award was considerably more helpful, in relative terms, to the student attending a low tuition public institution, than it was to one attending an independent institution with a tuition rate of \$2,000 or more.

In 1974-75, the new Schedule B of the Tuition Assistance Program, which retained a maximum award of \$600, and which applied to students who had entered college prior to that year, resulted in the average award rising to \$335. The virtual identity of income distributions in public and independent institutions continued to be borne out by the fact that the average award was at this same level in both sectors.

The new Schedule C for first-time students entering in the Fall of 1974, providing a maximum award of \$1,500, resulted in an average award of almost \$600 but with the significant difference that the average was \$330 for students in State

University institutions and \$1,050 for students attending independent colleges.

The Tuition Assistance Program, especially with its new income and award schedules as compared to those of the former Scholar Incentive Program, is, obviously, of considerable importance to the students of New York State.

In 1971-72, 43 percent of the full-time undergraduate students received incentive grants; but, with increases in total enrollments and continued inflation, the percentage of recipients had fallen to less than 41 percent by 1974-75 (Table 21). This reduction occurred in spite of the adoption of the new program between these two years. More than two-thirds of the full-time undergraduate students attending State University operated institutions received grants in 1971-72, a ratio which continued to hold in 1974-75. About 60 percent of the students attending upstate community colleges receive these basic grants.

The TAP program has little impact for The City University of New York because resident full-time undergraduate students pay no tuition and do not qualify under the law. Only some 2 percent of CUNY students received grants in 1971-72, being non-residents of the City, and just over 1 percent received grants in 1974-75.

Table 21
Scholar Incentive Award Recipients
And Full-Time Undergraduate Enrollments
By Sector - 1971-72 and 1974-75

	1971-72		1974-75	
	Total Full-Time Undergrad. Enrollment	Scholar Incentive Recipients Number Percent of Enrollment	Total Full-Time Undergrad. Enrollment	Scholar Incentive Recipients Number Percent of Enrollment
State University				
State Univ. Operated	110,909	75,261 67.9	125,209	85,139 68.0
Percent of Total	23.7	36.9	24.8	39.9
Community Colleges	65,039	40,024 61.5	72,370	43,291 59.8
Percent of Total	13.9	19.6	14.3	20.3
City University -				
Senior & Comm. Colleges	113,830	2,208 1.9	130,994	1,457 1.1
Percent of Total	24.4	1.1	25.9	.7
Independent Institutions	177,238	82,523 46.6	176,420	76,477 43.3
Percent of Total	38.0	40.4	34.9	35.8
Other Institutions ¹	NA	4,081	NA	7,090
Percent of Total	-	2.0	-	3.3
Totals	467,016	204,097 42.8a	504,993	213,454 40.9a

¹Hospital nursing schools, business and vocational schools.

^aExcluding "Other Institutions".

Some 47 percent of undergraduate students attending independent institutions qualified for grants in 1971-72, a ratio which fell to 43 percent last year. But, as with Regents scholarships, the grants are awarded only to New York State residents. When the enrollment figures of the independent institutions are corrected for this factor, the percentage of grant recipients rises to almost 65 percent for 1971-72 and 60 percent for 1974-75, ratios which are somewhat lower than those for the State University but which still indicate the very high proportion of enrolled students who both qualify for the grants and, apparently, depend upon them to cover costs of attendance.

With the continued growth of the State University, students attending its institutions now comprise a larger percentage of the total TAP award recipients than do those attending the independent institutions. The ratios have shifted over the past three years. In 1971-72, 37 percent of total scholar incentive awards went to students attending the State University-operated colleges; more than 40 percent of awards went to students attending the independent colleges. By 1974-75, the percentage of awards going to State University students rose to almost 40 percent while those going to students in the independent sector fell to less than 36 percent.

It is anticipated that the terms of the new legislation and the new payment schedule will result in both an increase in the total number and proportion of students receiving grants in independent institutions and an increase in the total share of State funds going to such students. It is estimated that the share of total award funds going to the independent sector will rise from approximately 46 percent in 1973-74 to about 61 percent in 1977-78. When the new program is in full operation, students in the independent colleges will be receiving about \$30 million more in State financial aid than they received in 1973-74, more than doubling the award levels of that year.

Graduate Scholar Incentive Awards

In 1974-75, 36 percent of the 61,000 full-time graduate and professional school students enrolled in New York State institutions received State tuition assistance awards totaling \$6.7 million. With a higher proportion of non-state residents enrolled in such programs in all institutional sectors than obtains for undergraduate study, the ratio of award recipients to State residents came to more than 50 percent. This ratio was almost 10 percentage points higher than prevailed three years earlier (Table 22).

Table 22
 Graduate Scholar Incentive (TAP) Awards
 And Full-Time Graduate Enrollments
 By Sector - 1971-72 and 1974-75

	1971-72		1974-75	
	Total Graduate Enrollment	Scholar Incentive Recipients Number Percent of Enrollment ¹	Total Graduate Enrollment	Scholar Incentive Recipients Number Percent of Enrollment ¹
State University Percent of Total	14,029 24.3	5,053 29.5 46.9	14,554 23.7	7,654 34.5 68.6
City University Percent of Total	4,000 6.9	1,473 8.6 43.9	5,536 9.0	1,886 8.5 40.6
Independent Institutions Percent of Total	39,767 68.8	10,605 61.9 42.4	41,361 67.3	12,646 57.0 48.6
Totals	57,796	17,131 43.5	61,451	22,186 53.0

¹Percent of New York State residents only; the ratios are lower for total enrollments.

While the ratios of State-aided students and total enrollments did not differ much among institutional sectors in 1971-72, the State University increased its ratio, over the next three years, to more than two-thirds of all State residents enrolled in these program areas. The ratio of State-aided resident students attending the independent institutions rose from 42 to almost 49 percent, while the ratio for the City University, with a small total number of such students, fell by 4 points to 41 percent.

As indicated earlier, more than two-thirds of all these students are in the independent institutions, about one-quarter are in State University units and less than 10 percent attend the City University. These relationships have not changed significantly in the past three years, during which period total graduate enrollments rose by 6 percent while aid recipients increased by almost 30 percent. While a number of factors may account for the higher ratio of State-aided students in the State University versus the independent institutions, two possibilities are that, in the former institutions, (1) a larger percentage of students have established financial emancipation status and (2) a larger percentage are in the lower income brackets.

Total State Student Aid Awards: Numbers and Dollars

Between 1971-72 and 1974-75, total full-time enrollments in higher educational programs at all degree levels rose by almost 8 percent but the number of State student aid award recipients rose by less than 5 percent. As a result of these differences in growth rates, the percentage of New York State resident students receiving some type of State award fell from almost 55 percent to 52 percent (Table 23). These figures alone, would indicate that the higher income levels of the new Tuition Assistance Program were not sufficient to compensate for the inflationary increases in current dollar incomes of students and their families. Other factors preventing an increase in the ratio of award recipients were (a) that the new program was in its first year of operation and (b) the new income and award schedules applied only to first-year students. The percentage of New York State resident students receiving awards dropped in all institutional sectors over the three-year period.

The rate of participation in the State's student award system for students enrolled in the institutions directly operated by the State University is higher than for students enrolled in the independent institutions. While the University had slightly more than one-quarter of all full-time New York State resident

Table 23
Total State Student Aid Awards
And Total Full-Time Enrollments
Of New York State Residents
By Sector - 1971-72 and 1974-75

	1971-72		1974-75	
	Individual		Individual	
	Total Full-Time NYS Residents Enroll. ²	Award Recipients Percent of Total NYS Residents	Total Full-Time NYS Residents Enroll. ²	Award Recipients Percent of Total NYS Residents
State University State Univ. Oper. % of Total	117,941 26.3	74.7 79.1	102,916 40.4	73.6 78.0
Comm. Colleges % of Total	63,478 14.1	64.2 65.8	44,587 17.5	61.6 63.1
City University-Senior & Comm. Colls. % of Total	114,680 25.5	10.6 10.9	10,929 4.3	8.0 8.2
Independent Inst. % of Total	152,988 34.1	45.3 64.3	96,610 37.9	44.4 62.9
Other Institutions	NA	-	NA	7,522
Totals	449,087	250,470 46.9 ^a	489,495	262,564 45.0 ^a

The numbers of award recipients shown here are less than the sums of the awards shown in previous tables because dual awards to individual recipients are here counted only once.
 2. New York State resident enrollments estimated by applying to the reported total enrollments of these years the ratio of residents to total enrollment for 1973-74, a ratio which does not change significantly over a period of three years.
 a. Calculation of percentages excludes award recipients in "Other Institutions" since enrollment figures for these institutions are not available.

students, it had between 38 and 40 percent of award recipients. The independent institutions, with about one-third of all State resident enrollments, also had between 37 and 40 percent of the award recipients.

These participation rates are evident also in that almost 80 percent of the State resident students enrolled in the State University are award recipients as opposed to about 63 percent for students enrolled in the independent institutions. With the greater growth of total enrollments in the State University over the three-year period, its institutions, by 1974-75, exceeded the independent sector in share of total State awards, its share rising to more than 40 percent while that of the independent sector fell to less than 38 percent.

It should not, of course, be surprising that the ratio of award recipients is lower in the independent sector than in the public sector. While the State University enrolls a significant number and percentage of students in the upper income levels who do not qualify for awards based on income alone, the independent sector has a larger number and proportion of such students, for the obvious reason that more of them can afford to meet the tuition charges of the independent institutions.

At the same time, income distribution data (not cited here)

show that the independent institutions, in the aggregate, enroll percentages of low-income students close to the ratios found in the public institutions. This pattern of enrollment would account for the fact that the percentage of award recipients of State resident enrollments in the independent sector is as high as it is, more than 60 percent.

If any anomaly appears in these data, it is that less than two-thirds of the students enrolled in the upstate community colleges are receiving State awards. Although detailed income distribution data are not available, it is quite improbable that the family incomes of students attending these institutions are higher than those of students attending the State University colleges or close to the income levels of students attending the independent institutions. The low participation rate suggests that many eligible students attending the community colleges simply do not apply for and use tuition assistance awards. A major reason for this may be poor advisement of these students in both the high schools and the community colleges in which they enroll.

As indicated earlier, both the percentage of total State awards and the ratio of award recipients to students enrolled are very low for the City University because the full-time

resident students in those institutions pay no tuition. The low participation rates of 1971-72 in the City University fell to even lower rates by 1974-75, probably attributable to the marked increase of enrollments of City residents under the open admissions policy.

Decline in the rate of participation of New York State residents in the State's student aid programs has been a continuing phenomenon over a period of years, primarily owing to the low levels of and infrequent changes in the income schedules defining eligibility. It is, nonetheless, somewhat disturbing that this decline in participation continued through 1974-75 when the new Tuition Assistance Program became operational. The participation rates should rise as the new program becomes applicable to students in all class years and if certain proposed modifications in the program are adopted.

Although the rate of participation in State awards of students attending independent institutions is lower than that for those in the public sector and, by 1974-75, the total number of awards was lower in the independent institutions than in State University, the total dollar amount and the percentage share of award funds is largest for the independent institutions. In 1971-72, State University students received 38 percent and

those in the independent institutions, 40 percent of the total number of awards; but State University students received only 34 percent of the total dollars awarded while students in the independent sector received almost 50 percent of the funds (Table 24). The reasons for this may be adduced as follows: (1) that the total of State awards received [scholarship and scholar incentive] may not exceed tuition payable, a provision which would limit grants to some State University students because of the low tuition charges and (2) a larger number of students receiving maximum and mid-range awards in the independent institutions than in the State University. In 1971-72, the average award was \$100 higher for the independent sector student than for the student in State University. The tuition limit would also account for the fact that the share of total award funds going to students in the upstate community colleges is lower than their share of the total number of awards and that the average award of \$188, in 1971-72, was \$80 lower than the average for State University and \$180 lower than for the independent institutions.

These same relationships obtained during 1974-75 although the share of total funds increased for both State University and the community colleges while it fell for the independent institutions. The impact of the new and higher payment schedule

Table 24
Total State Student Aid Grants,
Tuition Charges and Average Awards
By Sector - 1971-72 and 1974-75

	1971-72			1974-75		
	Total Grants Awarded (\$Thous.)	Total Tuition Charges (\$Thous.)	Grants % of Tuition Award	Total Grants Awarded (\$Thous.)	Total Tuition Charges (\$Thous.)	Grants % of Tuition Award
State University Univ. Oper. Inst.	\$24,879	\$ 74,600	33.3	\$ 36,884	\$103,500	35.6
% of Total	33.9			34.6		
Comm. Colleges	7,856	30,100	26.1	13,309	39,900	33.3
% of Total	10.7			12.5		
City University- Seniors Comm. Colls.	3,221	NA	-	3,134	NA	-
% of Total	4.4			2.9		
Independent Inst.	36,259	317,500	11.4	49,500	391,500	12.6
% of Total	49.4			46.5		
Other Institutions	1,229	NA	-	3,646	NA	-
% of Total	1.7			3.4		
Totals	\$73,444			\$106,473		

Total reported tuition charges adjusted for estimated charges to out-of-state students.
See footnote 2 of Table XXVIII.

is evident in the increase in the average award for the independent institutions of \$143; for State University, of \$90; and for the community colleges of \$110. The community colleges showed the greatest increase in total grants, 69.4 percent over 1971-72, reflecting both an increase in the total number of awards and the elimination of the requirement that students pay the first \$200 of tuition.

The higher grant levels of the new program resulted in increases for all sectors in the ratio of State grants to tuition charges. Nonetheless, the differential impact of the State grants on tuition liability of students in the various sectors is significant. For students in the State University, the grants provide more than one-third of the funds needed to meet tuition levies. For New York State students attending the independent institutions, the grants provided only 11.4 percent of tuition costs in 1971-72 and 12.6 percent in 1974-75. More important to the individual student is, not this marked difference in relative share of tuition covered by State grants, but the absolute dollars involved. The aid ratios meant that the average student in the independent institution needed \$2,500 of his own or family funds to meet the average tuition charge approaching \$3,000 per year, while the student attending

the State University needed only about \$470 to cover the average tuition charge of \$725.

Again, one must note that the share of tuition covered by State grants is lower for students in the upstate community colleges than it is for those attending State University institutions. This continues to be true, in spite of the fact that the ratio of grants to tuition rose more for this institutional sector than it did for the others over the three-year period and the fact that the average tuition charge in the community colleges is the lowest of all three sectors. One must reiterate that a relatively large number and proportion of students enrolling in the community colleges are not applying for State aid funds for which they may be eligible.

Programs for Disadvantaged Students

The State has made considerable progress in recent years in assisting public and private higher institutions to serve educationally and economically disadvantaged students. The Board of Higher Education of the City University of New York originated these efforts with its SEEK program in 1966. State University began its own Educational Opportunity Programs in 1968, and in 1970 the Legislature approved the Higher Educati

Opportunity Program for non-public institutions and students. The State's funding of these programs (with matching funds for the City University), and the impact of the programs with respect to enrollment are summarized in Table 25.

Funding for private institutional efforts has increased from \$4.0 million in 1970-71 to \$7.6 million in 1974-75, with the same level being provided for 1975-76. By the end of the 1972-73 academic year, HEOP was aiding 62 institutional programs at private colleges and universities, serving 5,300 students. The increased funds have permitted both larger enrollments and higher support per student, the latter rising from \$1,100 in the earlier year to more than \$1,400 for 1974-75. The success of this program is also evident in the fact that more than 1,000 disadvantaged students had achieved degrees by the end of the 1972-73 academic year and the dropout rate had been held to 20 percent, a figure not substantially above the dropout rate for all college students between the freshman and senior years.

The State University's Educational Opportunity Programs have received a doubling in funding, permitting a doubling of enrollments, between 1970 and 1974. Almost 10,000 students were served by the SUNY activities in 1974-75.

Appropriations for State aid to the City University for its SEEK programs have paralleled those for State University, with

TABLE 25
 Educational Opportunity Programs
 For Disadvantaged Students
 State Budgetary Support
 1970 - 1975

<u>Program</u>	<u>1970-71</u>	<u>1972-73</u>	<u>1974-75</u>	<u>Change</u> <u>1970-1975</u>	
				<u>Amount</u>	<u>Percent</u>
Private Inst.-HEOP					
Appropriation (\$Million)	\$4.0	\$6.8	\$7.6	\$3.6	90
Enrollment	3,520	5,300	5,300	1,780	50
Approp./Student	\$1,136	\$1,292	\$1,432	\$296	26
State Univ.-EOP					
Appropriation(\$Million)	\$6.7	\$13.9	\$13.9	\$7.2	107
Enrollment	4,968	9,925	9,925	4,957	100.
Approp./Student	\$1,349	\$1,397	\$1,397	\$48	3
City Univ.-SEEK					
Appropriation(\$Million)	\$9.0	\$12.5	\$13.2	\$4.2	47
Enrollment	6,092	8,500	10,700	4,608	76
Approp./Student	\$1,477	\$1,471	\$1,233	(\$244)	(16)
Total - All Institutions					
Appropriation (\$Million)	\$19.7	\$33.2	\$34.7	\$15.0	76
Enrollment	14,580	23,725	25,925	11,345	78
Approp./Student	\$1,350	\$1,400	\$1,338	(\$12)	(1)

State funds rising from \$9 million in 1970-71 to \$13 million in 1974-75.

In total, educational opportunity programs in public and private institutions of the State are receiving about \$35 million of State funds and are serving almost 26,000 students. While the City University matches State funding, bringing the total support per student enrolled to about \$2,500 per year, and the \$1,400 per student at units of the State University supplements general tax support for those institutions, the funding under HEOP for the private institutions is not yet considered adequate. Lacking matching funds from other units of government, the private institutions must, themselves, provide the additional support required to meet their general educational costs.

Beyond the EOP programs operated by State University for students enrolled in its universities and colleges, the State system also operates Educational Opportunity Centers (formerly Urban Centers and Cooperative College Centers) which have been funded at the level of \$11-12 million per year since 1970-71. These centers serve high school dropouts and other groups of young people seeking to improve their learning skills so as to enter college or to develop other skills which will enable them

to secure acceptable employment. The centers annually serve some 15,000 persons.

State Subsidies for Health Professions Education

New York State now provides direct unrestricted financial aid to its non-public medical and dental schools through two programs: capitation aid under Section 6402 of the Education Law and enrollment expansion aid under contracts between the State Education Department and the institutions.

Direct subsidy of medical education provided by independent institutions was initiated in 1967 when budgetary appropriations were provided to the State University to support contracts for enrollment expansion between the University and the medical schools. Under these contracts, the administration of which was transferred to the Education Department in 1973, each school is paid \$6,000 for each student enrolled in each class year over the average number of students enrolled in each respective class in the five-year period 1961-65. Contracts with the schools paralleled Federal legislation in requiring that each institution expand first-year enrollments by a minimum of five students. Payments are limited to 25 students per class.

In addition to the funding of current operations of the medical schools, the institutions were provided with supplemental

contracts for State grants for capital construction purposes. These grants ranged from \$2 million for an institution with ultimate expanded enrollment of less than 300 students to a maximum of \$5 million for total enrollment of 500 students or more.

Legislation adopted in 1974 permitted the payment of one-third more than the base amounts for students enrolled in three-year programs.

Thus, each school could qualify for a maximum of \$600,000 per year or \$2.4 million for the three or four years of the educational program. Through gradual increases of enrollments over the past eight years, most of the schools now qualify for the maximum grants. Similar contracts were negotiated with the two private dental schools in 1971. The dental schools receive \$3,000 for each additional student over the number enrolled in the base period of 1966-70. Capital grants are also available to these institutions on the same basis as those for the medical schools.

The 1970 Legislature adopted an additional program of aid to medical schools in the form of capitation grants in the amount of \$1,500 for each student enrolled, less that number for which expansion aid was paid. The dental schools were not included

in this legislation but, in 1973-74, the two non-public dental schools received emergency aid in the amount of \$1.5 million.

Accepting recommendations of the Regents, the 1974 Legislature adopted a new Section 6402 of the Education Law treating the medical and dental schools equally in providing institutional aid in the amount of \$1,500 for each lower-division student and \$2,500 for each upper-division student enrolled with one-third more than those base amounts for students enrolled in three-year programs.

The total effective funding of these contractual and legislated programs since their initiation is summarized in Table 26. In all, the eight non-public medical schools have received operating aid in the amount of \$47 million since 1967 and the dental schools, since 1971, have received \$4.3 million. Capital grants aggregating \$42 million have also been made to the institutions or will be made, in total, by the time the dental schools and three medical schools complete construction programs which are still in progress.

The non-public medical and dental schools also benefit from State funds provided under the general program of aid to non-public higher institutions, the Bundy program, either directly, in the case of the three independent colleges, or indirectly

Table 26
State Aid to Non-Public,
Medical and Dental Schools
1967-1975
(\$ Thousand)

	Expansion Operating Aid 1967-74	Capita- tion Aid 1970-74	Expansion Operating Aid 1974-75	Capita- tion Aid 1974-75	Total Opera- ting Aid 1967-75	Capital Grants
<u>Medical Schools</u>						
Albany	\$ 2,598	\$ 1,631	\$ 600	\$ 644	\$ 5,473	\$ 4,000
Columbia	2,592	2,822	564	960	6,938	5,000 ^a
Cornell	1,146	2,021	462	676	4,305	1,091 ^a
Mt. Sinai	3,276	537	600	358	4,771	4,000
N.Y. Medical	1,356	3,060	742	1,684	6,842	5,000
N.Y. University	2,100	3,048	594	1,132	6,874	5,000 ^a
Rochester	1,758	1,652	600	570	4,580	3,000
Yeshiva	2,664	2,587	600	1,337	7,188	5,000
Total-Med. Sch.	\$17,490	\$17,358	\$4,762	\$7,361	\$46,971	\$32,091
<u>Dental Schools</u>						
Columbia	\$ 228	\$ 300	\$ 186	\$ 263	\$ 977	\$ 2,000 ^a
N.Y. University	174	1,200	217	1,742	3,333	8,000 ^a
Total-Dental Sch.	\$ 402	\$ 1,500	\$ 403	\$2,005	\$ 4,310	\$10,000

^aCapital grant contracts still in effect. Other construction projects have been completed and State grants fully paid.

in the case of the seven professional schools affiliated with universities. Under this program, as noted earlier, institutions receive \$3,000 for each professional degree conferred. The Bundy aid is not paid for those students on behalf of whom enrollment expansion aid is paid, nor is capitation aid paid for these expansion students.

The apparent impact of these programs of financial aid to the medical and dental schools is summarized in Table 27. First-year classes in the medical schools have increased by 393 students or 58 percent over the past eight years. The total enrollments have risen by more than 1,500 students, -- also 58 percent. When all institutions reach their targeted enrollments and have full use of additional facilities, both entering classes and total enrollments will have risen by about 60 percent over those of the mid-1960's. The two private dental schools have increased their first-year classes by 12 percent over the average of the base period. New York University is unlikely to expand enrollment much above the level which has prevailed at the institution for some years. In fact, the Council on Dental Education has criticized the institution for having too large an enrollment for the facilities available and for the faculty which can be supported by the institution's budget.

Table 27
Impact of State Aid
Non-Public Medical and Dental Schools
First-Year and Total Enrollments
Base Period and 1975-76

Medical Schools	Average	First	Average	Total	Increase	Increase	Percent
	1st-Yr. Enrol't. Base Per. 1	Year Enrol't. 1975-76	Total Enrol't. Base Per. 1	In First Year Class	Total Enrol't. 1975-76	Total Enrol't.	
Albany Med. Col.	61	110	244	445	49	201	80
Columbia Univ.	118	150	461	595	32	134	27
Cornell Univ.	84	102	335	416	18	81	21
Mt. Sinai Sch. of Med.	0	80	0	331	80	331	--
N.Y. Medical Col.	127	180	501	771 ^b	53	270 ^b	42
N.Y. University	126	171	499	702	45	203	36
Univ. of Rochester	70	98	273	391	28	118	40
Yeshiva University	95	183	364	577	88	213	93
Totals	681	1,074	2,677	4,228	393^a	1,551^a	58
Dental Schools							
Columbia Univ.	41	52	136	206	11	70	27
N.Y. University	174	192	665	609 ^c	18	(56) ^c	10
Totals	215	244	801	815	29	14	12
							2

¹ Base period for medical schools is 1961-65; expansion contracts began in 1967; base for dental schools is 1966-70; contracts began in 1971.
^a Excluding the new school, Mt. Sinai, total enrollment growth is 1,220, or 46 percent; first-year class growth is 313, or 46 percent
^b New York Medical College has an "extra" class enrolled as it phases back from a three-year to a four-year program. Its average enrollment in the future will be about 700.
^c N.Y.U. Dental School has changed from a four to a three-year program. Entering and graduating class size is the appropriate measure.

Both N.Y.U. and Columbia University have been criticized by the Council on the grounds of the inadequacy of facilities and both are now constructing new and remodeling existing buildings, aided by Federal and State capital grants. Columbia has qualified for a State grant of \$2 million for capital construction for its dental school and N.Y.U., already eligible for a capital grant of \$5 million, has received, through special legislation adopted in 1975, an additional State commitment of \$3 million for its new dental education facilities. These State capital construction grants, along with the new capitation funds, should do much to strengthen these two important institutions.

For the past eight years, the Education Department has been administering a program of State financial aid to schools of nursing education to stimulate expansion of enrollment. The initial 1967-68 appropriation of \$800,000 rose to a maximum of \$2.9 million during the 1971-72 year when all classes and eligible institutions were being funded. Owing to the expected funding of the Federal capitation aid program for nursing education, State funding began a phase-out in 1972-73, with the appropriation dropping to \$1.5 million in that year and to \$1 million for 1974-75. In fact, the Department paid out only \$375,000 of this last appropriation in phasing out this program during 1974-75.

The success of the State's effort may be partially evaluated by a review of the enrollment expansion data presented in Table 28. First, it must be acknowledged that hospital diploma programs have been losing enrollment, primarily because of the growth in the number and availability of associate degree programs offered by the State's community colleges. The latter programs have had an increase in enrollment of more than 8,000 students or 250 percent between 1967 and 1974 (enrollments actually peaked in the 1972-73 year). State aid has undoubtedly helped the baccalaureate degree institutions to increase admissions and total enrollments by more than 100 percent over the past eight years. In all, enrollments in programs in private and public institutions leading to eligibility for licensure as a registered nurse have been increased by more than 13,000 students or 80 percent over the period covered and the annual number of graduates has risen by more than 3,000 or almost 70 percent.

New York Higher Education Assistance Corporation

Beyond the various programs of State financial aid providing direct grants to students, the State also assists students in postsecondary institutions to meet their costs of attendance by subsidized loans. The New York Higher Education Assistance

Table 28
 Impact of State (And Federal)
 Programs for Expansion of Enrollment
 Schools of Nursing
 1967-1974

Program	1967-68	1970-71	1973-74	Change 1967-74	
				Number	Percent
Hospital Diploma					
Admissions	3,314	3,446	3,016	(298)	(9)
Total Enrollment	8,844	7,812	7,733	(1,111)	(13)
Graduates	2,876	2,162	2,267	(609)	(21)
Associate Degree					
Admissions	2,349	4,829	6,194	3,845	164
Total Enrollment	3,365	6,469	11,804	8,439	251
Graduates	988	2,358	3,763	2,775	281
Baccalaureate Degree					
Admissions	1,599	2,809	3,326	1,727	108
Total Enrollment	4,262	5,536	10,134	5,872	138
Graduates	869	1,223	1,965	1,096	126
<hr/>					
Total R.N. Programs					
Admissions	7,262	11,084	12,536	5,274	73
Total Enrollment	16,471	19,817	29,671	13,200	80
Graduates	4,733	5,743	7,995	3,262	69
<hr/>					
State Aid (\$000)	\$ 800	\$2,500	\$1,000	-	-

Corporation was formed in 1958 for the purpose of guaranteeing and subsidizing interest on loans to New York State residents attending college either within or outside the State. By 1974-75, the various lending institutions, banks, savings and loan associations, etc., had granted over 1.4 million loans to more than 700,000 students, with the total amount guaranteed by HEAC exceeding \$1.4 billion. In 1974-75, the Corporation guaranteed 130,604 new loans made by the lending institutions in the amount of \$178 million.

The Corporation's annual report for 1974-75 shows that, in the latest three-year period, new student loans were negotiated in the amount of \$487 million amounting to 34 percent of the Corporation's total loans guaranteed in its entire 18-year history. The average loan has reached a peak of almost \$1,400. As of the end of the 1974-75 year, \$600 million of the cumulative total of loans made had been repaid to the lending institutions; outstanding loans amounted to \$844 million.

Both the annual number of loans being made and the total dollar volume indicate that this source of funds for the financing of higher educational costs is very important to New York State students.

The State annually appropriates funds for the operating costs of the Corporation and to meet the costs of interest subsidies and loan defaults. The appropriation of \$7.6 million for 1974-75, for example, provided \$3.4 million for administration and \$2.5 million for interest subsidies and defaults. An additional \$1.7 million was appropriated following action by the 1974 Legislature approving additional interest subsidies for loans taken by students whose adjusted family income is more than \$15,000 and less than \$30,000 per year.

The 1974 legislation also created the New York State Higher Education Services Corporation to "administer State supported student aid and loan programs". The new Corporation combines the New York Higher Education Assistance Corporation and its loan guaranteeing function with the student financial aid component of the State Education Department. During the 1975-76 year, all of the State's scholarship and student aid programs formerly administered by the Education Department are being consolidated, along with the prior functions of HEAC, into the new Corporation.

VII

CAPITAL CONSTRUCTION AND FEDERAL PROGRAMS

Two important areas have not been and will not be covered in this survey of the state of things in higher education in New

York: (1) the present and prospective status and financing of construction of higher educational facilities and (2) the impact of current and the prospects for future Federal programs for the support of higher educational institutions and students.

A section of this paper has summarized some of the salient facts on the amount, value and sectoral distribution of plant facilities on the campuses of the public and private institutions of the State and on the amount of outstanding debt and annual debt service burdens. But the entire area of the growth and financing of facilities for public and private higher institutions of the State can only be grasped by a complete review of the operations and activities of the various State and Federal agencies over the past 10 to 15 years: the State University Construction Fund, the Dormitory Authority of the State of New York, the Housing Finance Agency, the City University Construction Fund, etc. The reader is referred to the annual reports of these agencies as well as to the annual reports and other documents published by the public and private higher educational institutions.

Staff of the Education Department are now engaged in a study of the higher educational facilities picture, the present status of construction in progress and of the plans of the

various institutional sectors for facilities construction in the years ahead.

The past, present and prospective impact of Federal funds for higher education is essential to any evaluation of State efforts and to sound planning of State financing programs. Funds provided under the Higher Education Facilities Act and the Higher Education Act contributed heavily to the construction of new academic facilities and the acquisition of equipment for the colleges and universities of New York State and the nation during the 1960's and the early 1970's. The purposes of these programs have been accomplished and the flow of funds is now reduced to very small annual amounts for equipment.

A second major area of Federal funding has been that of sponsored research, the funds coming from a number of Federal agencies and flowing dominantly to the major universities. Although certain fields of research have received cutbacks in levels of funding, the amounts of funds flowing to the major universities, primarily for research in the physical and natural sciences and the medical sciences continue to be of great importance to the major universities and professional schools. A review and analysis of this field of Federal sponsorship is beyond the scope of this paper.

The major programs of Federal support of importance to the State and its higher educational institutions and students are those continued, revised and added by the Education Amendments of 1970 and by legislation for the support of public professional education. The student aid programs Basic Educational Opportunity Grants, Supplemental Educational Opportunity Grants, and State Student Incentive Grants are important not only to the students who benefit directly from them but to the State by its own financing of students and programs. The State of New York also has a strong interest in Federal programs in fields of medicine, dentistry, nursing and other health professions because of their long existing State programs in these fields. The Education Department maintains continuing liaison with Federal administrative agencies and with key members of congressional committees and their staffs. The Commissioner of Education has testified before important congressional committees on pending Federal legislation and has set forth the views of the Department which Federal legislation should take into account. State programs evaluate the status of persons which he believes are relevant to the interests of the State as a whole and to individuals. State programs also are important to the State as a whole and to individuals.

to those which are emerging more insistently as public needs.

The statements made by the Commissioner are available for perusal and have been widely distributed. The Department also publishes annually a brochure on Federal Legislation and Education in New York State in which it sets forth its evaluation of the impact of present Federal programs and its recommendations for changes in existing programs and for new programs. The 1976 edition of this document will be available in February or March.

Other sources of information on the impact of Federal financial aid programs and their relationship to State funding are the annual or periodic reports prepared by the various departmental program offices, task forces, commissions, etc. The annual reports of the Department's Office of Higher Education Opportunity Programs, for example, contain data on the Federal BEOG, SEOG and GWS programs. The recent final report of the Regents Task Force on Medical School Enrollment and Physician Manpower contains an analysis of the relationship of and the impact of the State and Federal programs providing financial aid to medical schools.

VIII

PROSPECTS: POPULATION TRENDS, HIGHER EDUCATIONAL ENROLLMENTS,
THE ECONOMIC OUTLOOK AND THE FISCAL CONDITION OF THE CITY AND
STATE OF NEW YORK.

What of the future? In its review of major quantitative aspects of New York State's higher educational system: enrollments, degrees, facilities, special programs and State financing, this paper has described where we have been, where we are today and how we got here. It has made no projections or predictions, nor has it made recommendations for future courses of institutional and State action. It will not do so now; but it will, in these concluding pages, attempt to describe the environment, framework, milieu which is likely to exist in the immediate years ahead and the consequent circumstances under which higher education will be developing in New York State.

In summary, we point to the following:

1. Population growth in the United States has been slowing down for a number of years and the growth rate of New York State's population has been less than that of the rest of the nation.
2. The annual rate of growth of full-time undergraduate enrollments has also been declining and it is expected that total enrollments will reach a plateau in the early 1980's, with enrollments actually decreasing in

the succeeding years. Because of the population trends noted above and certain other factors, these trends will be more marked in New York State than in the rest of the nation.

3. The nation has been in a period of recession, if not economic stagnation, for several years and many analysts predict that economic growth will be at a relatively low rate over the next 15 years. Again, the situation of New York State may be poorer than that of many other states and the nation as a whole.
4. Owing to population and economic trends noted above, as well as to several other factors, including public policies, the governments of the City and State of New York have been and may continue to be immersed in serious financial problems requiring budgetary retrenchment, restructuring of priorities and severe constraints on appropriations.

Population Trends

Population growth has been slowing down in the United States since the founding of the nation. While growth per decade and per year remained remarkably constant at about 33 percent and 3 percent, respectively, during the first 70 years of the nation's development (or since the first census was taken in 1790), it

fell sharply during the Civil War decade and has generally been lower than average during depression and war years. The depression decade of the 1930's saw the lowest birth rate and population growth rate in the nation's history. This pattern continued through the five years of World War II. The baby boom of the immediate post-war years produced large numbers of college-age students of the decade of the 1960's and, along with other causes and stimulæ, brought the high and increasing levels of college enrollments of that decade. Surely, it was not to continue forever. The nation's population grew by 4.5 million fewer persons in the decade of the 60's than in that of the 50's. The arrival of the "pill", changing individual and social values, attitudes and behavior, especially with respect to marriage, the family, parents without partners, partners without children, the pall of the atomic bomb, and imminent demise for all--all of these and other factors have brought a sharp decline in fertility and birth rates. Demographers now project a falling rate of population growth through the year 2,000 with the annual growth rate falling to less than 1 percent during the 1970's, lower again during the 1980's and, possibly as low as .7 percent in the 1990's. Of immediate relevance is the fall in the birth rate which has occurred

during the late 60's and early 70's and, more specifically, the impact which these lower birth rates will have upon the age distribution of the population and, particularly, the size and change in size of the traditional college age population.

Since 1950, and perhaps earlier, population growth has been substantially lower in New York State than it has been for the rest of the nation (Table 29). The reasons are, perhaps, historically self-evident. A region and its population grow and develop to some level of maturity. New York is an eastern seaboard state, one of the original 13 states, the entry point for most of the immigration from Europe; it began early and the major part of its industrial, commercial, financial, and population growth occurred in the nineteenth and the first half of the twentieth centuries. The slowdown in its population growth may be attributable to this early maturation but, in the past two decades, it may also be attributable to such factors as its economic and meteorological climate, the attractiveness and opportunities of other states and regions, and the general increased mobility of the nation's population.

While the population of the rest of the nation increased by 19 percent during the 1950's, that of New York rose by only

Table 29
 Population Trends
 United States and New York State
 1950-1974
 (Thousand)

	1950	1960	1970	1974	Percent Increase		
					1950/60	1960/70	1970/74
Total Population							101.
United States	151,326	179,323	203,235	212,000	18.5	13.3	4.3
Other Than N.Y. State	136,495	162,541	184,994	193,473	19.0	13.8	4.6
New York State	14,830	16,782	18,241	18,527	13.2	8.7	1.6

13 percent or 30 percent more slowly. As the nation's total population grew more slowly during the 1960's, by less than 14 percent, the growth rate in New York was less than 9 percent. In the past four years, the population of New York has been growing at only one-third the rate of the rest of the country.

For the entire decade of the 1970's, the rest of the nation is projected to grow in population by about 10 percent, but New York's population will grow by less than half of that rate. In the decade of the 80's, the rest of the nation's population is expected to grow by slightly more than 10 percent with New York's population growing about 6.8 percent (Table 30).

Changing population growth rates also produce significant changes in the age distribution of the population. The 15-24 year age group, that from which traditional college enrollment is drawn, will grow more in size in New York than the rest of the nation during the decade of the 70's (18.3 percent versus 12.8 percent); but then, in the 1980's, it will decrease in size more rapidly than will that of the rest of the nation, with a fall of 17.6 percent versus 14.8 percent.

These reversals of trends which have prevailed for many decades are large and significant and the projections for New York State are especially so.

Table 30
New York State
Present and Projected Population Trends
1970-1995
(Thousand)

	1970	1975	1980	1985	1990	1995
Total U.S. Population	204,879	213,925	224,132	235,701	246,639	256,015
Other Than New York	186,638	195,363	205,014	215,913	226,222	235,093
Percent Change - 5-year	4.7	4.9	5.3	4.8	3.9	
Age Group - 15-24	33,515	37,003	37,803	34,759	32,213	33,609
Percent of Population	18.0	18.9	18.4	16.1	14.2	14.3
Percent Change - 5-year	10.4	2.2	(8.1)	(7.3)	4.3	
Total State Population	18,241	18,562	19,118	19,788	20,417	20,922
Percent Change - 5-year	1.8	3.0	3.5	3.2	2.5	
Age Group - 15-24	2,946	3,344	3,485	3,264	2,872	2,889
Percent of State Population	16.2	18.0	18.2	16.5	14.1	13.8
Percent Change - 5-year	13.5	4.2	(6.4)	(12.0)	.6	

Expected Enrollment Declines Among 15-24 Year Olds

The decrease in the population of 15-24 year olds will, in the absence of other compensating factors, result in proportionate decreases in the number of high school graduates and in the number of students enrolling as full-time undergraduates. Studies conducted by the State Education Department indicate that the number of high school graduates will be at about the same level in 1980 as in 1973 (Table 31). That number will then decrease through most of the years of the 1980's and reach a level of only 167,000 by 1990. This level will be equal to that of the 1960 high school graduating class, a decrease in the 10-year period of 31 percent. Assuming that the college-going rate will remain at the present level, this will mean that the number of full-time freshmen enrolling in the State's institutions in 1980 will also be at the 1973 level, if not slightly lower. By 1990, the freshman class will drop below 100,000 students, a 31 percent fall from the levels of 1973 and 1980.

Changes in the level of total full-time undergraduate enrollments will, of course, occur more slowly as each entering class changes in size. The total of such enrollments will continue to increase with the 1980 level being a bit more than

Table 31
New York State
Past and Projected High School Graduates
And College Enrollments
1969-1990
(Thousand)

	1969	1973	% Change 1969-73	1980	% Change 1973-80	1990 ¹	% Change 1980-90	% Change 1973-90
High School Graduates	223.0	242.8	8.9	243.1	.1	166.8	(31.4)	(31.3)
Full-Time Freshmen	121.3	140.5	15.8	139.8	(.5)	96.5*	(31.0)	(31.3)
Full-Time Undergraduate Enrollments	400.3	484.0	20.9	495.0	2.3	380.3	(23.2)	(21.4) ¹⁰⁵
Public	223.5	314.1	40.5	325.6	3.7	245.8	(24.5)	(21.7)
Private	176.8	169.8	4.0	169.4	(.2)	134.5	(20.6)	(20.8)
Part-Time Undergraduate Enrollments	163.2	215.6	32.1	249.4	15.7	260.0	4.2	20.6
Graduate & Professional Enrollments	151.8	180.2	18.7	213.6	18.5	229.6	7.5	27.4
Full-Time	51.1	60.3	18.0	70.9	17.6	66.6	(6.1)	19.4
Part-Time	100.7	119.9	19.1	142.7	19.0	163.0	14.2	13.6

*Projections of the number of full-time freshmen for 1990 have not been published by the State Education Department. However, if they bear the same ratio to high school graduates as prevailed in 1973, the resulting figure of 96.5 thousand emerges. If the ratio to full-time undergraduates is applied, the figure ranges from 107 to 115 thousand freshmen.

2 percent above the 1973 level. The public institutions will grow by almost 4 percent but the independent institutions are expected only to maintain current enrollment levels, possibly having slightly lower levels. By 1990, institutions will enroll about 23 percent fewer students than in 1980.

It is anticipated that part-time undergraduate enrollments will continue to grow, by about 16 percent through 1980 and by an additional 4 percent over the following 10-year period. Graduate and professional enrollments are also expected to grow by some 18 percent between 1973 and 1980 and by an additional 7.5 percent between 1980 and 1990. The latter 10-year period, however, may see a decrease of as much as 6 percent in full-time graduate and professional enrollments, with part-time enrollments growing by as much as 14 percent.

Earlier sections of this paper have portrayed the growth in higher educational enrollments and the changing patterns of distribution among public and independent sectors. If the projections materialize, the levels and distribution of full-time undergraduates will appear as shown in Table 32 in 1980 and 1990. This group of students is, of course, the largest of the groups and provides the basic reason for being of most colleges and is the mainstay for stability of the institutions.

Table 32
 New York State Colleges and Universities
 Full-Time Undergraduate Enrollments
 Past and Projected 1963-1990
 (Thousands)

	1963		1968		1973		1980		1990	
	No.	%	No.	%	No.	%	No.	%	No.	%
State University	64.8	26.9	131.8	35.2	188.1	38.9	210.3	43.0	161.5	43.2
Four-Year	42.2	17.5	72.2	19.3	99.3	20.5	111.5	22.8	91.4	24.4
Two-Year	22.6	9.4	59.6	15.9	88.8	18.4	98.8	20.2	70.1	18.8
City University	44.6	18.5	69.4	18.5	126.1	26.1	109.9	22.4	79.3	21.2
Four-Year	37.1	15.4	51.1	13.6	84.5	17.5	73.4	15.0	54.0	14.4
Two-Year	7.5	3.1	18.3	4.9	41.6	8.6	36.5	7.4	25.3	6.8
Private Institutions	131.8	54.6	173.3	46.3	169.8	35.0	169.5	34.6	133.1	35.6
Four-Year	128.0	53.1	167.4	44.7	163.5	33.7	163.8	33.4	129.1	34.5
Two-Year	3.8	1.5	5.9	1.6	6.3	1.3	5.7	1.2	4.0	1.1
Total State	241.2	100.0	374.5	100.0	484.0	100.0	489.7	100.0	373.9	100.0

This, then, is the picture which is emerging and the one upon which, in large part, institutional leaders and State educational and fiscal planners should make their plans for the future.

Economic Prospects of New York State

The economic growth and development of New York State has been negligible in recent years and, in some sectors such as manufacturing, there has been absolute decline. Many factors account for this situation, including those which have been catalogued above. Obviously, the current economic recession only exacerbates conditions produced by longer term trends. The important point is that, in the view of many economists the economy of the State has matured and, although there will be continuing changes in its structure, there is not likely to be much growth in the aggregate in the decades ahead.

But, economic projections may be self-fulfilling or the future reality may be quite different from that projected because of unexpected and unpredictable changes in circumstances. Major changes in public policies with respect to such things as tax levels and structures may also produce more favorable results.

Economic Problems of New York City

Finally, the facts with respect to the financial conditions and problems of the City of New York and the State of New York

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APPENDIX

A NOTE ON THE DETERMINATION OF COST PER STUDENT

At various times and places one finds citations of educational costs expressed on a per student basis. Such cost figures, developed by various agencies and groups often differ significantly for the same year and the same institution. In recent years accounting systems and financial reporting of colleges and universities, public and private, have tended to become more uniform and are increasingly based upon charts of accounts and recording and reporting formats recommended by and adopted upon by recognized national associations. The accounting systems and procedures of these organizations do have a common base, some of the National Association of Colleges and Universities Business Officers, the American Institute of Certified Public Accountants and the National Commission for Higher Education Management Systems. The data presented in text tables A and B are derived from the annual financial reports of the institutions all of which use the reporting definitions and categories recommended by the organizations named above. Where differences in the content or classification of financial statements exist, adjustments and reclassifications have

been made so as to achieve uniformity and comparability for all institutions. Obviously, one cannot claim that these figures are free of error nor that there is no room for disagreement on some of the adjustments, exclusions and inclusions made in arriving at the defined quantities. The only claim made here is that the same procedures have been employed in determining the expenditures and costs of each of the independent and public institutions and that the resulting figures have an acceptable level of reliability and comparability.

"Educational and general expenditures" the cost measure used in this study exclude outlays for student aid since such funds or write-offs do not pay for resources used in the production of educational services but help the student to buy those services and pay his share of the costs through the tuition route which ultimately shows up in the tuition revenues of the institution. Secondly, excluded by definition are expenditures of auxiliary enterprises - dormitories, dining halls, book stores and other units providing services to students other than educational services. For the purposes at hand, other adjustments and exclusions have been made in the category of educational and general expenditures.

The purpose is to determine all of those expenditures integral to the institution in the provision of education to enrolled students see footnotes to Text Tables 4 and 5.

We present this somewhat extended clarification of concepts and terminology because the issue of costs of education is an important one and because there has been so much confusion created by the publication and dissemination of 'cost' data in recent years without documentation, definition or commonality of calculus.

Appendix Tables

- I. New York State Financing of Higher Education
Appropriated Funds Made Available - 1971-72 - 1975-76

- II. New York State Full-Time First-Time Freshmen
Distribution by Sector, Fall 1969 to Fall 1971

- III. New York State Postsecondary Educational Facilities
Net Assignable Square Feet, Total, Academic and Auxiliary
1971 and 1972

- IV. New York State Percentage Distribution of Postsecondary
Educational Facilities, By Institutional Sector and
By Function Within Sectors

- V. New York State Postsecondary Educational Facilities,
Percentage Distribution of Gross Square Footage
By Age of Facilities, 1972

- VI. New York State Postsecondary Educational Facilities,
Gross Net Assignable Square Feet Per Full-Time
Equivalent Student, 1972

Table I
New York State
Financing of Higher Education
Appropriated Funds Made Available
1971-72 1975-76
(3 Million)

	1975-76	1976-75	1971-76	1972-73	1971-72	Change	
						1971-72/1975-76	Amount Percent
State University of New York							
State Purpose-Fiscal Repts.	661.7	609.6	536.6	501.8	475.8	165.9	36.9
Less Income Funds Applied	(27.8)	(27.8)	(27.0)	(27.0)	(27.0)		
Net State Funds Reqd.	633.9	581.8	509.6	474.8	448.8	143.5	36.1
Subsidiary Related Below	(12.2)	(11.2)	(76.7)	(23.6)	(23.7)		
Regular Operations	511.7	502.3	432.9	406.6	396.7	137.0	36.7
Estimated Employee Benefits	118.2	129.8	98.0	82.6	78.0		
State Purpose-Regular							
Operations - Adjusted	669.9	612.1	527.7	469.0	422.7	191.2	41.7
City University of New York	176.9	156.5	142.1	108.7	90.0	86.9	96.6
Community Colleges	117.6	118.9	112.6	98.5	92.0	65.6	69.1
Upstate-UNY	90.9						
N.Y.C.-N.H.E.	66.5						
Aid to Non Public Inst.	77.7	78.1	69.6	38.1	32.8	16.5	80.6
Rudely Aid	37.6	56.9	69.1	10.2	26.9	10.5	111.6
Medical & Dental Schools -							
Expansion Contracts							
Operating Funds	5.1	5.1	6.7	1.1	2.7	2.6	88.9
Capital Funds	5.1	6.0	6.9	6.2	6.0	1.1	12.5
Capitalization Funds	8.8	8.9	6.7	7.7	1.7	5.1	117.8
Nursing Schools Expansion							
Poly Inst. of N.Y. (Brooklyn)	7	2.0	1.2	1.5	2.5	(2.5)	(100.0)
						(2.1)	(76.7)

	1971-72/1975-76						Change	
	1972-76	1976-75	1971-76	1977-73	1971-72	Amount	Percent	
Aid to Students	25.9	11.6	12.1	11.7	12.0	(6.1)	(19.1)	
Regents Schol. & Fellowships	98.1	88.6	56.6	54.0	61.7	56.6	115.1	
Schol. Incent. - Tuition	1.6	1.6	5.8	2.1	1.8	1.8	100.0	
Assistance Program	36.6	36.7	36.2	33.2	31.8	2.6	8.2	
NY Schol. & Fellowships	7.6	7.6	7.6	6.8	6.1	1.3	20.6	
Programs for Disadvant. Students	9.7	9.6	9.8	9.6	9.0	.7	7.8	
MRP-Private Institutions	13.1	13.2	12.1	12.5	12.5	8	6.6	
ROP-NYNY	2.2	2.6	2.7	2.5	2.0	.2	10.0	
RRK-CUNY	1.6	1.7	2.0	2.0	2.0	(.6)	(20.0)	
College Discovery-Comm. Colleges	7.7	9.2	8.2	7.7	8.0	(.3)	(3.8)	
Update								
N.Y.C.								
Other State Educ. Dept. Programs	2.6	2.5	2.2	2.0	2.1	.3	16.3	
MRD-Higher Education Services	1.9	1.6	1.1	1.1	2.9	1.0	36.5	
MRD-Professional Educ. Services	6	2.1	1.8	1.7	1.7	(1.1)	(64.7)	
Regents Exam. & Schol. Services	5	5	5	5	8	(.3)	(37.5)	
Kinship & Schol. Grants	2	2	2	2	3	(.3)	(100.0)	
Teacher Training Grants	1	1	2	2	2	.1	30.0	
Educ. of Native Americans	15.1	16.2	16.6	13.8	16.2	.9	6.3	
Other Appropriations to SUNY	7	.6	.9	9	.5	.2	40.0	
Student Loans	12.2	11.5	11.7	11.7	12.5	(.3)	2.6	
Educational Opportunity Centers	1.5	1.6	1.1	1.2	1.2	.1	25.0	
New York Network-T.V.								
Institute for Policy Altern.								
New Grant-Ocean Science								

Appropriations to Other State Agencies	Change					
	1975-76	1976-77	1977-78	1978-79	1979-80	1971-72
	Amount	Amount	Amount	Amount	Amount	Percent
Higher Ed. Serv. Corp.	1.9	4.6	-	-	-	1.9
Higher Ed. Assistan's Corp.	4.9	5.6	2.3	2.1	2.8	131.3
N.Y. Ocean Science Laboratory	-	1.0	.7	.7	.7	(7.7) (100.0)
N.Y.S. Science & Tech. Found.	1.3	1.2	.3	.3	.3	-
Total Funds	91,253.4	91,172.6	91,001.2	829.8	423.6	51.0

Footnotes

- All appropriations listed in this tabulation are for current operating purposes and exclude capital funds, debt service funds, first instance appropriations, etc.
- SUNY was permitted to waive tuition charges in the amount of \$12 million in 1973-74, \$11 million in 1974-75; for 1975-76, the waivers are limited to \$9 million. These amounts should be considered additions to "aid to students" shown in the table and are identical in budgetary effect to the smaller amounts shown for SUNY scholarships.
- The 1974-75 budget enactment authorized a first instance advance to the Dormitory Authority for a \$2 million loan to Manhattan College (since repaid) and a loan by the Authority of several hundred thousand dollars to Cazenovia College.
- A special enactment appropriated \$1.0 million in 1975-76 for a supplemental capital grant to New York University for its Dental School. This amount has been omitted from the appropriations shown for the current year since it will not be drawn upon until 1977-78 and will have to be reappropriated in that year.

Table 1 - Page 4 of 4

Footnote (cont'd)

5. Appropriations for State University have been adjusted and reclassified somewhat to show (a) the amounts required for regular campus operations, (b) amounts for other functional purposes shown in the table, (c) amounts for certain special programs and (d) amounts for employee benefits. The amounts for this last item, employee benefits, are estimated on the basis of percentages provided by the Department of Audit and Control.
6. For the years prior to 1975-76, amounts for administration of Regents scholarships, fellowships and scholar incentive (TAP) awards are estimated at 70 percent of the appropriations for the administering office. The 1975-76 appropriation for the office is shown as only 9.6 million, the major part of its funds having been reassigned to the Higher Education Services Corporation and are reflected in the 91.9 million shown for that agency.
7. The New York Ocean Science Laboratory is being phased out and its appropriation of \$.7 million for 1975-76 transferred to the SUNY Sea Grant Program.

Table II
New York State
Full Time First Time Freshmen
Distribution by Region
Fall 1969 to Fall 1976

Year	All Institutions			State University			City University			Independent		
	Total	Insts.	%	Total	Insts.	%	Total	Insts.	%	Total	Insts.	%
Fall 1969	177,861	48,179	26.5%	55,186	16,367	10,826	20,367	8,820	11,367	67,310	2,957	4.4%
% of Total	100.0	27.2	60.8	31.1	9.2	15.1	11.4	4.9	6.4	38.3	2.4	13.1
Fall 1970	177,728	56,791	31.9%	58,108	19,328	10,780	33,907	14,676	19,231	63,911	2,987	4.7%
% of Total	100.0	31.9	60.8	32.7	10.9	18.5	19.1	8.8	10.9	35.8	1.7	9.5
Fall 1971	161,011	61,096	37.9%	59,727	41,866	17,861	28,606	17,271	20,335	61,680	2,337	4.1%
% of Total	100.0	37.9	60.7	37.1	26.0	11.1	17.7	12.2	14.5	37.1	1.4	8.7
Fall 1972	139,396	60,192	43.2%	62,380	45,106	18,274	33,396	13,366	19,828	61,882	2,377	4.1%
% of Total	100.0	43.2	60.7	44.8	32.4	13.1	23.9	9.7	14.2	44.4	1.8	12.9
Fall 1973	161,109	63,177	39.2%	67,183	43,467	21,718	31,736	14,671	16,883	67,190	3,079	4.6%
% of Total	100.0	39.2	60.7	41.7	26.9	13.5	19.7	10.4	12.0	41.7	2.2	13.8
Fall 1974	163,934	64,781	39.6%	67,892	43,416	22,476	33,880	16,186	17,696	66,162	2,661	4.1%
% of Total	100.0	39.6	60.7	41.4	26.5	13.7	20.7	11.1	12.1	40.1	1.6	9.8
Change 1974	18.8	31.9	61.1	23.0	24.9	19.6	66.1	81.3	93.1	(6.7)	(9.7)	(6.5)

Table 141

New York State
Postsecondary Educational Facilities
Net Assignable Square Feet
Total, Academic, and Auxiliary
1977 and 1976
('000 except)

	1977		1976		Percent Increase		
	Net Assignable Sq. Feet		Net Assignable Sq. Feet		1972-76		
	Total	Aux.	Total	Aux.	Total	Aux.	
State University	17,017	9,937	19,910	11,666	11.9	12.6	17.2
State Poly Tech	29,993	9,839	11,860	11,166	12.9	12.8	11.1
Community Colleges	3,019	6,966	6,070	698	20.1	11.8	382.2
City University	2,961	7,876	9,171	8,373	15.3	9.6	618.3
Senior Institutions	1,764	3,629	6,311	6,058	11.6	7.6	291.9
Community Colleges	2,197	2,197	2,660	2,317	21.1	16.6	-
Independent Institutions	62,397	22,157	62,305	21,751	4.7	1.1	7.2
Four-Year	60,628	21,607	61,076	22,806	1.9	2.3	6.5
Two-Year A Type	1,769	548	2,229	845	24.6	29.3	26.9
Total	107,367	71,363	116,386	78,991	7.1	7.1	11.8

Net Assignable Square Feet - Gross square footage of floor areas less circulation corridors, elevators, janitorial areas, laboratories, mechanical, plumbing and heating areas, etc.

Academic - Instruction, research, libraries, laboratories, administration, etc.

Auxiliary - Dining halls, student union, etc.

TABLE IV
 NEW YORK STATE
 PERCENTAGE DISTRIBUTION OF POSTSECONDARY EDUCATIONAL FACILITIES
 BY INSTITUTIONAL SECTOR AND
 BY FUNCTIONAL SECTOR
 1974

	PERCENT OF FACILITIES			PERCENTAGE OF FACILITIES	
	TOTAL	ACADEMIC	NON-ACADEMIC	ACADEMIC	NON-ACADEMIC
State Universities	24.8	27.1	22.5	27.1	22.5
State Inst. Tech	12.1	12.1	12.1	12.1	12.1
Other Colleges	63.1	60.8	65.4	60.8	65.4
Non-State Universities	1.2	1.2	1.2	1.2	1.2
State Inst. Tech	1.2	1.2	1.2	1.2	1.2
Other Colleges	87.6	87.6	87.6	87.6	87.6
Independent Inst.	1.9	1.9	1.9	1.9	1.9
State Inst. Tech	1.9	1.9	1.9	1.9	1.9
Other Colleges	98.1	98.1	98.1	98.1	98.1
Total	100.0	100.0	100.0	100.0	100.0

THE UNIVERSITY OF CHICAGO
DEPARTMENT OF CHEMISTRY
RESEARCH REPORT
NO. 1000

Sample No.	Concn. (g/l)	Viscosity (poise)	Temperature (°C)
1	0.5	0.012	25
2	1.0	0.024	25
3	2.0	0.048	25
4	4.0	0.096	25
5	8.0	0.192	25
6	16.0	0.384	25
7	32.0	0.768	25
8	64.0	1.536	25
9	128.0	3.072	25
10	256.0	6.144	25
11	512.0	12.288	25
12	1024.0	24.576	25
13	2048.0	49.152	25
14	4096.0	98.304	25
15	8192.0	196.608	25
16	16384.0	393.216	25
17	32768.0	786.432	25
18	65536.0	1572.864	25
19	131072.0	3145.728	25
20	262144.0	6291.456	25
21	524288.0	12582.912	25
22	1048576.0	25165.824	25
23	2097152.0	50331.648	25
24	4194304.0	100663.296	25
25	8388608.0	201326.592	25
26	16777216.0	402653.184	25
27	33554432.0	805306.368	25
28	67108864.0	1610612.736	25
29	134217728.0	3221225.472	25
30	268435456.0	6442450.944	25
31	536870912.0	12884901.888	25
32	1073741824.0	25769803.776	25
33	2147483648.0	51539607.552	25
34	4294967296.0	103079215.104	25
35	8589934592.0	206158430.208	25
36	17179869184.0	412316860.416	25
37	34359738368.0	824633720.832	25
38	68719476736.0	1649267441.664	25
39	137438953472.0	3298534883.328	25
40	274877906944.0	6597069766.656	25
41	549755813888.0	13194139533.312	25
42	1099511627776.0	26388279066.624	25
43	2199023255552.0	52776558133.248	25
44	4398046511104.0	105553116266.496	25
45	8796093022208.0	211106232532.992	25
46	17592186044416.0	422212465065.984	25
47	35184372088832.0	844424930131.968	25
48	70368744177664.0	1688849860263.936	25
49	140737488355328.0	3377699720527.872	25
50	281474976710656.0	6755399441055.744	25
51	562949953421312.0	13510798882111.488	25
52	1125899906842624.0	27021597764222.976	25
53	2251799813685248.0	54043195528445.952	25
54	4503599627370496.0	108086391056891.904	25
55	9007199254740992.0	216172782113783.808	25
56	18014398509481984.0	432345564227567.616	25
57	36028797018963968.0	864691128455135.232	25
58	72057594037927936.0	1729382256910270.464	25
59	144115188075855872.0	3458764513820540.928	25
60	288230376151711744.0	6917529027641081.856	25
61	576460752303423488.0	13835058055282163.712	25
62	1152921504606846976.0	27670116110564327.424	25
63	2305843009213693952.0	55340232221128654.848	25
64	4611686018427387904.0	110680464442257309.696	25
65	9223372036854775808.0	221360928884514619.392	25
66	18446744073709551616.0	442721857769029238.784	25
67	36893488147419103232.0	885443715538058477.568	25
68	73786976294838206464.0	1770887431076116955.136	25
69	147573952589676412928.0	3541774862152233910.272	25
70	295147905179352825856.0	7083549724304467820.544	25
71	590295810358705651712.0	14167099448608935641.088	25
72	1180591620717411303424.0	28334198897217871282.176	25
73	2361183241434822606848.0	56668397794435742564.352	25
74	4722366482869645213696.0	113336795588871485128.704	25
75	9444732965739290427392.0	226673591177742970257.408	25
76	18889465931478580854784.0	453347182355485940514.816	25
77	37778931862957161709568.0	906694364710971881029.632	25
78	75557863725914323419136.0	1813388729421943762059.264	25
79	151115727451828646838272.0	3626777458843887524118.528	25
80	302231454903657293676544.0	7253554917687775048237.056	25
81	604462909807314587353088.0	14507109835375550096474.112	25
82	1208925819614629174706176.0	29014219670751100192948.224	25
83	2417851639229258349412352.0	58028439341502200385896.448	25
84	4835703278458516698824704.0	116056878683004400771792.896	25
85	9671406556917033397649408.0	232113757366008801543585.792	25
86	19342813113834066795298816.0	464227514732017603087171.584	25
87	38685626227668133590597632.0	928455029464035206174343.168	25
88	77371252455336267181195264.0	1856910058928070412348686.336	25
89	154742504910672534362390528.0	3713820117856140824697372.672	25
90	309485009821345068724781056.0	7427640235712281649394745.344	25
91	618970019642690137449562112.0	14855280471424563298789490.688	25
92	1237940039285380274899124224.0	29710560942849126597578981.376	25
93	2475880078570760549798248448.0	59421121885698253195157962.752	25
94	4951760157141521099596496896.0	118842243771396506390315925.504	25
95	9903520314283042199192993792.0	237684487542793012780631851.008	25
96	19807040628566084398385987584.0	475368975085586025561263702.016	25
97	39614081257132168796771975168.0	950737950171172051122527404.032	25
98	79228162514264337593543950336.0	1901475900342344102245054808.064	25
99	158456325028528675187087900672.0	3802951800684688204490109616.128	25
100	316912650057057350374175801344.0	7605903601369376408980219232.256	25

Figure 1. Viscosity-concentration curves for polyethylene glycol (PEG) solutions at 25°C. The plot shows a linear relationship between the logarithm of viscosity and the logarithm of concentration, indicating a power-law dependence. The data points correspond to the values in the table above.

