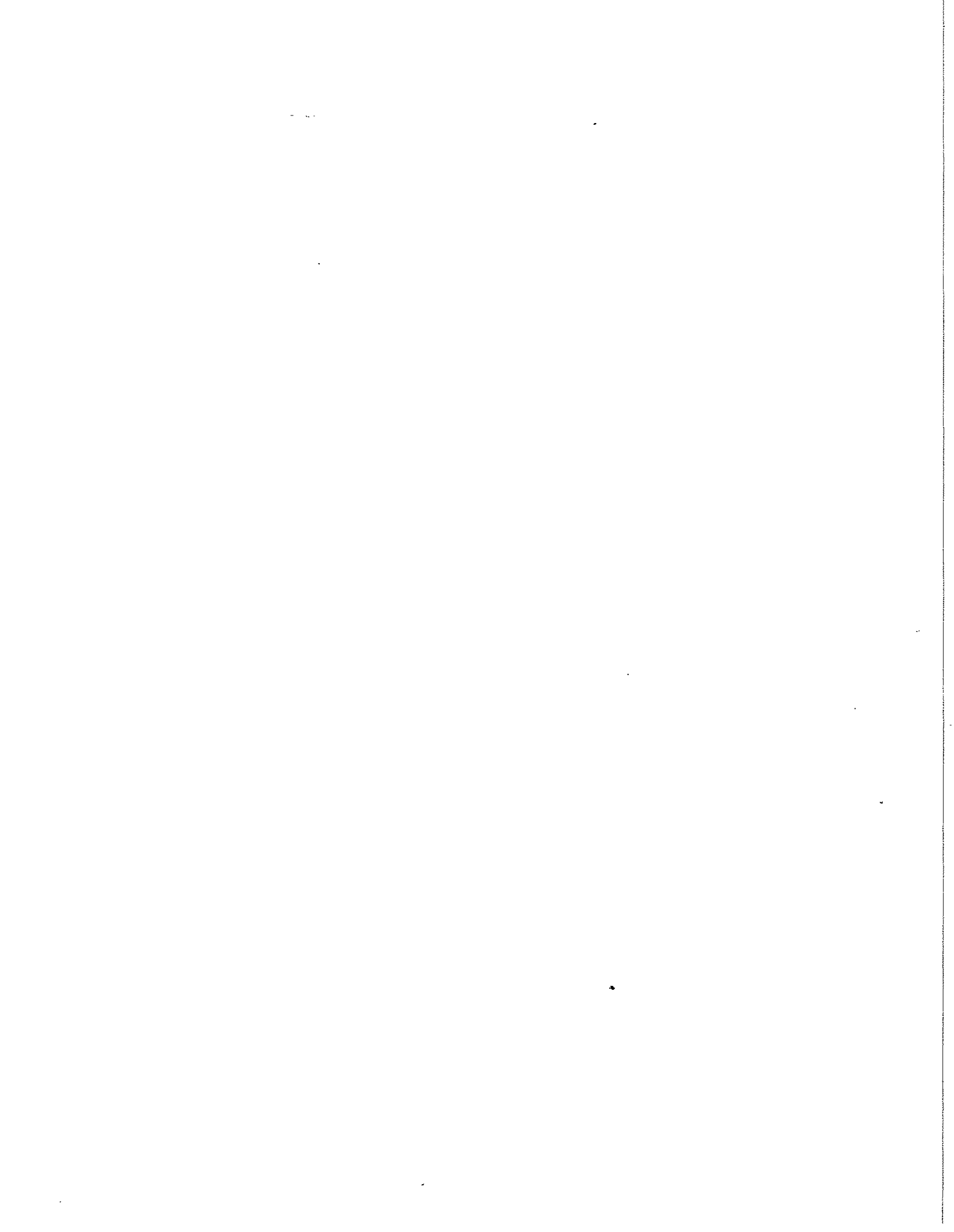


FACULTY OUTPUT AND SALARY COSTS
OF STATE-RELATED AND STATE-OWNED
COLLEGES AND UNIVERSITIES

ANALYSIS OF 1979-80 DATA
REPORTED UNDER 1979 APPROPRIATION ACTS
AND PUBLIC SCHOOL CODE

Staff Report of the
Joint State Government Commission of the
General Assembly of the Commonwealth of Pennsylvania
Harrisburg, Pennsylvania
February 1981



FOREWORD

Escalating costs, declining enrollment trends and changes in employment opportunities for college graduates present the State-owned and State-related colleges and universities with immediate challenges in meeting student demand and achieving cost efficiency. Tough administrative decisions are necessary at many schools to effect changes in such areas as course concentration, class size, faculty hiring and salary policy and tuition.

In this report, insight into the success of administrative and Commonwealth budgetary policies is provided through uniform measurement of faculty output, workload, salary cost and appropriations. Review of trends and comparisons among schools and with national averages sheds light on areas where change or retrenchment is in order.

While the summary, pp. 1-5, enables a quick review of major findings, the appendix includes detailed data for several years to facilitate in-depth historical study. The thorough analysis of salaries by rank in Chapter II incorporates comprehensive national data.

employment in a related field. Despite the bleak outlook, in 1978-79 Pennsylvania State-owned schools produced 37 percent of their undergraduate degrees and 65 percent of their graduate degrees in education. The comparable percentages for all colleges and universities nationwide are 15 and 37 percent, respectively. (p. 24)

3. With average workweeks exceeding 50 hours, ranked faculty at the State-owned schools report spending an average of 12.9 hours in undergraduate equivalent classroom contact--an increase of about one-half hour from 1978-79. Classroom contact hours range from an average of 10.2 hours at California to 17.6 at Slippery Rock. The average faculty member at the State-related universities continues to spend slightly more than 11 undergraduate equivalent hours in classroom contact. The State-related range is from 11.1 average hours at Pittsburgh to 12.1 at Lincoln. (table 6)

4. Although the overall lower-division average class size of 27 for academic year 1979-80 is slightly greater than for 1978-79, approximately one-third of the schools have reported consistent decreases in average class size at this level since 1976-77. (table 7)

5. The average salary of full-time equivalent ranked faculty increased 5.7 percent from academic year 1978-79 to 1979-80 (table 9). Ten of the 18 schools report greater than average increases, ranging from 5.8 percent to 12.5 percent.

6. Because of higher percentages of faculty in the top academic ranks, the average academic year instructional salaries at all State-owned institutions exceed the averages at the State-related universities for 1979-80 (table 10). Faculty at State-owned schools with the ranks of professor or associate professor range from 67 percent of total ranked faculty at Mansfield to 86 percent at California. At the State-related universities, the range is from 44 percent at Lincoln to 57 percent at Pittsburgh. Tenured faculty at State-owned schools range from 59.8 percent of total faculty at Cheyney and 82.5 percent at Clarion at the low end of the scale to more than 95 percent at California and West Chester. In contrast, at the State-related universities, tenured faculty represent about 64 percent of the total. (table 12)

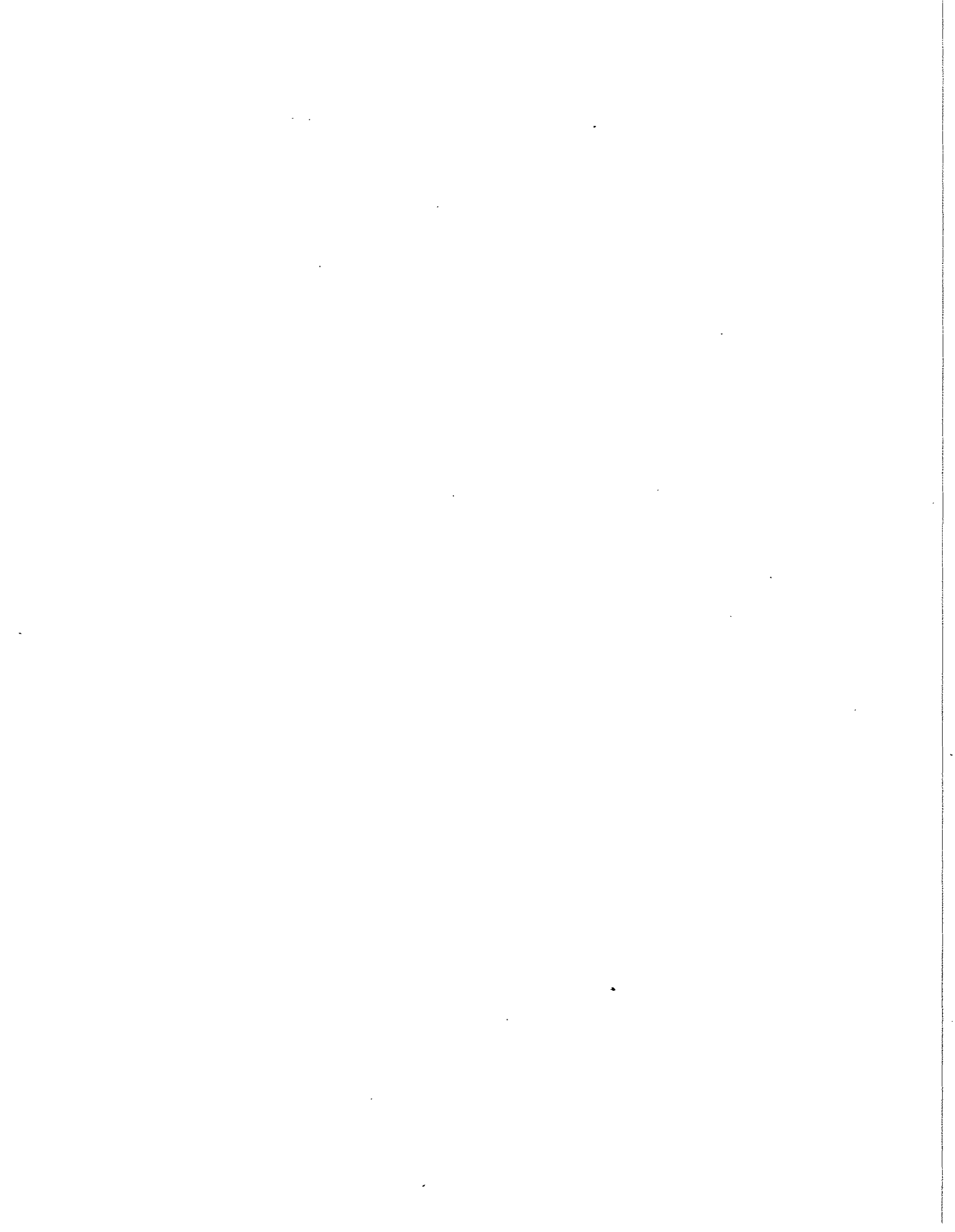
7. The average salary for each rank at each State-owned institution, with the exception of Indiana professors and Bloomsburg instructors, is about 10 percent above the rank average at comparable schools nationwide (table 12 and p. 47). Main campus professors at Penn State and Pittsburgh and

professors at Temple are paid on the average \$2,100 to \$2,800 more than professors at comparable schools nationwide. Faculty salaries at branch campuses are considerably lower.

8. The instructional faculty salary cost per undergraduate equivalent student credit hour ranges from \$35 at Lincoln and \$36 at Penn State to \$57 at California (table 13). The variation in salary cost per student credit hour is a function of average class size, average contact hours, and faculty salary levels, with average class size being the most significant factor.
9. Commonwealth appropriations to the State-owned and State-related institutions, which are budgeted for a 5.5 percent overall increase in 1981-82, have not kept pace with rising prices. From 1977-78 to 1980-81, appropriations per unit of output increased 22.4 percent while the consumer price index increased 38.8 percent. The State-owned institutions, with an aggregate increase of 23.2 percent per unit over the period, fared slightly better than the State-related universities, which received a 21.8 percent increase. (table 15)
10. Relating each institution's appropriation to its student credit-hour output highlights the Commonwealth's budget policy differentiation among the schools. With few exceptions, the highest levels of State support are to State-owned institutions

with the smallest credit-hour production and the highest salary cost per credit hour (p. 62). It is encouraging, however, that for both 1980-81 and 1981-82 below average appropriation increases are budgeted for most of the least efficient schools. (tables 15 and 16)

11. Tuition charges, which are approximately uniform among State-owned schools, are not otherwise consistent among different students. For 1979-80 at State-owned schools resident undergraduates paid an estimated 30 percent of total instructional cost (allocated appropriation plus tuition) and non-residents about 54 percent. At the State-related universities, resident undergraduates paid between 45 and 50 percent of total costs, while nonresidents paid about 83 percent at Temple and approximately full cost at Penn State and Pittsburgh. Graduate students pay a smaller portion of total costs than undergraduates at all schools. The greatest subsidization is at State-owned schools where both resident and nonresident graduate students pay only 19 percent of total cost. Nonresident graduate students at State-related universities pay an estimated 60 to 75 percent of total cost. Over the past four years, resident undergraduate tuition charges have increased about 26 percent at the State-owned schools and from 30 to 43 percent at the State-related universities. (chart 1 and appendix table 12A)



I. FACULTY OUTPUT

GENERAL TRENDS

As noted in the March 1980 Joint State Government Commission staff report on faculty output and salary costs, the demand for higher education in Pennsylvania intensified until the early 1970s. The enrollment decline which began in the middle of the decade is expected to continue through the 1980s.

A review of the student credit-hour production of the State-related and State-owned schools--a more exact measure of output than total enrollment--points up this trend (appendix table 1A, pp. 70-71). The peak years of student credit-hour production for the three large State-related institutions were 1976-77 at Penn State and Temple and 1975-76 at the University of Pittsburgh. Production peaked at the majority of the State-owned institutions in 1977-78.

Pennsylvania Department of Education projections of secondary enrollment, high school graduates and fall enrollment in Pennsylvania institutions of higher education further document this decline (appendix tables 2A-4A, pp. 72-74). It is instructive to note

that the department has decreased the estimated numbers of secondary students and high school graduates for respective years from previous projections.¹ The department, however, has revised slightly upward its projections of annual student enrollment at the State-owned and State-related schools. This change may result from the department's increasing its projections of the percentage of graduates continuing formal studies² and of the number of "nontraditional" students (those not in the 18-24 age bracket). It is difficult to ascertain the exact numbers of students anticipated because part-time students--expected to represent an increasing percentage of total enrollment in future years--are not presented in full-time student equivalent form.

Despite these revisions, the department continues to predict a 14 percent overall decline in total enrollment of full-time and part-time students for the State-related and State-owned schools from fall 1979 to fall 1989. This reflects a 24 percent decline in the number of high school graduates during the 10-year period, coupled with the net migration of students out of Pennsylvania (according to latest available NCES statistics, fall 1975). This out-migration has been increasing since the middle of the 1960s. Prior to that time, there was a slight net migration into Pennsylvania.³

1. See appendix tables 2A-4A, pp. 56-58, in March 1980 Joint State Government Commission staff report.

2. Compare appendix table 3A, p. 73, with table 3A in March 1980 report.

3. See appendix table 5A, p. 75, and National Center for Education Statistics, Digest of Education Statistics 1968 (U.S. Government Printing Office: Washington, D.C., November 1968), p. 71.

In terms of degrees produced, department projections indicate that the number of bachelor's and master's degrees awarded by the State-related and State-owned schools will decrease by 14 percent--or 5,100 degrees--from 1978-79 to 1989-90. The number of doctor's degrees are predicted to decline by only 85 in this time period.⁴

STUDENT CREDIT-HOUR AND DEGREE PRODUCTION
BY INSTITUTION, LEVEL, TERM AND AREA OF STUDY

Total Institutional Production

Appendix table 1A presents the student credit-hour and degree production of each institution from the first year in which reporting was required.

Student Credit Hours--Review of the change in student credit-hour production from 1978-79 to 1979-80 at the State-related schools (appendix table 1A) indicates slight increases for Penn State and Pittsburgh. Lincoln's output for 1979-80 is at an all-time high, with an increase of 21 percent over the previous year, while Temple's has declined steadily since 1976-77.

Total production at the State-owned colleges and university increased slightly from 1978-79 to 1979-80. This partially offsets the decrease in 1978-79 from 1977-78, the first full year of data

4. Pennsylvania Department of Education, Projections: Selected Education Statistics for Pennsylvania to 1989-90, pp. 18-19.

collection for the State-owned institutions. Individually, some schools show consistent increases while others consistent declines, as appendix table 1A indicates. Clarion and Indiana each year report an increasing number of student credit hours. In addition, Bloomsburg and Lock Haven, with a decline in student credit hours from 1977-78 to 1978-79, report a higher number for 1979-80 than in any previous reporting year. California and Edinboro show steadily declining production since 1977-78.

It should be noted that for 1979-80 the institutions, for the first time, report student credit hours generated for remedial work at the undergraduate level. This can be expected to account for at least a portion of the increasing production, especially at Clarion, East Stroudsburg, Kutztown, Lock Haven and West Chester, where increases only in lower-division student credit hours are reported.

Student Body and Degrees--Table 1 converts the student credit-hour production for each of the years for which data for all schools are available (as shown in appendix table 1A) to full-time equivalent students. Thirty undergraduate student credit hours or 24 graduate student credit hours constitute one "full-time equivalent student."

Table 1 shows an increase of 1,000 full-time equivalent students at the State-related schools and an increase of 700 at the State-owned institutions from 1978-79 to 1979-80. Proportionately, the largest percentage increases are at Lincoln with a 22 percent

Table 1

FULL-TIME EQUIVALENT STUDENTS¹ AND
BACHELOR'S, MASTER'S AND FIRST PROFESSIONAL DEGREES
1977-78 to 1979-80

Year ²	Students	Degrees	Students	Degrees	Students	Degrees	Students	Degrees	Students	Degrees
	Penn State		Pittsburgh		Temple		Lincoln		Total State-related	
1977-78	54,500	9,680	28,500	6,010	28,200	5,470	1,200	183	112,000	21,300
1978-79	53,800	9,960	27,800	5,740	27,000	5,350	1,160	215	110,000	21,300
1979-80	54,600	9,570	28,300	5,660	26,600	5,340	1,410	191	111,000	20,800
	Bloomsburg		California		Cheyney		Clarion		East Stroudsburg	
1977-78	6,300	1,260	4,470	958	2,750	428	5,050	1,050	4,280	838
1978-79	6,190	1,370	4,210	926	2,360	359	5,210	1,070	4,050	770
1979-80	6,370	1,310	4,070	865	2,370	348	5,300	1,000	4,100	766
	Edinboro ³		Indiana University ³		Kutztown		Lock Haven		Mansfield	
1977-78	5,760	1,250	11,900	2,510	4,590	921	2,350	460	2,620	562
1978-79	5,480	1,180	12,300	2,590	4,510	919	2,250	390	2,400	548
1979-80	5,360	1,070	12,400	2,610	4,520	895	2,380	395	2,540	497
	Millersville		Shippensburg		Slippery Rock		West Chester		Total State-owned	
1977-78	5,650	1,180	5,490	1,320	5,820	1,210	8,240	1,560 ^a	75,200	15,500
1978-79	5,520	1,190	5,400	1,270	5,500	1,040	8,090	1,840	73,500	15,500
1979-80	5,600	1,070	5,430	1,390	5,530	1,150	8,190	1,840	74,200	15,200
	Grand total									
	Year		Students		Degrees					
	1977-78		188,000		36,800					
	1978-79		183,000		36,800					
	1979-80		185,000		36,000					

1. Full-time equivalent students calculated by dividing undergraduate student credit hours by 30 and graduate student credit hours by 24.

2. Data for each year represent the sum of student credit-hour production for the summer term preceding the academic year plus the academic year student credit-hour production. This represents a change from previous reporting of the summer term subsequent to the academic year.

3. Edinboro student credit-hour data for fiscal years 1977-78 and 1978-79 and Indiana University student credit-hour data for fiscal year 1979-80 from "State College and University Budgeting System Common Cost Accounting Reports."

a. Underestimate.

SOURCE: Student credit-hour and degree reports provided by the individual institutions, 1978, 1979 and 1980.

increase (or 250 full-time equivalent students) and at Lock Haven and Mansfield each with 6 percent increases (or 130 and 140 full-time equivalent students) over 1978-79. Despite these increases, the total number of full-time equivalent students at all institutions decreased by approximately 3,000 from 1977-78 to 1979-80.

While overall degree production was maintained from 1977-78 to 1978-79 at the bachelor's, master's and first professional levels, the decline in student credit-hour production is reflected in 500 fewer degrees awarded during 1979-80 at the State-related schools and 300 fewer at the State-owned schools. Nevertheless, Indiana, Lock Haven, Shippensburg and Slippery Rock each awarded more degrees than in 1978-79.

Appendix table 1A indicates that Penn State and Pittsburgh awarded a larger number of doctoral degrees in 1972-73 than in any other reporting year. Temple's doctoral degree production has declined since 1977-78, reflecting diminishing doctoral level student credit-hour production. It is interesting to note that the ratio of doctoral degrees to full-time equivalent students (using 24 student credit hours to equal one student) at the State-related schools varies widely among schools, as may be observed from the following text table.

<u>Institution</u>	<u>Number of FTE doctoral students</u>			<u>Number of degrees</u>		
	<u>1977-78</u>	<u>1978-79</u>	<u>1979-80</u>	<u>1977-78</u>	<u>1978-79</u>	<u>1979-80</u>
Penn State	2,458	2,324	2,349	345	383	367
Pittsburgh	1,199	1,332	1,388	389	362	374
Temple	568	379	296	272	237	246

These data suggest that at Penn State course work is completed but degrees not awarded or that master's level work of a student registered as a doctoral candidate is designated as "doctoral" work. Conversely, at Temple master's level student credit hours comprise a sizable portion of the course requirements for degrees awarded.

Credit-Hour Production by Level

Table 2 provides a comparison of change in credit-hour production by level each year from 1977-78 to 1979-80 and over the three-year period.

Undergraduate--At the undergraduate level, the increase in student credit hours from 1978-79 to 1979-80 is in contrast to the even greater decline in production which occurred from 1977-78 to 1978-79. Overall, the undergraduate student credit-hour output for the three-year period declined at the State-related schools by 31,100 student credit hours, or 1,037 full-time equivalent students, and at the State-owned schools by 16,000 student credit hours, or 533 full-time equivalent students.

This overall slight decrease in undergraduate student credit hours over the three-year period represents some large as well as minimal individual changes. In observing changes in the magnitude of 5 percent or more over the three-year period, Clarion increased production at this level by 6.3 percent, while Slippery Rock, Edinboro, Temple, California and Cheyney showed decreases ranging from 5.1 percent at Slippery Rock to 12.3 percent at Cheyney.

Table 2
CHANGE IN STUDENT CREDIT-HOUR PRODUCTION¹
BY LEVEL OF INSTRUCTION
1977-78 to 1979-80
(000's)

Institution	Undergraduate			Master's and first professional		
	1977-78	1978-79	Total	1977-78	1978-79	Total
	to	to	to	to	to	to
	1978-79	1979-80	1979-80	1978-79	1979-80	1979-80
State-related universities						
Penn State	-9.8	+20.4	+10.6	-5.1	+5	-4.6
Pittsburgh	-9.4	+3.9	-5.5	-12.7	+6.3	-6.4
Temple	-40.2	+2.3	-37.9	+6.9	-9.3	-2.4
Lincoln	-3.2	+4.9	+1.7	+1.5	+2.2	+3.7
Subtotal	-62.6	+31.5	-31.1	-9.4	-.3	-9.7
State-owned colleges						
Bloomsburg	-1.4	+3.6	+2.2	-1.5	+1.3	-.2
California	-6.5	-3.5	-10.0	-1.1	-.6	-1.7
Cheyney	-10.3	+7	-9.6	-1.0	-.3	-1.3
Clarion	+5.4	+3.6	+9.0	-.4	-.8	-1.2
East Stroudsburg	-6.0	+2.0	-4.0	-.7	-.4	-1.1
Edinboro ²	-7.0	-3.0	-10.0	-1.0	-.7	-1.7
Indiana University ²	+11.7	+4.0	+15.7	-.2 ^a	+7 ^a	+5 ^a
Kutztown	-2.2	+1.2	-1.0	-1	-.7	-.8
Lock Haven	-3.0	+4.0	+1.0	n.a.	n.a.	n.a.
Mansfield	-6.0	+2.8	-3.2	-.4	+1.1	+7
Millersville	-2.1	+2.8	+7	-1.3	-.4	-1.7
Shippensburg	-1.8	+2.9	+1.1	-.6	-1.6	-2.2
Slippery Rock	-8.3	-. ^b	-8.3	-.9	+8	-.1
West Chester	-3.0	+3.4	+4	-1.1	-.4	-1.5
Subtotal	-40.5	+24.5	-16.0	-10.3	-2.0	-12.3
Total	-103.1	+56.0	-47.1	-19.7	-2.3	-22.0

1. Data for each year include the summer term plus subsequent academic year.
2. Edinboro student credit-hour data for fiscal years 1977-78 and 1978-79 and Indiana University student credit-hour data for fiscal year 1979-80 from "State College and University Budgeting System Common Cost Accounting Reports."
 - a. Includes doctoral student credit hours.
 - b. Rounds to less than .1.
 - n.a. Not applicable.

SOURCE: Student credit-hour reports provided by the individual institutions, 1978, 1979 and 1980.

Graduate--At the master's and first professional graduate level for the three-year period, table 2 indicates a consistent decline in total output, amounting to 22,000 student credit hours, or 917 full-time equivalent students--proportionally greater than the undergraduate level decline.

Indiana and Mansfield were the only State-owned schools to report net gains in graduate student credit hours from 1978-79 to 1979-80, which more than compensated for decreases over the previous time period. Lincoln's master's level production increased in both time periods. In contrast, Cheyney, Clarion, California, Edinboro, Shippensburg, East Stroudsburg and Kutztown experienced sizable decreases in graduate production from 1977-78 to 1979-80, ranging from 39 percent at Cheyney to 11.5 percent at Kutztown.

At the doctoral level, as the following text table indicates, Pittsburgh reports an increasing number of student credit hours since 1977-78, while Temple's have declined by 6,500 or 48 percent. Penn State's doctoral student credit-hour production peaked in 1977-78. Temple's doctoral production has declined since the first year (1976-77) in which it was separately reported.

<u>Institution</u>	Change in doctoral student credit-hour production (000's)		
	1977-78	1978-79	Total
	to 1978-79	to 1979-80	to 1979-80
Penn State	-3.2	+ .6	-2.6
Pittsburgh	+3.2	+1.3	+4.5
Temple	-4.5	-2.0	-6.5
Total	-4.5	-.1	-4.6

Summer Term Credit-Hour Production

As shown in table 3, total summer student credit-hour output in 1979 was slightly greater than in summer 1978--an increase of 3,700 credit hours. However, summer 1977 production exceeded that of 1979 by nearly 30,000 credit hours. (These totals exclude data for Edinboro and Indiana.) Data reported by the State-related schools since 1972-73 indicate that the greatest summer production occurred in 1975 at Penn State and Pittsburgh and in 1976 at Temple. At the majority of State-owned schools, credit hours peaked during the first summer for which data were collected--summer 1977. Overall, summer 1979 output equals 6 percent of the total for the academic year. At Pittsburgh, Lincoln, Bloomsburg, California, East Stroudsburg, Millersville and Shippensburg summer production represents more than 10 percent of the total for 1979-80.

Undergraduate--Summer undergraduate production has declined, as table 3 indicates, by 20,500 student credit hours, or 6.5 percent, since summer 1977. Lock Haven, Kutztown, Pittsburgh, Slippery Rock, Millersville and Temple experienced declining summer undergraduate output each year in this time period, in magnitudes ranging from 26.1 percent at Lock Haven to 9.6 percent at Temple. In contrast, Lincoln, Bloomsburg and West Chester have increased summer output each year since 1977, ranging from 66.7 percent at Lincoln to 6 percent at West Chester. Lincoln began offering summer instruction in summer 1976.

Table 3
SUMMER TERM STUDENT CREDIT-HOUR PRODUCTION
BY LEVEL OF INSTRUCTION
SUMMER 1977-SUMMER 1979
(000's)

Institution	Undergraduate				Master's and first professional			
	Summer			Percentage change 1977-79	Summer			Percentage change 1977-79
	1977	1978	1979		1977	1978	1979	
State-related universities								
Penn State	70.5	77.0	69.5	-1.4%	11.7	7.0	7.6	-35.0%
Pittsburgh	79.7	68.6	65.2	-18.2	36.4	31.5	39.0	+7.1
Temple	52.2	47.5	47.2	-9.6	25.6	23.7	26.2	+2.3
Lincoln	3.0	3.2	5.0	+66.7	n.a.	.3	.4	+33.3 ^a
Subtotal	205.4	196.3	186.9	-9.0	73.7	62.5	73.2	-1.2 ^b
State-owned colleges								
Bloomsburg	11.8	12.3	13.3	+12.7	6.2	5.1	5.6	-9.7
California	11.6	9.4	9.4	-19.0	3.9	3.3	2.9	-25.6
Cheyney	4.5	2.8	3.3	-26.7	1.2	.5	.6	-50.0
Clarion	5.7	9.1	8.5	+49.1	2.1	2.4	1.8	-14.3
East Stroudsburg	9.7	8.3	9.6	-1.0	5.7	5.0	4.2	-26.3
Edinboro	-- ^c	-- ^c	9.8	n.a.	-- ^c	-- ^c	3.9	n.a.
Indiana University	25.1	29.5	-- ^c	n.a.	6.9 ^d	7.8 ^d	-- ^c	n.a.
Kutztown	6.3	5.3	5.0	-20.6	3.3	3.1	2.5	-24.2
Lock Haven	4.6	3.8	3.4	-26.1	n.a.	n.a.	n.a.	n.a.
Mansfield	4.3	3.4	4.0	-7.0	1.5	1.1	1.5	0.0
Millersville	14.5	13.3	12.7	-12.4	9.1	8.5	8.7	-4.4
Shippensburg	8.4	8.2	11.0	+31.0	6.6	6.3	5.7	-13.6
Slippery Rock	10.9	9.2	9.1	-16.5	3.5	2.9	2.9	-17.1
West Chester	16.6	16.9	17.6	+6.0	8.6	7.2	6.5	-24.4
Subtotal ¹	108.9	102.0	106.9	-1.8	51.7	45.4	42.9	-17.0
Total ¹	314.3	298.3	293.8	-6.5	125.4	107.9	116.1	-7.4 ^b

1. Does not include Edinboro or Indiana University.
- a. From summer 1978.
- b. Does not include Lincoln.
- c. Unavailable.
- d. Includes doctoral student credit hours.
- n.a. Not applicable.

SOURCE: Student credit-hour production reports provided by the individual institutions, 1978, 1979 and 1980.

Graduate, Master's and First Professional--While

production at this level declined overall from summer 1977 to summer 1979, an increase is shown for summer 1979 over summer 1978, partially compensating for the 17,500 credit-hour decline from summer 1977. As table 3 indicates, East Stroudsburg, California, West Chester, Kutztown, Slippery Rock and Shippensburg experienced consistently declining graduate production over the three-year period, ranging from 26.3 percent at East Stroudsburg to 13.6 percent at Shippensburg. None of the State-owned schools, excluding Indiana and Edinboro for which data were unavailable, have a greater graduate student credit-hour production in summer 1979 than in summer 1977. Each of the State-related schools, except Penn State, experienced a net increase in student credit hours at this level.

Doctoral--Overall, summer output at the doctoral level declined from summer 1977 to summer 1979 due to consistent annual credit hour decreases at Penn State and Temple, totaling 13.8 percent and 57.9 percent, respectively, for the three years. Only Pittsburgh's doctoral level summer credit hours increased (by 17.9 percent) from 1977 to 1979.

<u>Institution</u>	Doctoral student credit-hour production (000's)			
	Summer			Percentage change 1977-79
	1977	1978	1979	
Penn State	16.0	14.0	13.8	-13.8
Pittsburgh	7.8	7.9	9.2	+17.9
Temple	1.9	1.0	.8	-57.9
Total	25.7	22.9	23.8	-7.4

Credit-Hour Production in Individual Instruction

Table 4 presents by level the number of individual instruction student credit hours reported by each school for 1979-80. These hours include individual student classes for research, internship and courses by appointment.

At the lower-division undergraduate level of instruction, on the average, only five student credit hours of every thousand hours produced are reported as individual instruction; several schools average no more than one per thousand hours. At the upper-division undergraduate level, the rate per thousand is 44 hours overall and is twice as great for the State-related schools (54 hours) as for the State-owned schools (23 hours).

At the master's level, the overall average of 87 hours is twice the upper-division average, with the State-related institutions' rate of 113 hours per thousand--four times the rate of the State-owned institutions. Pittsburgh, at both the upper-division and master's level, has the greatest concentration of individual hours.

Understandably, the doctoral level has the greatest concentration of individual instruction. The following text table shows that nearly two-thirds of the total doctoral student credit hours produced for 1979-80 represent individual instruction credit hours.⁵

5. Any individual instruction doctoral level student credit-hour production at Indiana is reported in the master's level totals.

Table 4

INDIVIDUAL INSTRUCTION STUDENT CREDIT HOURS
PER THOUSAND STUDENT CREDIT HOURS PRODUCED
BY LEVEL OF INSTRUCTION
1979-80

Institution	Undergraduate		Graduate Master's
	Lower- division	Upper- division	
State-related universities			
Penn State	3	57	96
Pittsburgh	5	65	155
Temple	12	39	74
Lincoln	0	0	0
Subtotal ¹	5	54	113
State-owned colleges			
Bloomsburg	-- ^a	8	9
California	0	0	0
Cheyney	1	8	25
Clarion	1	17	30
East Stroudsburg	0	34	34
Edinboro	2	9	7
Indiana University	0	27 ^b	29 ^b
Kutztown	15	18	26
Lock Haven	2	19	n.a.
Mansfield	-- ^a	2	4
Millersville	1	11	13
Shippensburg	2	44	39
Slippery Rock	-- ^a	10	14
West Chester	13	63	66
Subtotal ¹	4	23	28
Total ¹	5	44	90

1. For those institutions with individual instruction student credit hours at the respective levels of instruction.

a. Rounds to less than one individual instruction student credit hour per thousand student credit hours.

b. Estimate.

n.a. Not applicable.

SOURCE: Student credit-hour reports provided by the individual institutions, 1980.

<u>Institution</u>	<u>Doctoral level individual instruction student credit hours per 1,000 produced 1979-80</u>
Penn State	752
Pittsburgh	557
Temple	463
	<hr/>
Total	664

Production by Area of Study

Analysis of student credit-hour and degree production by area of study calls attention to differences in concentration within and among the schools.

For 1979-80, the data reported by the State-related and State-owned schools are combined into what the National Center for Education Statistics terms HEGIS classifications--a taxonomy of major areas of study. While the large universities have a greater diversity of study areas than the State-owned schools, all offer programs in biological and physical sciences, letters, education, foreign languages, mathematics, psychology, fine and applied arts and social sciences. In addition, some institutions offer career-oriented areas of study such as allied health, communications, business, library science, home economics, engineering, agriculture, architecture and law.

Student Credit Hours--Appendix table 6A, pp. 76-77, presents 1979-80 departmental data categorized into the various HEGIS classifications.⁶ The table indicates that at the undergraduate level of instruction, 7 of the 18 schools have the greatest student credit-hour concentration in the area of social sciences, while 5 schools produce more undergraduate student credit hours in education than in any other area of study. Three schools report their greatest output in letters and three, in business and management.

Less variance in concentration exists at the graduate level. All of the State-owned schools with graduate-level studies along with Penn State report their largest student credit-hour production in education. Pittsburgh and Temple report their largest graduate output in the health professions. Graduate output is quite small in a number of areas. In fact, with the exceptions of Indiana, Shippensburg and West Chester, no State-owned school reports over 1,000 student credit hours in two or more areas other than education.

Degrees--Appendix table 7A, pp. 78-79, presents undergraduate and graduate degrees by HEGIS classification, as

6. In most cases, these production figures approximate the total student credit-hour output in the various areas that are submitted in other statistical reports by the institutions. However, there may be some misallocation of student credit hours in overlapping areas such as mathematics and computer and information science, letters and communication, business and management and social sciences.

submitted to the Department of Education by the individual schools. (This 1978-79 degree information represents the latest data available from the department.)

Of the State-owned schools, only Bloomsburg, Clarion and Shippensburg produce a greater number of undergraduate degrees in a field other than education. In each case, the greatest degree production is in business and management. At the other extreme-- except for Pittsburgh, Temple, Edinboro, Kutztown and Millersville-- no school produces 10 percent or more of its undergraduate degrees in the combined areas of fine arts, foreign languages and letters.

At each of the State-related and State-owned schools except Lincoln, the greatest number of graduate degrees is granted in education, with 87 percent of degrees at Slippery Rock in that area. Of the State-owned schools, only Clarion produces less than half of its graduate degrees in education.

The following text table presents a percentage distribution of degrees awarded in 1977-78 nationwide and at Pennsylvania's State-related and State-owned schools.⁷ The State-related distribution more closely approximates the nationwide distribution. The area where the greatest variance at the graduate and undergraduate levels exists is in education. At the undergraduate level, the State-owned concentration in education degrees is almost 2.5 times the nationwide

7. Calculated from data in National Center for Education Statistics, Digest of Education Statistics 1980 (U.S. Government Printing Office: Washington, D.C., May 1980), pp. 120-124.

percentage and 3 times that of the State-related schools. The State-related schools produce proportionally more science degrees at the undergraduate level and more business health career degrees at the master's and doctoral levels than the nationwide distributions.

Area of study	Percentage of degrees*					
	Bachelor's			Master's and doctoral		
	Nationwide	State-	State-	Nationwide	State-	State-
		1977-78	related		owned	related
	1978-79		1977-78	1978-79		
Agriculture)						
Architecture)						
Biology)	19	28	7	15	14	7
Engineering)						
Mathematics)						
Physical science)						
Business)						
Communications)						
Computer science)	30	30	25	24	38	11
Health professions)						
Home economics)						
Law)						
Library science)						
Education)	15	11	37	37	29	65
Fine arts)						
Foreign languages)	11	8	8	7	5	6
Letters)						
Area studies)						
Interdisciplinary)						
studies)						
Psychology)	26	23	23	16	14	11
Public affairs)						
and services)						
Social science)						
Total**	100	100	100	100	100	100

*Excluding military science and theology degrees.

**Because of rounding, totals do not always equal 100.

The system-wide average of 37 percent of undergraduate degrees in education obscures the wide variations among the State-owned schools. At five (California, East Stroudsburg, Lock Haven, Millersville and Slippery Rock) more than 46 percent of total degrees were granted in education while at two--Indiana and Shippensburg-- education degrees represent less than 25 percent of total. Efforts to reduce the disproportionate production of degrees in education should be intensified. As noted in the Governor's Executive Budget, 1981-82, occupational projections indicate a continued large imbalance between anticipated degrees and job openings in the field of education:

The oversupply is caused primarily by the dramatic increase in the number of teachers prepared, which stabilized in the late sixties and early seventies, coupled with the start of a decline in elementary and secondary enrollments during the same period. The situation will not improve in the foreseeable future.

Basic education enrollment in Pennsylvania is projected to drop by over 800,000 or 29 percent between 1969, the peak year, and 1985 substantially reducing the need for new teachers.

Responding to this oversupply problem, fewer students are seeking to become teachers, and many institutions are making internal program shifts to curricular areas of manpower need such as business and the health sciences and professions. . . . Overall enrollments in education are projected to decrease by 8.1 percent between 1979-80 and 1985-86 with the most substantial decrease occurring in the State-owned and State-related colleges and universities. . . . Bachelor's degrees in education conferred at the State-owned colleges and university

are anticipated to be 14 percent less in 1985-86 than 1979-80 at the same time they expect to confer 10 percent fewer graduate degrees. (pp. 310-312)

The budget document points out that less than 60 percent of 1979 Pennsylvania graduates with bachelor's degrees in education found employment in a related field.

II. FACULTY WORKLOAD AND SALARY COST

WORKLOAD

Previous Commission staff reports have analyzed average student credit-hour output per full-time faculty member as well as average hours per week spent in instructional and noninstructional activities, including administration, research and public service. To refine analysis of faculty workload, the measure of "full-time equivalent" faculty member has been utilized. In this report, the measure for the first time takes into account full-time and part-time faculty employment and breaks each full-time equivalent unit into an "instructional" full-time equivalency and a "noninstructional" full-time equivalency.¹ In this chapter, faculty members are

1. For the State-owned schools, equivalents were established based on individual faculty contract contact hours and work-release time in noninstructional functions. For the State-related schools, a measure of 12 undergraduate equivalent contact hours was applied to the individual full-time faculty contact and thesis/dissertation and independent study portion of the workweek to determine the instructional FTE. The noninstructional FTE is the complement of the full-time head count. Instructional and noninstructional equivalents for part-time faculty were added as provided by the institutions. Penn State's measure of FTE's in resident instruction and other functions is based on source of individual faculty salary funds. Total full-time equivalent faculty is the sum of instructional plus noninstructional full-time equivalent faculty.

related to contact hours, class size, student credit-hour production and salary, with particular attention to ranked faculty.

Faculty Count

For purposes of a comparison with last year's data, table 5 presents a full-time equivalent faculty count (instructional and noninstructional) for 1978-79 and 1979-80 and the percentage change. This is shown in comparison to the percentage change in full-time equivalent students (calculated from table 1) over the same time period.

Overall, the State-related schools report a decrease in total full-time equivalent faculty and a slight increase in student credit-hour production, while the State-owned schools show a slight increase in faculty and students. Increases in full-time equivalent faculty took place only at institutions which experienced increases in full-time equivalent student enrollment. In addition, at half of the State-owned schools and at all State-related schools, except Temple, full-time equivalent faculty declined from 1978-79 to 1979-80, even though the full-time equivalent student body increased.

Lincoln, Pittsburgh, Mansfield, California and Edinboro show the largest percentage decreases in faculty from the previous year, ranging from 10.91 percent at Lincoln to 3.50 percent at Edinboro, as table 5 indicates. In addition, Penn State, Pittsburgh, Temple, East Stroudsburg, Kutztown, Mansfield and Millersville report a decreasing faculty size from 1977-78 to 1978-79 as well as from 1978-79 to 1979-80.

Table 5

TOTAL FULL-TIME EQUIVALENT FACULTY COUNT AND PERCENTAGE CHANGE IN
FTE FACULTY AND FTE STUDENTS¹
1978-79 to 1979-80

	<u>Penn State</u>	<u>Pittsburgh</u>	<u>Temple</u>	<u>Lincoln</u>	
1978-79	3,609	2,760	2,051	110	
1979-80	3,596	2,635	2,036	98	
Percentage change in FTE faculty	-.36	-4.53	-.73	-10.91	
Percentage change in FTE students	+1.35	+1.61	-1.47	+22.04	
	<u>Bloomsburg</u>	<u>California</u>	<u>Cheyney</u>	<u>Clarion</u>	<u>East Stroudsburg</u>
1978-79	394	369	193	366	279
1979-80	420	355	195	364	271
Percentage change in FTE faculty	+6.60	-3.79	+1.04	-.55	-2.87
Percentage change in FTE students	+2.83	-3.35	+1.34	+1.65	+1.24
	<u>Edinboro</u>	<u>Indiana University</u>	<u>Kutztown</u>	<u>Lock Haven</u>	<u>Mansfield</u>
1978-79	457	714	330	181	210
1979-80	441	758	326	186	202
Percentage change in FTE faculty	-3.50	+6.16	-1.21	+2.76	-3.81
Percentage change in FTE students	-2.33	+1.34	+1.20	+5.82	+5.84
	<u>Millersville</u>	<u>Shippensburg</u>	<u>Slippery Rock</u>	<u>West Chester</u>	
1978-79	383	365	374	575	
1979-80	380	362	368	586	
Percentage change in FTE faculty	-.78	-.82	-1.60	+1.91	
Percentage change in FTE students	+1.39	+1.54	+1.56	+1.22	
		<u>Total State-related</u>		<u>Total State-owned</u>	
1978-79		8,530		5,190	
1979-80		8,365		5,214	
Percentage change in FTE faculty		-1.93		+1.46	
Percentage change in FTE students		+1.94		+1.99	

1. Full-time equivalent students calculated by dividing undergraduate student credit hours by 30 and graduate student credit hours by 24.

SOURCE: Reports provided by the individual institutions, 1979 and 1980.

Faculty Credit-Hour Output

The student credit-hour production per full-time equivalent ranked instructional faculty member for fall term 1979 was calculated to compare production at the various institutions. The average production for each institution is shown in table 6 along with the average workweeks for these ranked faculty members for fall 1978 and fall 1979.

Overall, for fall term 1979 the average FTE ranked instructional faculty member produced undergraduate equivalent student credit hours ranging from 208 at Mansfield to 303 at Clarion and East Stroudsburg. It is interesting to note that there is no exact relationship between the size of FTE instructional faculty and the average equivalent student credit-hour production.

In comparing the number of ranked FTE instructional faculty in the second column of table 6 with the total FTE ranked faculty count, one finds that approximately 90 percent of the State-owned equivalency is in instruction. The remainder involves such service as academic support and administration, departmental administration, research and student services. At the State-related schools, the comparable instructional equivalency is 84 percent. Because 1979-80 is the first year for which instructional and noninstructional equivalencies were reported, a comparison with the previous years' average student credit-hour production is not possible.

Table 6

FULL-TIME RANKED FACULTY
STUDENT CREDIT-HOUR OUTPUT, FALL 1979 AND
AVERAGE WORKWEEK ACTIVITIES, FALL 1978 AND FALL 1979

Institution	Full-time ranked faculty			Average weekly hours spent in specified activities				
	Head count	FTE in instruction	Undergraduate equivalent student credit-hour production ¹ per FTE instructional faculty	Undergraduate equivalent contact hours ²	Instructional support	Research	Administrative and other university service	Average workweek
State-related universities								
Penn State								
1979	2,391	2,097	294	11.4	21.8	9.1	10.6	52.5
1978 ^a	1,928	--	--	11.8	24.3	10.8	6.8	53.5
Pittsburgh								
1979	1,299	1,003	247	11.1	19.2	14.2	10.3	53.6
1978 ^a	1,608	--	--	10.5	17.7	14.7	12.7	54.5
Temple								
1979	1,296	1,098	241	11.3	15.5	11.8	14.7	52.4
1978	1,299	--	--	10.9	17.3	12.0	13.5	52.7
Lincoln								
1979	66	59	209 ^b	12.1	21.8	7.7	4.4	45.7
1978	69	--	--	11.9	16.8	8.2	9.6	46.4
State-owned colleges								
Bloomsburg								
1979	299	280	299	13.2	17.5	7.1	15.6	53.2
1978	282	--	--	13.2	17.9	7.8	15.3	54.0
California								
1979	286	241	229	10.2	17.1	7.1	17.1	51.2
1978	294	--	--	10.4	16.5	7.5	16.8	50.9
Cheyney								
1979	170	149	203 ^b	11.8	16.1	8.9	18.9	55.4
1978	175	--	--	11.9	15.9	8.3	17.2	55.1
Clarion								
1979	268	238	303	11.4	17.6	7.5	14.6	51.0
1978	273	--	--	11.3	17.6	6.6	16.3	51.6
East Stroudsburg								
1979	200	177	303	12.6	20.2	8.4	18.1	59.1
1978	202	--	--	12.4	19.5	8.7	17.7	58.2
Edinboro								
1979	366	326	226	13.2	19.7	8.5	14.9	56.2
1978	356	--	--	13.3	18.8	8.9	13.5	54.2
Indiana University								
1979	564	534	-- ^c	13.1	20.1	9.0	17.5	59.4
1978	561	--	--	12.9	20.4	8.9	17.1	59.0
Kutztown								
1979	271	245	263	13.9	17.3	9.0	14.6	54.6
1978	270	--	--	12.8	17.2	8.3	15.5	53.6
Lock Haven								
1979	148	138	251	13.0	18.5	7.6	14.7	55.8
1978	145	--	--	12.7	18.1	7.8	14.9	53.5
Mansfield								
1979	187	165	208	10.6	18.7	8.6	11.7	49.6
1978	191	--	--	10.8	19.9	6.8	12.1	49.5
Millersville								
1979	273	248	290	12.3	17.9	7.8	15.2	53.0
1978	270	--	--	12.4	17.8	7.5	15.1	52.6
Shippensburg								
1979	281	243	301	11.1	18.5	9.2	14.7	53.2
1978	281	--	--	11.0	18.4	8.5	15.7	53.3
Slippery Rock								
1979	313	283	275	17.6	16.2	6.8	14.1	54.5
1978	316	--	--	15.1	16.8	7.2	15.4	54.4
West Chester								
1979	433	397	266	13.8	18.6	9.1	16.5	57.7
1978	434	--	--	13.1	18.0	9.0	14.5	54.1
Total State-owned								
1979	4,059	2,981 ^d	268 ^d	12.9	18.3	8.2	15.6	54.8
1978	4,050	--	--	12.5	18.1	8.1	15.4	54.0

1. Average undergraduate equivalent student credit-hour production equals undergraduate student credit hours plus 1.25 times graduate student credit hours divided by number of full-time equivalent ranked instructional faculty.

2. Undergraduate equivalent contact hours equal undergraduate contact hours plus 1.25 times graduate contact hours.

a. Includes data for all full-time faculty including nonranked faculty members.

b. Underestimate based on average head-count production.

c. Not available.

d. Does not include Cheyney or Indiana University.

SOURCE: Reports of average weekly hours of work-related activities provided by the individual institutions, 1979 and 1980.

Faculty Workweek

Table 6 also presents the average hours reported in faculty workweeks for fall 1978 and fall 1979 for the set of ranked full-time faculty and breaks the workweeks into activity components.²

Average undergraduate equivalent contact hours vary at the State-owned schools for fall 1979 from 10.2 hours at California to 17.6 hours for ranked faculty at Slippery Rock, with an average of 12.9 hours. By comparison, for similar ranked faculty reports for fall 1978, the undergraduate equivalent contact hours average 12.5.

The average undergraduate equivalent contact hours for fall 1979 for the State-related schools show only a small variation of one hour among the four schools. Time spent in instructional support varies on the average by more than 6 hours between Temple faculty members--averaging 15.5 hours--and those at Penn State and Lincoln--averaging 21.8 hours.

For all institutions except Pittsburgh and Temple, full-time ranked faculty report spending from 6.8 to 9.2 hours in the average week on both sponsored and departmental research, approximately 16 percent of workweek hours for fall 1979. The State-owned schools' faculty report spending approximately 1.5 times the hours of the State-related faculty (with the exception of Temple's) in administrative and other university service.

2. The 1978 workweek data in table 6 are not identical to the comparable data in the previous Commission staff report because this report presents for the first time workweek calculations that do not include unranked faculty such as academic administrators, librarians, etc., with fewer contact hours on the average.

Average hours spent in all work-related activities vary only slightly from fall 1978 to fall 1979 at each of the schools observed.³ The largest increases are exhibited by West Chester (an increase of 3.6 hours) and Cheyney (an increase of 2.3 hours). There is nearly a 14-hour difference in average total hours spent between the lowest observation--Lincoln, at 45.7 hours--and the highest observation--Indiana, at 59.4 hours per week.

It should be noted that 20 percent of the full-time ranked faculty at both Cheyney and Indiana did not submit reports of hours spent in work-related activities for fall 1979.

Class Size

As shown in table 6, the overall average production varies at the extremes by about 100 student credit hours per full-time equivalent ranked instructional faculty member for fall 1979. Class size is the most significant determinant of variations in student credit-hour output per faculty member. Table 7 presents for several academic years each institution's average class size by level.⁴

Lower Division--The spread among institutions in average class size increased from a difference of 11 students between the highest and lowest observation in 1976-77 to nearly 13 students in

3. With respect to Penn State and Pittsburgh, a comparison with the previous year's workweeks must be qualified in that data for fall 1978 include reporting of all full-time faculty regardless of rank and at Penn State only of faculty members who are full time in instructional function rather than in employment.

4. The text table on p. 36 excludes individual instruction and is based only on classroom assigned credits for the 13 institutions which submitted data in a form permitting this breakdown.

Table 7

AVERAGE CLASS SIZE BY LEVEL¹
ACADEMIC YEARS 1976-79

Institution	Lower-division				Upper-division				Master's			
	1976-77	1977-78	1978-79	1979-80	1976-77	1977-78	1978-79	1979-80	1976-77	1977-78	1978-79	1979-80
State-related universities												
Penn State	27.9	30.0	27.8	28.7	23.7	22.4	10.6	11.6	10.8	10.0	5.8	6.8
Pittsburgh	28.6	27.7	28.5	27.9	13.3	11.5	9.5	9.7	5.5	7.0	5.1	5.2
Temple	29.1	26.1	24.0	24.0	22.0	21.1	19.7	18.9	15.7	13.6	13.2	12.6
Lincoln	21.8	22.6	22.0	22.5	13.1	13.6	15.6	11.5	9.4	10.3	17.6	18.4
State-owned colleges												
Bloomsburg	30.0	29.4	28.0	27.9	16.9	18.5	17.7	17.5	12.7	13.7	11.7	11.1
California	23.9	22.8	23.2	22.1	17.2	16.3	17.1	16.2	11.1	9.3	8.6	9.1
Cheyney	25.5	24.2	21.6	22.5	14.2	12.2	11.4	11.0	9.7	8.6	6.1	5.1
Clarion	32.4	30.5	28.8	28.2	20.4	17.0	17.2	14.3	9.4	8.9	8.8	6.2
East Stroudsburg	p.d.	31.9	31.6	31.8	18.4	18.6	17.8	10.1	14.8	14.0	13.7	7.2
Edinboro	n.d.	20.1	19.2	21.5	n.d.	12.9	11.5	12.8	n.d.	7.3	6.4	7.4
Indiana University	30.7	30.8	31.3	34.3 ^a	17.4	16.9	16.2	16.6 ^a	9.1 ^b	7.4 ^b	7.2 ^b	6.8 ^{a,b}
Kutztown	26.1	26.5	26.4	21.9	17.8	17.3	16.5	11.8	14.0	12.9	13.8	10.7
Lock Haven	27.5	24.7	25.1	25.2	17.0	14.9	13.4	13.4	n.a.	n.a.	n.a.	n.a.
Mansfield	26.3	23.4	21.4	24.1	12.7	11.9	11.0	10.8	8.1	9.2	10.0	11.4
Millersville	27.8	27.0	28.1	28.5	19.8	18.7	19.2	14.3	18.8	17.7	16.4	9.7
Shippensburg	28.8	28.1	28.9	28.0 ^c	22.1	22.6	21.4	21.7 ^c	12.2	11.8	11.1	12.6 ^c
Slippery Rock	30.8	29.5	28.4	27.8	17.6	15.7	15.2	12.8	11.3	9.6	9.4	9.0
West Chester	27.6	27.2	27.1	26.0	18.9	20.3	18.7	15.9	11.7	10.5	10.2	8.0

1. Average class sizes calculated for each level by division of student credit hours by assigned credits. For schools which furnished assigned credits only for classroom student credit hours generated 1978-79 and 1979-80, average class size includes individual instruction by assuming one assigned credit hour per individual instruction student credit hour produced.

- a. May be overestimated if assigned credits were not proportionately inflated to match inflated student credit hours reported.
- b. Includes doctoral-level classes.
- c. Estimate.
- p.d. Poor data.
- n.d. No data.
- n.a. Not applicable.

SOURCE: Student credit-hour production reports provided by the individual institutions, 1977, 1978, 1979 and 1980.

1979-80. The overall average class size of 27 for academic year 1979-80 is greater than for 1978-79, but an average of one student less than that for the peak year, 1976-77. About one-third of the schools have reported consistently declining average class sizes since academic year 1976-77. Although Edinboro and Mansfield have the smallest average class sizes for 1978-79, each show approximately a 12 percent increase in 1979-80.

Upper-Division--Average class sizes at this level range from 9.7 to 21.7 for academic year 1979-80, with an overall average of 13 or approximately one-half of the average lower-division class. Six schools show a consistent decline in average class size from 1976-77 and no school shows a consistent increase,⁵ although five schools register an increase over 1978-79.

Master's--The overall class size at the master's level has declined by an average of three students from 1976-77 to 1979-80. Only Lincoln and Mansfield reported larger average class sizes in each successive year since 1976-77, while half of the schools experienced decreases in each successive year.⁶ The wide range in master's

5. In years previous to 1979-80, assigned credit hours were not in every instance allotted on a one-for-one basis to individual instruction. For this reason the 1979-80 average class size at this level for a few institutions may not be directly comparable to previous year's class sizes shown in table 7. The data for Penn State and Pittsburgh at each level are comparable for the last two years. Table 4 shows the number of individual instruction credit hours per 1,000 total credit hours for each school.

6. As discussed in footnote 5, data for 1979-80 in table 7 are not always directly comparable with that for the previous years. Because the master's level has the greatest concentration of individual instructional student credit hours (see table 4) only general comparisons with previous years can be made.

level average class sizes for 1979-80--from 5.1 at Cheyney to 18.4 at Lincoln--may reflect differences in demand for this level of education or differences in types of course work offered.

Classroom Only--For each school which submitted classroom data, the following text table presents average class sizes with data for individual instruction excluded.⁷

At the lower-division level, a comparison of the range of average class sizes for classroom instruction of 22.1 to 31.8 students with that in table 7 reflects little individual instruction at this level, as substantiated by table 4. The upper-division undergraduate and master's average class sizes for classroom instruction only at Penn State and Pittsburgh are more than double those with the individual instruction included.

<u>Institution</u>	<u>Average classroom class size by level 1979-80 academic year</u>		
	<u>Lower division</u>	<u>Upper division</u>	<u>Master's</u>
Penn State	31.2	26.7	12.8
Pittsburgh	31.2	23.2	16.7
Lincoln	22.5	11.5	18.4
Bloomsburg	28.0	19.4	13.3
California	22.1	16.2	9.1
Cheyney	23.0	12.0	6.1
Clarion	29.3	16.9	7.6
East Stroudsburg	31.8	14.1	10.3
Edinboro	22.7	14.4	7.9
Lock Haven	26.4	15.4	n.a.
Mansfield	24.2	10.9	12.2
Millersville	29.1	17.0	13.3
Slippery Rock	28.0	14.3	10.0

7. Since Lincoln and California report no individual instruction, the class sizes in the text table and table 7 are identical.

Number of Courses

Undergraduate--Table 8 presents data on the changes in average number of courses taught and student credit hours produced for each academic year from 1977-78 to 1979-80 at the undergraduate and master's levels. While the largest increase and the largest decrease in student credit-hour production at the undergraduate level occurred at Indiana and Temple, respectively, over the three-year period, these changes were not accompanied by similar changes in numbers of courses. In fact, courses taught at Indiana decreased by 62 while Temple reports a small increase. Disregarding Pittsburgh and West Chester because of changes in method of counting individual instruction courses, the largest increase in courses occurred at Millersville (118) where undergraduate student credit-hour production also increased by 2,480.

Of the State-owned schools, Cheyney in the three-year period experienced the greatest decline in academic year undergraduate student credit-hour production--8,420 credit hours or 11 percent of 1977-78 production--and reduced courses taught by 11 (3 percent). California, with the second largest decrease in undergraduate student credit-hour production, reports a net increase of 66 courses from 1977-78 to 1979-80. Because of the method of Edinboro's reporting, it is impossible to determine the portion of the student credit-hour decline attributable to the academic year. However, Edinboro did reduce the number of courses taught by 62 from academic year 1977-78 to 1979-80.

Table 8

CHANGES IN AVERAGE NUMBER OF COURSES TAUGHT AND STUDENT CREDIT HOURS PRODUCED
ACADEMIC YEARS 1977-78 to 1979-80

Institution	Undergraduate level					Master's level				
	Number of courses			Change in number of courses	Change in student credit-hour production	Number of courses			Change in number of courses	Change in student credit-hour production
	1977-78	1978-79	1979-80			1977-78	1978-79	1979-80		
State-related universities										
Penn State	1,679	1,703	1,707	+28	+11,700	335	328	325	-10	-542
Pittsburgh	1,965	1,545	1,704	-261 ^a	+9,000	772	723	947	+175 ^a	-6,980
Temple	1,660	1,693	1,687	+27	-33,000	1,122 ^b	951 ^b	952 ^b	-170	+3,590
Lincoln	163	165	191	+28	-367	8	10	12	+4	+3,400
Total	5,467	5,106	5,289	-178	-12,700	1,115 ^c	1,061 ^c	1,284 ^c	+169 ^c	-4,120 ^c
State-owned colleges										
Bloomsburg	491	503	516	+25	+653	55	59	68	+13	+369
California	464	474	530	+66	-7,810	85	98	95	+10	-693
Cheyney	370	358	359	-11	-8,420	48	43	35	-13	-764
Clarion	425	451	454	+29	+6,190	76	68	68	-8	-909
East Stroudsburg	423	437	426	+3	-3,900	37	39	40	+3	+430
Edinboro	590	582	528	-62	-10,000 ^d	96	97	89	-7	-1,700 ^d
Indiana University	754	779	692	-62	+15,700 ^d	183	200	215	+32	+500 ^d
Kutztown	430	450	460	+30	+165	50	47	56	+6	-57
Lock Haven	283	295	301	+18	+2,200	n.a.	n.a.	n.a.	n.a.	n.a.
Mansfield	411	425	409	-2	-2,830	30	27	27	-3	+634
Millersville	448	456	566	+118	+2,480	67	65	99	+32	-1,310
Shippensburg	390	386	406	+16	-1,500	78	79	86	+8	-1,300
Slippery Rock	530	542	525	-5	-6,520	79	79	80	+1	+503
West Chester	653	702	853	+200 ^a	-546	156	169	222	+66 ^a	+532
Total	6,662	6,840	7,025	+363	-14,100	1,040	1,070	1,180	+140	-3,760

a. Change in number of courses does not account for change in method of counting individual instruction courses used in 1979-80.

b. Data furnished only for all graduate-level courses including doctoral level.

c. Total does not include Temple data.

d. Change in student credit-hour production for full year. Edinboro student credit-hour data for fiscal years 1977-78 and 1978-79 and Indiana University student credit-hour data for fiscal year 1979-80 from "State College and University Budgeting System Common Cost Accounting Reports."

n.a. Not applicable.

SOURCE: Reports provided by the individual institutions, 1978, 1979 and 1980.

Master's--At the master's level, the course data for the State-related schools should be studied with caution. Pittsburgh's method of accounting for individual instruction differed in 1979-80 and Temple's change in courses includes a probable reduction in doctoral level courses because of a large decrease in student credit-hour production at that level.

Five of the six State-owned schools which increased their master's level student credit-hour production also increased the number of courses taught, as did four of the seven remaining schools with decreased production at this level. Indiana--which experienced an increase in production for the three-year period of 500 student credit hours--and Millersville--which registered a decrease of 1,310 student credit hours--each report an increase of 32 master's level courses from 1977-78 to 1979-80. Overall, despite declining student credit-hour production, the trend has been to increase the number of courses taught at this level to a greater extent than at the undergraduate level.

SALARIES

Faculty salaries comprise the largest percentage of dollars spent for instruction. Variables which underlie salary costs, and which administrators have some latitude in adjusting to effect savings, are faculty size, contact hours, class size, number and variety of courses offered, faculty rank distributions and salary levels.

A unit measure of efficiency--instructional faculty salary cost per undergraduate equivalent student credit hour--enables comparison of output cost within and among the various schools.

Ranked Faculty

Table 9 presents the percentage changes from 1978-79 to 1979-80 in total and average salaries and in the size of the full-time equivalent ranked faculties. Each State-related and State-owned school is ordered according to the size of increase in total salaries.

The total faculty salaries for all schools listed increased by 8 percent. Increases at the individual schools range from 18.4 percent at Bloomsburg to 2.7 percent at Lincoln. The changes in total salaries result from changes in faculty size as well as from adjustments in salary levels and the ranking of individual faculty members.

The number of full-time equivalent ranked faculty members increased overall by 2.5 percent, as shown in column 2 of table 9. Bloomsburg registers the largest increase (14.3 percent) while Pittsburgh, Mansfield, East Stroudsburg and Edinboro report decreases.

On the average, salaries of ranked faculty increased by 5.7 percent from 1978-79. Here again, the data exhibit a wide range of average increases--from .5 percent to 12.5 percent. Largely because of changes in the sizes of the FTE ranked faculties, there is often little relationship between the rates of change in average

Table 9

INCREASES IN FULL-TIME EQUIVALENT RANKED FACULTY
TOTAL SALARIES AND AVERAGE SALARIES
ACADEMIC YEAR 1978-79 to 1979-80

Range of increase in total salaries	Institution	Increase in total salaries	Increase in FTE ranked faculty	Increase in average salary
10% - 19.9%	Bloomsburg	18.4%	14.3%	3.6%
	Kutztown	12.3	3.8	8.2
	Shippensburg	11.4	8.2	2.9
	West Chester	10.6	1.0	9.6
	Penn State	10.1	4.3	5.5
5 - 9.9	California	9.9	4.9	4.8
	Millersville	9.9	3.6	6.1
	Slippery Rock	9.9	2.8	6.8
	Cheyney	9.8	2.8	6.8
	Clarion ¹	9.8	2.8	6.9
	Indiana University	7.6	4.8	2.7
	Lock Haven	7.6	1.9	5.6
	Pittsburgh	6.5	-.7	7.3
	Mansfield	5.6	-1.5	7.3
0 - 4.9	East Stroudsburg	4.9	-.9	5.8
	Edinboro ²	4.3	-7.3	12.5
	Temple	3.8	.2	3.5
	Lincoln	2.7	2.2	.5
	Total	8.1	2.5	5.7

1. Full-time academic year faculty statistics.

2. Full-time total year faculty statistics.

SOURCE: Faculty salary reports provided by the individual institutions, 1980.

salary and in total salaries. For example, at Bloomsburg, the 18.4 percent increase in total salaries is the result of a small increase in the average salary (3.6 percent) and a substantial increase (14.3 percent) in FTE ranked faculty.

Appendix table 8A, p. 80, presents a historical picture of average salaries and the percentages of full-time equivalent ranked faculty in various ranks for each year over a three-year period, 1977-78 to 1979-80.

From 1978-79 to 1979-80, the average salary for all ranks increased by \$1,000 or more at Penn State, Pittsburgh and 10 of the 14 State-owned schools. The average salaries for all ranks together at Penn State and Pittsburgh are lower than those at the 14 State-owned schools because of differences in the distribution of faculty members among ranks. At Penn State, for example, 21 percent of ranked faculty are professors in contrast to 41 percent at California.

Lincoln reports the narrowest range in ranked salaries--from an average of \$24,100 for professors to \$15,200 for instructors. By comparison, Temple's average ranked salaries range from \$32,200 to \$10,300.

The aggregate percentage distributions of full-time equivalent faculty members by rank from 1977-78 to 1979-80 are shown in the following text table, as calculated from appendix table 9A. The 1979-80 data indicate that at the State-related schools 53 percent of the faculty hold the rank of professor or associate professor as compared with 72 percent at the State-owned schools.

At the other extreme, 16 percent are in the rank of instructor at the State-related universities and only 6 percent at the State-owned schools.

	<u>Professor</u>	<u>Associate professor</u>	<u>Assistant professor</u>	<u>Instructor</u>
State-related				
1977-78	22.7%	29.0%	32.5%	15.8%
1978-79	22.8	29.1	32.3	15.8
1979-80	24.1	29.0	31.2	15.7
State-owned*				
1977-78	32.6	38.8	22.3	6.3
1978-79	33.7	38.5	22.1	5.7
1979-80	34.0	38.3	21.3	6.4

*Excluding Clarion.

Ranked Instructional Faculty

Table 10 presents the average 1979-80 salaries for full-time equivalent ranked instructional faculty, ordered by magnitude, along with the percentages holding the ranks of professor and associate professor. These data vary slightly from those in appendix table 8A, which represent both instructional and noninstructional faculty. In comparing table 10 with appendix table 8A, it becomes evident that instructional faculty salaries are not uniformly paid at a higher or lower rate than noninstructional faculty salaries. In fact, the average noninstructional salary never varies from the instructional salary by more than \$500. Because of the manner in which data were provided, identical calculations are shown in both tables for Penn State, Lincoln and Cheyney.

Table 10

FULL-TIME EQUIVALENT INSTRUCTIONAL FACULTY AND PERCENTAGE OF
TOTAL IN RANKS OF PROFESSOR AND ASSOCIATE PROFESSOR
ACADEMIC YEAR 1979-80

Range of average salary	Institution	Average academic year salary of ranked FTE instructional faculty	Percentage of ranked FTE instructional faculty		
			Professor	Associate professor	Professor and associate professor
\$24,000-\$24,999	California	\$24,800	42%	44%	86%
	Lock Haven	24,200	31	44	75
	Kutztown	24,000	32	44	76
\$23,000-\$23,999	Edinboro	23,900	35	38	73
	Cheyney ¹	23,700	33	46	79
	Shippensburg	23,500	34	36	70
	Mansfield	23,400	26	41	67
	Slippery Rock	23,400	36	33	69
\$22,000-\$22,999	East Stroudsburg	22,900	35	40	75
	Clarion	22,800	31	38	69
	Millersville	22,700	31	41	72
	Indiana University	22,600	38	33	71
	West Chester	22,600	29	40	69
	Bloomsburg	22,200	28	41	69
	Temple	22,000	27	29	56
	Less than \$22,000				
	Penn State	20,300	21	25	46
	Pittsburgh	19,300	23	34	57
	Lincoln ¹	18,700	22	22	44
	All institutions	21,600	27	32	59

1. Based on total FTE faculty and salaries.

SOURCE: Salary reports provided by the individual institutions, 1980.

California reports the highest average salary for instructional faculty and Lincoln the lowest. Evidencing the dominant influence of rank upon average salary, California also has the highest percentage (86 percent) of instructional faculty holding the top two ranks while, at the other end of the range, Lincoln's top two ranks represent less than one-half of the instructional faculty.

Table 11 orders by magnitude the average instructional full-time equivalent salaries for professor and associate professor. Again, these salaries vary slightly from those shown in appendix table 8A. Temple and Penn State for the third consecutive year pay the highest average professorial salaries--\$32,300 and \$29,900, respectively, for 1979-80. However, appendix table 8A indicates only 28 percent and 21 percent, respectively, hold this rank.

At the State-owned schools, table 11 shows only a \$1,700 difference between the highest and lowest average salary for professor. At the associate professor rank, a \$2,100 difference exists. Mansfield, Lock Haven and Kutztown report the highest average instructional salaries for professors and associate professors of the State-owned schools. West Chester, Bloomsburg and Millersville report the lowest average salaries for professor and Slippery Rock, East Stroudsburg and Indiana the lowest for associate professor.

The following text table shows for the State-related and State-owned schools the aggregate number of full-time equivalent

Table 11

AVERAGE ACADEMIC YEAR SALARIES
FTE INSTRUCTIONAL PROFESSORS AND ASSOCIATE PROFESSORS
1979-80

Institution	<u>Average salary</u> Professor	Institution	<u>Average salary</u> Associate professor
Temple	\$32,300	Mansfield	\$24,100
Penn State	29,900	Lock Haven	24,000
Mansfield	29,200	Kutztown	23,900
Lock Haven	28,900	Temple	23,600
Kutztown	28,600	Edinboro	23,500
Edinboro	28,400	Cheyney	23,100 ^a
California	28,200	California	23,100
East Stroudsburg	28,100	Shippensburg	23,100
Clarion	28,100	Millersville	22,800
Cheyney	28,000 ^a	West Chester	22,800
Shippensburg	28,000	Clarion	22,700
Pittsburgh	28,000	Bloomsburg	22,700
Indiana University	27,900	Penn State	22,600
Slippery Rock	27,700	Slippery Rock	22,600
West Chester	27,600	East Stroudsburg	22,400
Bloomsburg	27,600	Indiana University	22,000
Millersville	27,500	Lincoln	20,500 ^a
Lincoln	24,100 ^a	Pittsburgh	19,700

a. Based on total FTE faculty and salaries.

SOURCE: Salary reports provided by the individual institutions, 1980.

teaching faculty by rank for each of three years and the three-year increase. The number of professors increased at 12 of the 17 institutions in each successive year (appendix table 9A, p. 81) with an overall increase of 234 in the three-year period. The overall increase in full-time teaching faculty in the four ranks was 318. In the top two ranks, the State-related and State-owned schools had very similar total increases in the number of faculty.

	<u>Professor</u>	<u>Associate professor</u>	<u>Assistant professor</u>	<u>Instructor</u>	<u>Total four ranks</u>
State-related					
1977-78	1,326	1,694	1,902	923	5,845
1978-79	1,347	1,722	1,913	937	5,919
1979-80	1,447	1,745	1,878	941	6,011
Three-year increase	+121	+51	-24	+18	+166
State-owned*					
1977-78	1,432	1,701	980	274	4,387
1978-79	1,466	1,674	960	247	4,347
1979-80	1,545	1,738	968	288	4,539
Three year increase*	+113	+37	-12	+14	+152

*Excluding Clarion.

Comparison with National Data

Average Salaries--Academe, the bulletin of the American Association of University Professors, publishes average salaries by faculty rank for each U.S. institution of higher education as well as the annual rates of salary increase and the number of faculty members in the various ranks. Table 12 presents 1979-80 data on the Pennsylvania State-related and State-owned institutions appearing

Table 12

STATE-RELATED AND STATE-OWNED FACULTY COUNT AND AVERAGE SALARIES
BY ACADEME CATEGORY,¹ RANK AND TENURE STATUS
1979-80

Category	Institution	Average salary by rank (000's)				Salary increase for continuing faculty 1978-79 to 1979-80				Number of full-time faculty				Tenured faculty as percentage of total faculty
		Assoc.		Asst.		Assoc.		Asst.		Assoc.		Asst.		
		Prof.	Prof.	Prof.	Instr.	Prof.	Prof.	Prof.	Instr.	Prof.	Prof.	Prof.	Instr.	
State-related universities														
I	Penn State - Main Campus	\$32.4	\$24.3	\$19.0	\$14.7	6.9%	8.1%	8.9%	8.9%	499	412	368	148	64.7%
IIA	Penn State U. Campuses	28.9	23.9	18.2	15.9	5.1	6.0	7.1	7.1	18	57	86	46	50.2
III	Penn State U. Campuses	24.4	21.0	17.2	15.4	7.5	7.6	7.1	6.6	119	126	391	147	47.3
I	Pittsburgh - Main Campus	32.9	23.7	18.5	13.0	6.1	6.8	8.0	7.7	391	425	341	92	61.7
III	Bradford Campus	n.a.	22.3	16.8	11.8	7.1	7.0	6.5	6.0	1	14	20	9	33.3
III	Greensburg Campus	n.a.	18.5	16.6	n.a.	n.a.	4.0	5.5	7.5	3	11	13	4	45.2
IIIB	Johnstown Campus	25.1	20.0	17.2	12.3	4.8	7.7	9.9	--	9	45	46	11	48.2
III	Titusville Campus	n.a.	17.3	n.a.	n.a.	n.a.	7.4	n.a.	n.a.	n.a.	9	n.a.	1	66.6
I	Temple	32.2	24.1	18.8	14.2	6.1	6.2	6.1	6.2	425	447	350	134	69.2
IIIB	Lincoln	23.9	18.1	14.9	11.6	5.2	3.1	5.4	6.0	16	16	25	11	42.0
State-owned colleges														
IIA	Bloomsburg	30.0	24.4	18.8	13.8	6.8	6.8	6.9	7.0	92	125	72	10	82.9
IIA	California	29.7	24.5	20.0	-- ^a	9.9	10.0	10.0	-- ^a	118	136	48	3	95.1
IIIB	Cheyney	28.9	24.2	19.5	16.7	5.0	5.0	5.0	5.0	55	85	25	19	59.8
IIA	Clarion - Main Campus	30.1	24.6	19.5	15.5	7.8	8.6	15.5	10.2	80	101	43	14	82.5
III	Venango Campus	n.a.	n.a.	20.0	n.a.	n.a.	n.a.	8.8	n.a.	n.a.	n.a.	13	n.a.	85.7
IIA	East Stroudsburg	28.4	23.9	21.8	n.a.	3.7	9.6	7.9	n.a.	79	80	49	n.a.	85.3
IIA	Edinboro	30.2	24.6	20.1	15.5	6.5	5.3	5.1	8.6	133	148	97	7	93.2
I	Indiana University	29.6	24.3	19.5	14.7	7.3	7.3	12.9	6.5	220	182	118	34	85.0
IIA	Kutztown	29.6	24.6	19.9	16.2	8.0	8.4	9.2	11.9	87	114	49	15	93.2
IIIB	Lock Haven	30.0	24.1	20.3	-- ^a	6.7	7.3	8.1	-- ^a	46	69	28	4	93.3
IIA	Mansfield	29.8	24.7	19.7	16.2	6.2	9.3	11.0	12.3	55	76	47	10	86.7
IIA	Millersville	30.0	24.5	19.7	16.8	7.4	5.6	5.7	17.3	91	120	73	15	90.1
IIA	Shippensburg	30.0	24.6	20.1	16.8	7.8	8.8	8.7	13.6	99	99	72	6	86.3
IIA	Slippery Rock	30.2	24.8	19.9	15.7	5.4	6.1	6.3	8.2	112	97	71	31	83.6
IIA	West Chester	30.0	24.7	19.9	16.1	4.4	8.5	8.8	8.8	140	192	109	27	95.7

1. Institutions in category I offer the doctorate degree and in the most recent three years conferred an annual average of 15 or more earned doctorates in at least three nonrelated disciplines. Institutions in category IIA award degrees above the bachelor's degree but do not qualify for category I. Institutions in category IIIB award only the bachelor's degree or its equivalent and in category III offer only the first two years of instruction.

a. Salary data not provided for ranks with five or fewer faculty members.
n.a. Not applicable.

SOURCE: Academe, 66 (Sept. 1980), pp. 301-302 and (Nov. 1980), p. 394.

in the September and November 1980 issues along with the Academe category into which each school and its campuses fall. These data include only full-time ranked faculty during the nine-month academic year. Therefore, they are not directly comparable with the average salaries on appendix table 8A, which also reflect part-time and summer-term ranked faculty salaries and, as a result, are usually lower than the Academe averages.

As a benchmark, Academe publishes national average salaries by rank for the categories of public institutions. The following text table lists the averages applicable to the State-owned and State-related schools. Average faculty salaries (table 12) at Penn State main campus, Temple, Pittsburgh main campus (except for instructors) and Indiana (except for professors) are above the averages for each category I rank.⁸

Rank	Average salary, public institutions standard academic basis 1979-80*			
	Category I	Category IIA	Category IIB	Category III
Professor	\$30,120	\$27,200	\$24,230	\$25,190
Associate professor	22,450	21,630	20,110	21,270
Assistant professor	18,160	17,790	17,030	17,930
Instructor	14,160	14,400	13,920	16,130
All ranks	23,440	21,390	18,860	19,450

*Academe 66 (Sept. 1980): table 10, p. 278.

8. Comparison of appendix table 11A, p. 83, with table 12 indicates that faculty salaries of the category I State-related schools and Indiana rank in the 60-to-90th percentile interval of average salaries for each rank of schools nationwide.

Except for Bloomsburg instructors, Pennsylvania average salaries in each rank for State-owned schools in categories IIA and IIB are well above the comparable national averages.⁹

Of the State-owned schools, only Cheyney and East Stroudsburg have average salaries for the rank of professor below the range of \$29,600 to \$30,200 and only at East Stroudsburg is the average salary of associate professors less than the range of \$24,000 to \$24,800. This narrow range in average salaries is the result of the seven-step faculty salary schedule established by collective bargaining at the State-owned schools, shown in appendix table 10A, p. 82. One can observe that for the top two ranks, the average salaries, with the exceptions cited above, actually fall between the highest two pay steps. (See salaries effective August 25, 1979.)

Average Salary Increases--Salary increases for continuing faculty from 1978-79 to 1979-80 shown in Academe data in table 12 vary from 4.4 percent for professors at West Chester to 17.3 percent for instructors at Millersville. These faculty salary increases account for promotion to the next rank by counting the faculty member for the two years in his lower rank.

For all ranks of categories I, IIA, IIB and III, the average faculty salary increases at public institutions nationwide

9. Reference to appendix table 11A, p. 83, and table 12 shows, that Lock Haven salaries fall in the 95th-and-above percentile interval for category IIB schools and the rank salaries of all other State-owned schools fall in the 80th-and-above percentile intervals for schools in their respective categories.

are 8.5, 8.0, 8.2 and 7.7 percent, respectively.¹⁰ Only California and Kutztown reported salary increases for continuing faculty of each rank that are 8 percent or greater. If every faculty member were to remain in his rank, without promotion, the increase in salary, calculated from appendix table 10A for the State-owned schools, suggests approximately a 5.75 percent salary increase over 1978-79 for faculty already at the top step of their ranks. The larger percentage increases shown for the ranks in table 12 in the case of some of the schools represent promotions from one rank step to the next or from one rank to the next, as well as the 5.75 percent increase in each step.

Faculty Rank and Tenure--Comparisons among the institutions of the number of full-time faculty by rank point up the distributional problem which directly affects salary costs (table 12). It may be noted from appendix table 9A that full-time plus part-time equivalent professors outnumber faculty in all other ranks at Indiana and Slippery Rock. Academe data show that, in addition to these schools, full-time professors at Penn State main campus and Shippensburg equal or outnumber faculty in the remaining ranks.

The last column in table 12 presents the percentage of faculty with tenure. Of the State-owned schools, Cheyney has the lowest proportion of tenured faculty (59.8 percent) followed by Bloomsburg and Clarion main campus with 82.9 and 82.5 percent,

10. Academe 66 (Sept. 1980): table 3, p. 265.

respectively. Over 95 percent of the faculty members at both California and West Chester have tenure. Overall, the tenured rates for categories I, IIA, IIB and III of public institutions nationwide are 67, 68, 60 and 66 percent, respectively.¹¹

These tenured proportions at the Pennsylvania State-owned schools can only be reduced by attrition and more restrictive tenure policies. Short-term contracts--even at higher salaries--and increased use of part-time faculty appointments would alleviate the problem of high locked-in salary costs and allow more flexibility in adjusting to changes in educational demand.

Cost Efficiency

For purposes of a summary comparison, table 13 presents measures of output, workload and salary cost for 1979-80. The schools are ranked and categorized by the magnitude of their full-time equivalent students.

In general, instructional faculty salary costs per undergraduate equivalent student credit hour are inversely related to the size of the institution with large schools reporting costs around \$40 per hour and the smaller schools reaching an average of \$55. Significant exceptions occur, however, usually indicating the impact of one or more additional variables. In size category I, Temple, with the highest salary cost per student credit hour, has the smallest average student credit-hour production per instructional

11. Ibid., table 13, p. 281.

Table 13

MEASURES OF OUTPUT, WORKLOAD AND SALARY COST
1979-80

Size category	Institution	Total year Full-time equivalent students ¹	Academic year		Fall 1979		Total year		
			Undergraduate equivalent student credit hours ² per full-time instructional faculty	Number of courses	Undergraduate equivalent contact hours per ranked full-time faculty	Average lower- division class size	Percentage of student credit hours at graduate level	Percentage of student credit hours generated by part-time faculty	Instructional faculty salary cost per undergraduate equivalent student credit hour
1	Penn State	54,600	538	2,194	11.4	30.7	6.6%	22.3%	\$36
	Pittsburgh	28,300	458	3,064 ^a	11.1	28.8	25.1	27.1 ^a	40
	Temple	26,600	440	2,639	11.3	24.3	27.7	27.6	45
2	Indiana	12,400	572	907	13.1	31.7 ^b	5.4	10.8	39
	West Chester	8,190	517	1,075	13.8	26.4	7.4	10.5	44
	Bloomsburg	6,370	560	584	13.2	28.6	6.3	10.1	40
3	Millersville	5,600	542	665	12.3	29.3	9.4	10.7	42
	Slippery Rock	5,530	514	605	17.6	28.4	5.2	7.7	46
	Shippensburg	5,430	562	492	11.1	28.7	8.7	12.3	42
	Edinboro	5,360	439	617	13.2	21.9	6.2	10.6	54
	Clarion	5,300	554	522	11.4	29.5	3.2	3.4 ^c	41
4	Kutztown	4,520	506	516	13.9	29.6	5.0	6.5	48
	East Stroudsburg	4,100	569	466	12.6	31.8	6.3	10.6	40
	California	4,070	433	625	10.2	22.8	6.9	11.1	57
5	Mansfield	2,540	426	436	10.6	24.5	5.0	9.3	55
	Lock Haven	2,380	477	301	13.0	25.5	0.0	5.3	50
	Cheyney	2,370	365 ^d	394	11.8	23.3	2.9	4.7	56 ^e
	Lincoln	1,410	432 ^d	203	12.1	23.5	12.0	35.4	35 ^e

1. Full-time equivalent students calculated by dividing undergraduate student credit hours by 30 and graduate student credit hours by 24.

2. Undergraduate student credit hours plus 1.25 times graduate student credit hours.

a. Not including dental school.

b. May be overestimated if assigned credits were not proportionately inflated to match inflated student credit hours reported.

c. Academic year statistic.

d. Underestimate based on average head count production.

e. Total faculty salary cost per equivalent student credit hour.

SOURCE: Student credit-hour production reports, number of courses reports and faculty salary reports provided by the individual institutions, 1980.

faculty member. In size category III, Edinboro's salary cost per student credit hour of \$54 far exceeds the other schools in its group, apparently due to a smaller average class size.

Higher costs per student credit hour also go hand-in-hand with larger percentages of student credit hours at the graduate level. Even though graduate student credit hours are weighted in calculating unit costs, Temple, West Chester and California had the highest costs per student credit hour and the largest percentages of graduate output in their size categories.

Cost by Area of Study

Table 14 shows each school's instructional faculty salary cost per undergraduate equivalent student credit hour for 10 selected HEGIS departmental classifications. The unit costs for all institutions are shown in the last row.

Of these classifications, the lowest average cost occurs in the business department. The individual department costs range from \$22 in business and management at Lincoln to \$106 in fine and applied arts at Mansfield.

Departmental costs show little relationship to school size; some of the largest costs are at the smaller schools. The variances in costs among the departments are due to the fact that some departments--such as foreign languages--have a large number of subdivisions resulting in a larger number of smaller classes than in departments such as mathematics and psychology where subdivision possibilities are more limited.

Table 14

INSTRUCTIONAL FACULTY SALARY COST PER UNDERGRADUATE EQUIVALENT
STUDENT CREDIT HOUR BY SELECTED HEGIS CLASSIFICATION
1979-80

Institution	Biological sciences	Business & management	Education	Fine & applied arts	Foreign languages	Letters	Mathematics	Physical sciences	Psychology	Social sciences
State-related universities										
Penn State	\$29	\$29	\$51	\$41	\$35	\$31	\$24	\$37	\$30	\$29
Pittsburgh	51	35	54	50	51	37	28	38	25	30
Temple	49	33	50	55	64	46	37	57	27	44
Lincoln ¹	28	22	39	68	64	37	27	54	44	35
State-owned colleges										
Bloomsburg	47	28	41	44	67	38	33	68	31	37
California	75	25	66	62	99	67	37	61	47	56
Cheyney ¹	84	35	81	-- ^a	-- ^a	61	38	67	-- ^b	42
Clarion	57	25	47	49	81	44	40	68	27	34
East Stroudsburg	43	n.a.	43	39	74	37	35	39	31	31
Edinboro	69	23	59	74	77	46	43	61	38	51
Indiana University	44	24	48	55	42	37	43	55	36	32
Kutztown	46	24	61	41	81	51	55	73	37	40
Lock Haven	82	n.a.	51	75	85	50	38	64	33	40
Mansfield	41	31	55	106	85	48	40	81	51	46
Millersville	55	n.a.	47	45	58	35	35	41	37	35
Shippensburg	54	33	56	41	76	47	35	62	34	35
Slippery Rock	61	n.a.	54	58	70	38	33	57	37	37
West Chester	45	25	49	62	53	47	33	45	35	33
All institutions ²	44	29	51	53	52	38	31	45	32	35

1. Faculty instructional and noninstructional salary costs per undergraduate equivalent student credit hour.

2. Excluding Lincoln and Cheyney.

a. Included in letters.

b. Included in social sciences.

n.a. Not applicable.

SOURCE: Reports provided by the individual institutions, 1980.

III. COMMONWEALTH APPROPRIATIONS AND TUITION

APPROPRIATIONS AND OUTPUT

The extent to which Commonwealth budget policy differentiates among institutions can be determined by relating each institution's appropriation from the Commonwealth to its total student credit-hour production.

While the Commonwealth educational appropriations are not solely for costs of instruction--but also for maintenance, academic support, library expenditures and other expenses of operation--the relationship of student credit-hour production to appropriation is a uniform, quantifiable measure directly relating a school's educational output to the Commonwealth's input of funds. The measure of output for this purpose has been designated as a credit-hour "unit of production" and reflects the increasing costs of higher levels of instruction. (The method of calculating a unit of production is provided in the appendix, p. 86.)

Table 15 shows units of production for each school for each year from 1977-78 to 1980-81, the appropriation for each of

Table 15

 UNITS OF PRODUCTION AND COMMONWEALTH APPROPRIATIONS
 1977-81

Institution	Units of production ¹ (000's)	Commonwealth appropriation (000's)	Appropriations per unit	
			Amount	Percentage change
State-related universities				
Penn State				
1977-78	2,780	\$79,522	\$28.61	--
1978-79	2,734	83,498	30.55	6.8
1979-80	2,715	89,343	32.90	7.7
1980-81	2,715	94,704	34.88	6.0
Pittsburgh				
1977-78	1,545	52,858	34.20	--
1978-79	1,530	55,500	36.28	6.1
1979-80	1,558	59,385	38.11	5.0
1980-81	1,558	62,948	40.40	6.0
Temple				
1977-78	1,441	56,987	39.56	--
1978-79	1,367	59,836	43.77	10.6
1979-80	1,348	64,025	47.51	8.5
1980-81	1,348	67,867	50.35	6.0
Lincoln				
1977-78	48	3,025	62.86	--
1978-79	51	3,176	62.45	-.7
1979-80	62	3,398	55.00	-11.9
1980-81	62	3,602	58.10	5.6
Total State-related				
1977-78	5,814	192,392	33.09	--
1978-79	5,682	202,010	35.56	7.5
1979-80	5,683	216,151	38.03	6.9
1980-81	5,683	229,121	40.32	6.0
State-owned colleges				
Bloomsburg				
1977-78	291	11,926	41.03	--
1978-79	286	12,599	43.98	7.2
1979-80	291	13,726	47.13	7.2
1980-81	291	15,074	51.80	9.9
California				
1977-78	196	13,212	67.57	--
1978-79	187	13,643	73.14	8.2
1979-80	179	14,777	82.63	13.0
1980-81	179	14,987	83.73	1.3
Cheyney				
1977-78	113	7,986	70.88	--
1978-79	98	8,467	86.76	22.4
1979-80	98	9,404	96.26	10.9
1980-81	98	9,678	98.76	2.6
Clarion				
1977-78	215	12,190	56.61	--
1978-79	222	12,819	57.78	2.1
1979-80	219	13,628	62.34	7.9
1980-81	219	14,369	65.61	5.2
East Stroudsburg				
1977-78	191	9,187	48.05	--
1978-79	178	9,567	53.75	11.9
1979-80	178	10,727	60.14	11.9
1980-81	178	11,870	66.69	10.9

Edinboro				
1977-78	262	14,300	54.52	--
1978-79	246	15,475	62.88	15.3
1979-80	236	15,809	67.09	6.7
1980-81	236	16,618	70.42	5.0
Indiana University				
1977-78	531	21,004	39.57	--
1978-79	546	22,330	40.90	3.4
1979-80	551	24,512	44.52	8.9
1980-81	551	26,601	48.28	8.4
Kutztown				
1977-78	208	11,241	54.07	--
1978-79	202	11,204	55.38	2.4
1979-80	200	12,265	61.32	10.7
1980-81	200	13,286	66.43	8.3
Lock Haven				
1977-78	94	7,000	74.60	--
1978-79	87	7,582	86.66	16.2
1979-80	91	8,333	91.30	5.4
1980-81	91	8,866	97.43	6.7
Mansfield				
1977-78	113	9,000	79.56	--
1978-79	105	9,431	89.88	13.0
1979-80	108	9,929	91.55	1.9
1980-81	108	10,379	96.10	5.0
Millersville				
1977-78	249	12,780	51.39	--
1978-79	240	12,703	53.01	3.2
1979-80	240	13,667	56.94	7.4
1980-81	240	14,513	60.47	6.2
Shippensburg				
1977-78	248	11,969	48.29	--
1978-79	241	12,750	52.84	9.4
1979-80	243	13,512	55.67	5.4
1980-81	243	14,166	58.30	4.7
Slippery Rock				
1977-78	249	13,344	53.60	--
1978-79	235	13,922	59.20	10.4
1979-80	238	14,641	61.55	4.0
1980-81	238	15,201	63.87	3.8
West Chester				
1977-78	377	17,558	46.54	--
1978-79	365	18,543	50.85	9.3
1979-80	365	19,761	54.08	6.4
1980-81	365	20,849	57.12	5.6
Total State-owned				
1977-78	3,337	172,697	51.76	--
1978-79	3,238	181,035	55.91	8.0
1979-80	3,237	194,691	60.15	7.6
1980-81	3,237	206,457	63.78	6.0
Grand total				
1977-78	9,151	365,089	39.90	--
1978-79	8,920	383,045	42.95	7.6
1979-80	8,920	410,842	46.06	7.2
1980-81	8,920	435,578	48.83	6.0

1. In this measure, student credit-hour production at the different levels has been weighted according to instructional faculty salaries to standardize all output to equivalent lower-division credit hours. The 1980-81 units of production are estimated to be equal to 1979-80 number of units.

SOURCE: Student credit-hour and degree reports of the individual institutions.

the four years and the resulting appropriation per unit of production, i.e., the Commonwealth appropriation divided by a standardized measure of output (credit hours weighted by level). The appropriation per unit of production for 1980-81 was calculated for each school by holding student credit-hour production constant at the 1979-80 level.¹

Based on the assumption of constant production, the 1980-81 appropriation per unit of production is estimated to increase by about 6 percent over the 1979-80 appropriation per unit at each of the State-related schools. Appropriations per unit of production range from about \$35 at Penn State to \$58 at Lincoln.

The increase in appropriation per unit of production of 6 percent for all State-owned schools together is equal to that for the State-related schools. Increases, however, vary widely among the State-owned schools, ranging from 10.9 percent at East Stroudsburg to 1.3 percent at California.

East Stroudsburg and Millersville, where units of production held approximately constant from 1978-79 to 1979-80, and Kutztown, where total units fell over the same period, were

1. Since year-to-year percentage changes in output are typically less than year-to-year percentage increases in appropriations (compare for example, data in tables 5 and 16), this procedure--using estimated output--is likely to produce a more accurate indication of current relative levels of appropriation among schools than using historical data.

the only State-owned schools with constant or declining production to receive greater than average increases in appropriations per unit of production from 1979-80 to 1980-81. However, their appropriations per unit are low compared with others in their size category.

For State-owned schools in the aggregate, appropriations per unit of production for 1980-81 totaled almost \$64--some \$24 or 60 percent higher than the \$40 for State-related institutions.

One State-owned school, Indiana, receives less per unit of production than Temple, which is 2.5 times larger as measured by credit-hour output. Although having the smallest number of full-time equivalent students, Lincoln has a low unit appropriation due to its relatively large percentage of federal and other non-State funding.

A comparison of faculty salary costs per undergraduate equivalent student credit hour and the Commonwealth appropriations per unit of production leads to the clear conclusion that Commonwealth support increases as salary cost increases and in addition increases as institutional size decreases.

The following tabulation reproduces the credit-hour salary cost data from table 13 and the appropriations per unit of production from table 15. The data are for 1979-80. The schools are ranked by size of output.

<u>Institution</u>	<u>Salary cost per student credit hour</u>	<u>Appropriation per unit of production</u>
Penn State	\$36	\$35
Pittsburgh	40	40
Temple	45	50
Indiana	39	45
West Chester	44	54
Bloomsburg	40	47
Millersville	42	57
Slippery Rock	46	62
Shippensburg	42	56
Edinboro	54	67
Clarion	41	62
Kutztown	48	61
East Stroudsburg	40	60
California	57	83
Mansfield	55	92
Lock Haven	50	91
Cheyney	56	96
Lincoln	35	58

At the lower end of the range (Penn State), the salary cost per credit hour and the appropriation per unit are about equal. Starting with Temple and Indiana, the appropriation per unit exceeds salary cost by about 10 percent and, as size decreases, by about 30 to 50 percent in the middle of the range and by about 70 to 80 percent for higher-cost small-size schools. Without significant exception, the Commonwealth appropriations subsidize higher salary costs per credit hour as well as the relative inefficiency of small-scale production.

Table 16, containing the dollar totals of annual Commonwealth appropriations since 1978-79, indicates that overall for the three large State-related universities and the State-owned schools year-to-year percentage increases are in most instances smaller than unit appropriation increases as shown in table 15 which take into account declining output.

Table 16

COMMONWEALTH APPROPRIATIONS
(000's)
1978-82

Institution	1978-79 Actual	Increase over 1977-78	1979-80 Actual	Increase over 1978-79	1980-81 Available	Increase over 1979-80	1981-82 Budgeted	Increase over 1980-81
State-related universities								
Penn State	\$83,498	5.0%	\$89,343	7.0%	\$94,704	6.0%	\$99,913	5.5%
Pittsburgh	55,500	5.0	59,385	7.0	62,948	6.0	66,410	5.5
Temple	59,836	5.0	64,025	7.0	67,867	6.0	71,600	5.5
Lincoln	3,176	5.0	3,398	7.0	3,602	6.0	3,800	5.5
Subtotal	202,010	5.0	216,151	7.0	229,121	6.0	241,723	5.5
State-owned colleges								
Bloomsburg	12,599	5.6	13,726	8.9	15,074	9.8	16,292	8.1
California	13,643	3.3	14,777	8.3	14,987	1.4	15,225	1.6
Cheyney	8,467	6.0	9,404	11.1	9,678	2.9	10,128	4.6
Clarion	12,819	5.2	13,628	6.3	14,369	5.4	14,942	4.0
East Stroudsburg	9,567	4.1	10,727	12.1	11,870	10.7	13,003	9.5
Edinboro	15,475	8.2	15,809	2.2	16,618	5.1	17,164	3.3
Indiana University	22,330	6.3	24,512	9.8	26,601	8.5	28,838	8.4
Kutztown	11,204	-0.3	12,265	9.5	13,286	8.3	14,310	7.7
Lock Haven	7,582	8.3	8,333	9.9	8,866	6.4	9,715	9.6
Mansfield	9,431	4.8	9,929	5.3	10,379	4.5	10,629	2.4
Millersville	12,703	-0.6	13,667	7.6	14,513	6.2	15,247	5.1
Shippensburg	12,750	6.5	13,512	6.0	14,166	4.8	14,746	4.1
Slippery Rock	13,922	4.3	14,641	5.2	15,201	3.8	15,683	3.2
West Chester	18,543	5.6	19,761	6.6	20,849	5.5	21,890	5.0
Subtotal	181,035	4.8	194,691	7.5	206,457	6.0	217,812	5.5
Grand total	383,045	4.9	410,842	7.3	435,578	6.0	459,535	5.5

SOURCE: Governor's Executive Budget, 1980-81 and 1981-82.

The State-related universities individually and the State-owned schools as a group are scheduled to receive a 5.5 percent increase in Commonwealth appropriations for 1981-82. Among the State-owned schools, 1981-82 budgeted appropriation increases range from 1.6 percent at California to 9.6 percent at Lock Haven.² Except for Lock Haven, the five State-owned schools with the highest State appropriations per unit of production--all greater than \$70--as well as the highest salary costs per student credit hour--all greater than \$50--are budgeted to receive a smaller increase than the overall average. These four schools also received a smaller than average increase in 1980-81. This trend is encouraging to those who believe that Commonwealth appropriations have tended to subsidize inefficient operations.

TUITION AND PER-STUDENT APPROPRIATIONS

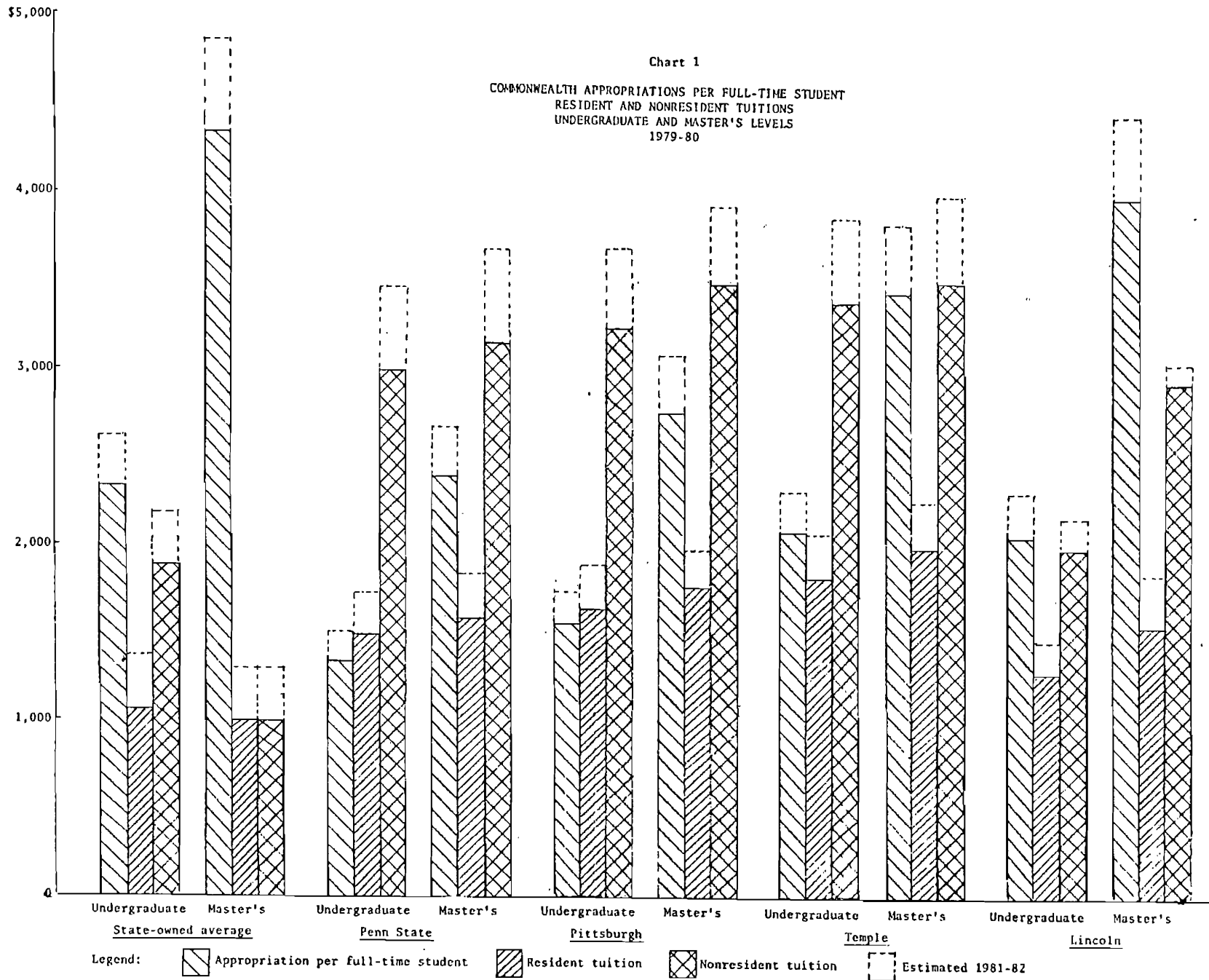
For public institutions of higher education, in addition to the Commonwealth appropriations the principal source of revenue to defray instructional cost is student tuition and fees. To permit a comparison of State appropriations and tuition the appropriations

2. Footnote in Governor's Executive Budget, 1981-82 (p. 249): "Distribution of the 1981-82 budgeted funds [to the State-owned institutions] is based on the allocation formula developed by the Department of Education. Final allocation of the 1981-82 State college and university appropriation will be made by the Department of Education based on the updated allocation formula, which may change the distribution of State funds by institution."

have been allocated on a per-student basis by level of instruction.³ The 1979-80 unit appropriation for the undergraduate and master's levels is shown in chart 1 with the corresponding resident and nonresident tuition. The estimated 1981-82 increases are indicated with broken lines. State-related universities appear individually on the chart and State-owned schools are treated in the aggregate. It should be kept in mind that the undergraduate relationship is by far the most significant in terms of dollars, since total undergraduate output is more than 11 times the master's level output.

There is no tuition distinction between lower- and upper-undergraduate divisions at either the State-owned or State-related schools as there is at some public universities in other states. All resident undergraduate students pay the same tuition and fees at any of the given institutions with the exception of slight differences among programs at Pittsburgh and Temple. Nonresident undergraduate students, regardless of level, pay a tuition ranging from 1.5 to 2 times that of the resident students. Resident student charges varied slightly among the State-owned schools in 1980-81, ranging from \$1,192 at Bloomsburg to \$1,254 at

3. The amount of appropriation attributed to an undergraduate student is calculated on the basis of 30 student credit hours and is an average, weighted in accordance with the lower- and upper-division student credit-hour distribution at the particular school or schools. The master's level graduate work cost is calculated at three times that of lower-division work on the basis of 24 student credit hours per student. At each level there is a small adjustment for appropriation per degree unit produced.



Shippensburg. Tuition for State-related schools for 1980-81 ranged from \$1,450 at Lincoln to \$2,068 at Temple. Appendix table 12A, pp. 84-85, displays tuition rates since 1976-77.

Chart 1 illustrates that at the State-owned schools the unit undergraduate appropriation is more than double the resident tuition and is \$455, or 24 percent, higher than the nonresident tuition. At the three large State-related universities the relationship between tuition and appropriation is to a great extent reversed. The resident tuition is slightly in excess of appropriation at two of the three schools. The nonresident tuition is more than 2 times the appropriation at two and 1.75 times the appropriation at the other.

The variation in the relationship of tuition and appropriation is much greater at the master's level where the average per-student Commonwealth appropriation to the State-owned schools is more than four times the average graduate student (resident and nonresident) tuition of \$994--less than the amount paid by the resident undergraduate student. At the State-related universities, the allocated master's level appropriation per student exceeds resident tuition at all four schools but is below nonresident tuition at all schools except Lincoln.

Allocated State appropriations plus tuition charges (weighted in accordance with resident/nonresident proportions) can be viewed as an approximation of total instructional costs per student. For 1979-80 at State-owned schools resident undergraduates paid about 30 percent and nonresidents about 54 percent of this total cost. Resident undergraduates at the State-related universities paid, in tuition, between

45 and 50 percent of total costs while nonresidents paid about 83 percent at Temple and approximately the full costs at Penn State and Pittsburgh. Both resident and nonresident graduate students pay only 19 percent of total costs at State-owned schools. Nonresident graduate students pay from 60 to 75 percent of total cost at State-related universities.

Over the past four years resident undergraduate tuition charges have increased 26 percent at State-owned schools and from 30 to 43 percent at the State-related universities. These increases are only slightly greater than appropriation increases at the State-owned schools but average more than 50 percent greater than appropriation increases at the State-related institutions.

In a change in policy, the State-owned schools in 1979-80 reduced the graduate tuition for nonresident students to the same level as resident tuition. Previously, nonresident graduate tuition was nearly double resident tuition. This policy, which continued for 1980-81, is apparently predicated upon the existence of excess graduate school capacity and is sensible only if the average additional instructional cost attributable to an additional student is no greater than the relatively low tuition charge. Otherwise, the taxpayers of the Commonwealth may be subsidizing the graduate education of out-of-State students to the full extent accorded residents. A thorough study should be made of the costs of graduate education to determine whether the policy of low nonresident tuition is wise before the policy becomes established practice and justified only by precedence.

APPENDIX

Appendix Table 1A

STUDENT CREDIT-HOUR AND DEGREE PRODUCTION
FOR STATE-RELATED AND STATE-OWNED COLLEGES AND UNIVERSITIES¹
1972-80

Institution	Total student credit-hour production							Number of degrees				
	Lower ² division	Upper ² division	Total undergraduate	Master's	First pro- fessional	Doctor's	Total graduate	Grand total	Bachelor's	Master's	First pro- fessional	Doctor's
State-related universities												
Penn State												
1972-73	--	--	1,232,262	--	n.a.	--	97,894	1,330,156	8,121	1,603	n.a.	490
1973-74	--	--	1,348,024	--	n.a.	--	137,727	1,485,751	7,647	1,582	n.a.	376
1974-75	--	--	1,430,197	--	n.a.	--	140,025	1,570,222	7,758	1,524	n.a.	404
1975-76	--	--	1,471,514	--	n.a.	--	142,019	1,613,533	8,283	1,416	n.a.	438
1976-77	810,514	661,399	1,471,913	85,914	n.a.	57,576	143,490	1,615,403	8,376	1,478	n.a.	393
1977-78	914,801	578,666	1,493,467	54,186	n.a.	58,997	113,183	1,606,650	8,251	1,432	n.a.	345
1978-79	907,567	576,134	1,483,701	49,053	n.a.	55,765	104,818	1,588,519	8,588	1,369	n.a.	383
1979-80	966,281	537,835	1,504,116	49,531	n.a.	56,377	105,908	1,610,024	8,319	1,247	n.a.	367
Pittsburgh												
1972-73	--	--	505,556	--	--	--	151,490	657,046	3,917	2,352	473	429
1973-74	--	--	595,342	--	--	--	205,339	800,681	3,951	2,038	254	411
1974-75	--	--	612,469	--	--	--	199,281	811,750	3,601	2,026	264	422
1975-76	--	--	649,028	--	--	--	197,597	846,625	3,752	2,155	234	376
1976-77	410,680	216,688	627,368	120,797	43,546	29,944	194,287	821,655	3,484	1,793	310	364
1977-78	403,662	200,025	603,687	129,868	43,297	28,768	201,933	805,620	3,606	2,061	340	389
1978-79	383,000	211,278	594,278	119,171	41,300	31,959	192,430	786,708	3,473	1,927	344	362
1979-80	386,034	212,195	598,229	123,297	43,431	33,304	200,032	798,261	3,429	1,894	336	374
Temple												
1972-73	--	--	458,555	--	--	--	157,369	615,924	3,335	2,200	-- ^a	195
1973-74	--	--	501,267	--	--	--	192,249	693,516	3,301	1,588	595	160
1974-75	--	--	515,407	--	--	--	196,765	712,172	3,386	1,368	665	250
1975-76	--	--	559,735	--	--	--	231,993	791,728	3,090	1,457	685	208
1976-77	356,827	245,595	602,422	118,580	132,419	19,614	270,613	873,035	3,264	1,516	644	227
1977-78	325,560	251,213	576,773	111,598	90,160	13,643	215,401	792,174	3,359	1,469	642	272
1978-79	294,449	242,087	536,536	113,076	95,537	9,102	217,715	754,251	3,139	1,556	656	237
1979-80	295,262	243,563	538,825	113,590	85,728	7,092	206,410	745,235	3,246	1,445	650	246
Lincoln												
1973-74	--	--	33,539	n.a.	n.a.	n.a.	n.a.	33,539	172	n.a.	n.a.	n.a.
1974-75	--	--	35,431	n.a.	n.a.	n.a.	n.a.	35,431	191	n.a.	n.a.	n.a.
1975-76	22,472	7,688	30,160	n.a.	n.a.	n.a.	n.a.	30,160	206	n.a.	n.a.	n.a.
1976-77	22,895	8,393	31,288	470	n.a.	n.a.	470	31,758	155	n.a.	n.a.	n.a.
1977-78	26,235	8,298	34,533	1,155	n.a.	n.a.	1,155	35,688	183	n.a.	n.a.	n.a.
1978-79	22,416	8,956	31,372	2,679	n.a.	n.a.	2,679	34,051	181	34	n.a.	n.a.
1979-80	27,625	8,594	36,219	4,924	n.a.	n.a.	4,924	41,143	162	29	n.a.	n.a.
State-owned colleges												
Bloomsburg												
1976-77	97,084	59,504	156,588	5,757	n.a.	n.a.	5,757	162,345	974	200	n.a.	n.a.
1977-78	108,121	65,952	174,073	12,004	n.a.	n.a.	12,004	186,077	1,048	209	n.a.	n.a.
1978-79	106,387	66,270	172,657	10,474	n.a.	n.a.	10,474	183,131	1,122	244	n.a.	n.a.
1979-80	112,142	64,122	176,264	11,791	n.a.	n.a.	11,791	188,055	1,074	237	n.a.	n.a.
California												
1976-77	82,986	32,273	115,259	6,616	n.a.	n.a.	6,616	121,875	822	207	n.a.	n.a.
1977-78	89,085	32,652	121,737	9,953	n.a.	n.a.	9,953	131,690	789	169	n.a.	n.a.
1978-79	81,312	33,891	115,203	8,843	n.a.	n.a.	8,843	124,046	761	165	n.a.	n.a.
1979-80	79,568	32,150	111,718	8,265	n.a.	n.a.	8,265	119,983	713	152	n.a.	n.a.
Cheyney												
1976-77	51,066	17,022	68,088	2,580	n.a.	n.a.	2,580	70,668	395	56	n.a.	n.a.
1977-78	58,527	19,650	78,177	3,395	n.a.	n.a.	3,395	81,572	390	38	n.a.	n.a.
1978-79	49,384	18,497	67,881	2,397	n.a.	n.a.	2,397	70,278	316	43	n.a.	n.a.
1979-80	49,376	19,172	68,548	2,066	n.a.	n.a.	2,066	70,614	318	30	n.a.	n.a.

Clarion												
1976-77	97,460	39,808	137,268	4,909	n.a.	n.a.	4,909	142,177	890	150	n.a.	n.a.
1977-78	102,856	40,843	143,699	6,230	n.a.	n.a.	6,230	149,929	881	165	n.a.	n.a.
1978-79	105,752	43,373	149,105	5,833	n.a.	n.a.	5,833	154,938	947	121	n.a.	n.a.
1979-80	113,056	39,604	152,730	4,986	n.a.	n.a.	4,986	157,716	881	120	n.a.	n.a.
East Stroudsburg												
1976-77	72,235	38,056	110,291	3,728	n.a.	n.a.	3,728	114,019	767	116	n.a.	n.a.
1977-78	78,866	38,395	117,261	8,810	n.a.	n.a.	8,810	126,071	765	73	n.a.	n.a.
1978-79	77,286	33,998	111,284	8,074	n.a.	n.a.	8,074	119,358	692	78	n.a.	n.a.
1979-80	79,707	33,575	113,282	7,679	n.a.	n.a.	7,679	120,961	686	80	n.a.	n.a.
Edinboro ³												
1976-77	111,979	57,139	169,118	13,353	n.a.	n.a.	13,353	182,471	1,053	310	n.a.	n.a.
1977-78	104,390	53,976	158,366	11,553	n.a.	n.a.	11,553	169,919	975	278	n.a.	n.a.
1978-79	102,742	48,642	151,384	10,509	n.a.	n.a.	10,509	161,893	911	273	n.a.	n.a.
1979-80	103,773	44,596	148,369	9,851	n.a.	n.a.	9,851	158,220	837	237	n.a.	n.a.
Indiana University ³												
1976-77	191,467	98,635	290,102	11,756	n.a.	-- ^a	11,756	301,858	2,149	594	n.a.	1
1977-78	220,848	111,532	332,380	19,317	n.a.	-- ^a	19,317	351,697	2,143	365	n.a.	4
1978-79	229,247	114,804	344,051	19,083	n.a.	-- ^a	19,083	363,134	2,225	366	n.a.	5
1979-80	236,403	111,630	348,033	19,817	n.a.	-- ^a	19,817	367,850	2,187	424	n.a.	18
Kutztown												
1976-77	79,634	44,795	124,429	4,836	n.a.	n.a.	4,836	129,265	842	203	n.a.	n.a.
1977-78	82,571	45,951	128,522	7,560	n.a.	n.a.	7,560	135,882	747	174	n.a.	n.a.
1978-79	82,783	43,310	126,093	7,422	n.a.	n.a.	7,422	133,515	773	146	n.a.	n.a.
1979-80	84,868	42,389	127,257	6,693	n.a.	n.a.	6,693	133,950	762	133	n.a.	n.a.
Lock Haven												
1976-77	51,055	18,883	69,938	n.a.	n.a.	n.a.	n.a.	69,938	419	n.a.	n.a.	n.a.
1977-78	51,793	18,720	70,513	n.a.	n.a.	n.a.	n.a.	70,513	460	n.a.	n.a.	n.a.
1978-79	51,498	16,049	67,547	n.a.	n.a.	n.a.	n.a.	67,547	390	n.a.	n.a.	n.a.
1979-80	55,666	15,828	71,494	n.a.	n.a.	n.a.	n.a.	71,494	395	n.a.	n.a.	n.a.
Mansfield												
1976-77	52,478	24,696	77,174	1,999	n.a.	n.a.	1,999	79,173	572	35	n.a.	n.a.
1977-78	51,412	23,229	74,641	3,109	n.a.	n.a.	3,109	77,750	531	31	n.a.	n.a.
1978-79	46,245	22,350	68,595	2,707	n.a.	n.a.	2,707	71,302	510	38	n.a.	n.a.
1979-80	51,260	20,174	71,434	3,795	n.a.	n.a.	3,795	75,229	448	49	n.a.	n.a.
Millersville												
1976-77	102,995	30,765	133,760	9,115	n.a.	n.a.	9,115	142,875	1,004	244	n.a.	n.a.
1977-78	113,078	34,936	148,014	17,179	n.a.	n.a.	17,179	165,193	938	240	n.a.	n.a.
1978-79	113,570	32,297	145,867	15,848	n.a.	n.a.	15,848	161,715	979	206	n.a.	n.a.
1979-80	116,299	32,366	148,665	15,464	n.a.	n.a.	15,464	164,129	885	188	n.a.	n.a.
Shippensburg												
1976-77	100,974	37,347	138,321	9,568	n.a.	n.a.	9,568	147,889	856	504	n.a.	n.a.
1977-78	106,700	37,848	144,548	16,057	n.a.	n.a.	16,057	160,605	899	416	n.a.	n.a.
1978-79	107,819	34,968	142,787	15,471	n.a.	n.a.	15,471	158,258	835	439	n.a.	n.a.
1979-80	107,785	37,897	145,682	13,841	n.a.	n.a.	13,841	159,523 ^b	1,018	371	n.a.	n.a.
Slippery Rock												
1976-77	114,155	46,626	160,781	5,288	n.a.	n.a.	5,288	166,069	1,059	155	n.a.	n.a.
1977-78	117,869	45,748	163,617	8,669	n.a.	n.a.	8,669	172,286	1,054	152	n.a.	n.a.
1978-79	110,706	44,635	155,341	7,815	n.a.	n.a.	7,815	163,156	912	132	n.a.	n.a.
1979-80	111,498	43,817	155,315	8,581	n.a.	n.a.	8,581	163,896	1,003	149	n.a.	n.a.
West Chester												
1976-77	127,831	68,832	196,663	12,568	n.a.	n.a.	12,568	209,231	1,207 ^c	369	n.a.	n.a.
1977-78	145,619	77,455	223,074	19,256	n.a.	n.a.	19,256	242,330	1,213 ^c	343	n.a.	n.a.
1978-79	151,009	69,022	220,031	18,146	n.a.	n.a.	18,146	238,177	1,572	271	n.a.	n.a.
1979-80	155,912	67,566	223,478	17,745	n.a.	n.a.	17,745	241,223	1,572	271	n.a.	n.a.

1. For the first reporting year for each institution, only academic-year student credit-hour production is shown. Data for each subsequent year represent the sum of student credit-hour production for the summer term preceding the academic year plus the academic year production. This represents a change in previous Commission staff reports, in which student credit-hour production for the following summer term was added to the academic-year production. See footnote 3 for special treatment of Edinboro.

2. Lower-division/upper-division breakdown for State-owned institutions for 1976-77 based on 1977-78 distribution.

3. Edinboro student credit-hour data for fiscal years 1976-77 through 1978-79 and Indiana data for fiscal year 1979-80 from "State College and University Budgeting System Common Cost Accounting Reports," fiscal years 1976-77, 1977-78 and 1978-79.

a. Included in master's level.

b. Does not include 1,999 student credit hours generated by Shippensburg.

c. Underestimate.

n.a. Not applicable.

SOURCE: Student credit-hour and degree reports provided by the individual institutions, 1973 through 1980.

Appendix Table 2A

FALL SECONDARY SCHOOL ENROLLMENTS IN PUBLIC AND NONPUBLIC SCHOOLS BY GRADE LEVEL:
ACTUAL 1970 THROUGH 1979 AND PROJECTED 1980 THROUGH 1989

8	Elementary Exceptional (Ungraded)	Total Secondary Enrollment	SECONDARY GRADE						Secondary Exceptional (Ungraded)	Post- graduate	Fall
			7	8	9	10	11	12			
											1970
44 868	39 863	1 229 243	186 130	187 191	225 248	217 558	204 133	188 071	19 472	1 440	Total Enrollment
1 097	34 663	1 099 570	184 868	185 825	191 398	185 610	173 193	158 647	18 729	1 300	Public
43 771	5 200	129 673	1 262	1 366	33 850	31 948	30 940	29 424	743	140	Nonpublic
											1971
42 358	39 120	1 248 100	187 934	187 735	231 678	225 719	201 509	190 915	21 885	725	Total Enrollment
1 028	33 839	1 121 826	186 678	186 299	199 527	195 062	172 226	161 513	20 124	397	Public
41 330	5 281	126 274	1 256	1 436	32 151	30 657	29 283	29 402	1 761	328	Nonpublic
											1972
39 825	41 232	1 258 263	186 675	187 573	228 913	230 214	207 451	187 271	29 585	581	Total Enrollment
721	35 522	1 136 326	185 291	185 959	198 617	200 381	179 134	159 150	27 596	198	Public
39 104	5 710	121 937	1 384	1 614	30 296	29 833	28 317	28 121	1 989	383	Nonpublic
											1973
38 024	42 114	1 260 599	185 384	185 931	226 311	226 829	210 934	193 060	30 795	1 355	Total Enrollment
387	36 259	1 137 660	183 767	184 087	195 507	197 857	182 408	165 485	28 119	430	Public
37 637	5 855	122 939	1 617	1 844	30 804	28 972	28 526	27 575	2 676	925	Nonpublic
											1974
37 334	38 978	1 250 541	179 104	185 467	224 870	225 184	208 854	195 885	30 230	947	Total Enrollment
393	33 241	1 127 818	177 188	183 088	193 885	195 724	181 219	168 291	28 052	371	Public
36 941	5 737	122 723	1 916	2 379	30 985	29 460	27 635	27 594	2 178	576	Nonpublic
											1975
35 032	42 148	1 238 628	177 336	178 492	224 385	224 053	207 508	194 868	31 332	654	Total Enrollment
262	35 380	1 116 696	175 131	176 151	193 355	194 475	179 713	168 250	29 233	388	Public
34 770	6 768	121 932	2 205	2 341	31 030	29 578	27 795	26 618	2 099	266	Nonpublic
											1976
34 323	41 666	1 221 762	176 027	176 591	215 746	222 058	205 791	192 522	32 468	559	Total Enrollment
1	35 440	1 100 095	173 723	174 056	186 020	192 617	177 579	165 663	30 179	258	Public
34 322	6 226	121 667	2 304	2 535	29 726	29 441	28 212	26 859	2 289	301	Nonpublic
											1977
33 091	42 576	1 194 563	166 729	174 561	213 136	212 046	202 996	189 486	35 081	528	Total Enrollment
4	36 506	1 074 833	164 295	171 862	183 933	184 147	175 190	162 557	32 502	347	Public
33 087	6 070	119 730	2 434	2 699	29 203	27 899	27 806	26 929	2 579	181	Nonpublic
											1978
31 742	41 416	1 154 937	158 129	164 581	210 705	208 346	192 412	187 033	33 277	454	Total Enrollment
2	36 166	1 038 082	155 817	162 080	181 966	180 793	165 895	160 445	30 794	292	Public
31 740	5 250	116 855	2 312	2 501	28 739	27 553	26 517	26 588	2 483	162	Nonpublic
											1979
30 034	42 522	1 114 917	151 421	156 142	199 988	205 152	188 420	178 071	35 345	378	Total Enrollment
6	37 667	1 000 476	148 865	153 486	172 480	177 926	162 286	152 855	32 348	230	Public
30 028	4 855	114 441	2 556	2 656	27 508	27 226	26 134	25 216	2 997	148	Nonpublic
											PROJECTED
											1980
29 100	42 400	1 077 900	145 300	149 800	189 000	196 800	187 300	174 500	34 800	400	Total Enrollment
-	37 700	968 100	143 200	147 200	162 900	170 800	161 800	149 700	32 200	300	Public
29 100	4 700	109 800	2 100	2 600	26 100	26 000	25 500	24 800	2 600	100	Nonpublic
											1981
28 900	42 100	1 041 900	143 900	143 800	181 600	185 900	179 700	172 400	34 200	400	Total Enrollment
-	37 400	936 000	141 800	141 600	156 200	161 200	155 100	148 100	31 700	300	Public
28 900	4 700	105 900	2 100	2 200	25 400	24 700	24 600	24 300	2 500	100	Nonpublic
											1982
28 800	41 300	1 010 000	146 800	139 100	175 300	178 700	169 700	166 300	33 700	400	Total Enrollment
-	36 700	907 500	144 700	137 500	150 200	154 600	146 300	142 700	31 200	300	Public
28 800	4 600	102 500	2 100	1 600	25 100	24 100	23 400	23 600	2 500	100	Nonpublic
											1983
29 600	40 800	982 400	140 500	145 300	170 400	172 400	163 100	157 200	33 200	300	Total Enrollment
-	36 300	881 900	138 400	143 100	145 900	148 600	140 300	134 700	30 700	200	Public
29 600	4 500	100 500	2 100	2 200	24 500	23 800	22 800	22 500	2 500	100	Nonpublic
											1984
28 600	40 700	951 200	128 200	139 100	177 500	165 300	157 400	151 100	32 300	300	Total Enrollment
-	36 200	851 300	126 200	136 800	151 800	142 300	134 900	129 200	29 900	200	Public
28 600	4 500	99 900	2 000	2 300	25 700	23 000	22 500	21 900	2 400	100	Nonpublic
											1985
27 000	40 900	919 700	119 500	126 900	170 200	174 700	150 900	145 800	31 400	300	Total Enrollment
-	36 400	820 500	117 600	124 800	145 200	150 200	129 200	124 200	29 100	200	Public
27 000	4 500	99 200	1 900	2 100	25 000	24 500	21 700	21 600	2 300	100	Nonpublic
											1986
25 000	41 200	839 600	117 800	118 200	156 100	167 500	159 500	139 700	30 500	300	Total Enrollment
-	36 600	791 900	115 900	116 200	132 400	143 700	136 400	118 900	28 200	200	Public
25 000	4 600	97 700	1 900	2 000	23 700	23 800	23 100	20 800	2 300	100	Nonpublic
											1987
23 500	41 600	862 500	115 700	116 600	146 000	153 700	152 900	147 700	29 600	300	Total Enrollment
-	37 000	766 300	113 800	114 500	123 400	131 100	130 400	125 500	27 400	200	Public
23 500	4 600	96 200	1 900	2 100	22 600	22 600	22 500	22 200	2 200	100	Nonpublic
											1988
25 200	42 200	825 300	115 000	111 900	144 200	143 700	140 300	141 600	28 300	300	Total Enrollment
-	37 500	731 300	113 100	110 400	121 600	120 700	119 000	120 100	26 200	200	Public
25 200	4 700	94 000	1 900	1 500	22 600	23 000	21 300	21 500	2 100	100	Nonpublic
											1989
25 000	42 500	803 100	119 200	113 900	139 200	141 900	131 200	129 900	27 500	300	Total Enrollment
-	37 800	712 600	117 200	111 800	117 300	119 200	111 200	110 200	25 500	200	Public
25 000	4 700	90 500	2 000	2 100	21 900	22 700	20 000	19 700	2 000	100	Nonpublic

SOURCE: Reproduced from Pa. Department of Education, Projections: Selected Education Statistics for Pennsylvania to 1989-90 (1980).

Appendix Table 3A

PUBLIC AND NONPUBLIC HIGH SCHOOL GRADUATES AND THOSE CONTINUING FORMAL STUDY BY NUMBER AND PERCENT:
ACTUAL 1971 THROUGH 1979 AND PROJECTED 1980 THROUGH 1990^{1/}

Year of High School Graduation	Number of High School Graduates	Total Continuing Formal Study		College or University ^{2/}		Other Schools ^{3/}	
		Number	Percent	Number	Percent	Number	Percent
<u>1971</u>							
All Graduates	182 690	99 840	54.7	82 729	45.3	17 111	9.4
Public	153 568	81 063	52.8	66 307	43.2	14 756	9.6
Nonpublic	29 122	18 777	64.5	16 422	56.4	2 355	8.1
<u>1972</u>							
All Graduates	186 569	97 816	52.4	81 906	43.9	15 910	8.5
Public	157 415	79 249	50.3	65 648	41.7	13 601	8.6
Nonpublic	29 154	18 567	63.7	16 258	55.8	2 309	7.9
<u>1973</u>							
All Graduates	181 621	90 451	49.8	76 734	42.2	13 717	7.6
Public	154 045	73 311	47.6	61 574	40.0	11 737	7.6
Nonpublic	27 576	17 140	62.2	15 160	55.0	1 980	7.2
<u>1974</u>							
All Graduates	187 296	90 381	48.3	78 128	41.7	12 253	6.6
Public	159 934	73 549	46.0	63 140	39.5	10 409	6.5
Nonpublic	27 362	16 832	61.5	14 988	54.8	1 844	6.7
<u>1975</u>							
All Graduates	189 955	93 858	49.4	80 860	42.6	12 998	6.8
Public	163 124	76 356	46.8	65 229	40.0	11 127	6.8
Nonpublic	26 831	17 502	65.2	15 631	58.2	1 871	7.0
<u>1976</u>							
All Graduates	190 093	92 213	48.5	79 404	41.8	12 809	6.7
Public	163 812	75 425	46.0	64 354	39.3	11 071	6.7
Nonpublic	26 281	16 788	63.9	15 050	57.3	1 738	6.6
<u>1977</u>							
All Graduates	186 936	90 481	48.4	78 524	42.0	11 957	6.4
Public	160 665	74 214	46.2	63 851	39.7	10 363	6.5
Nonpublic	26 271	16 267	61.9	14 673	55.8	1 594	6.1
<u>1978</u>							
All Graduates	183 132	88 861	48.5	76 900	42.0	11 961	6.5
Public	156 918	72 056	45.9	61 853	39.4	10 203	6.5
Nonpublic	26 214	16 805	64.1	15 047	57.4	1 758	6.7
<u>1979</u>							
All Graduates	181 480	90 155	49.7	78 159	43.1	11 996	6.6
Public	155 442	73 033	47.0	62 771	40.4	10 262	6.6
Nonpublic	26 038	17 122	65.8	15 388	59.1	1 734	6.7
<u>P R O J E C T E D</u>							
<u>1980</u>							
All Graduates	172 700	83 900	48.5	72 600	42.0	11 300	6.5
Public	148 200	68 200	46.0	58 500	39.5	9 700	6.5
Nonpublic	24 500	15 700	64.2	14 100	57.6	1 600	6.6
<u>1981</u>							
All Graduates	169 200	82 100	48.5	71 100	42.0	11 000	6.5
Public	145 400	66 900	46.0	57 400	39.5	9 500	6.5
Nonpublic	23 800	15 200	64.0	13 700	57.4	1 500	6.6
<u>1982</u>							
All Graduates	167 300	81 100	48.5	70 300	42.0	10 800	6.5
Public	143 900	66 100	45.9	56 800	39.5	9 300	6.4
Nonpublic	23 400	15 000	64.2	13 500	57.6	1 500	6.6
<u>1983</u>							
All Graduates	161 400	78 200	48.5	67 800	42.0	10 400	6.4
Public	138 600	63 600	45.9	54 700	39.5	8 900	6.4
Nonpublic	22 800	14 600	64.0	13 100	57.4	1 500	6.6
<u>1984</u>							
All Graduates	152 500	73 700	48.3	64 000	42.0	9 700	6.3
Public	130 800	59 800	45.7	51 500	39.4	8 300	6.3
Nonpublic	21 700	13 900	64.2	12 500	57.6	1 400	6.6
<u>1985</u>							
All Graduates	146 500	70 800	48.3	61 500	42.0	9 300	6.3
Public	125 400	57 300	45.7	49 400	39.4	7 900	6.3
Nonpublic	21 100	13 500	64.0	12 100	57.4	1 400	6.6
<u>1986</u>							
All Graduates	141 400	68 100	48.2	59 300	41.9	8 800	6.3
Public	120 600	54 900	45.5	47 400	39.3	7 500	6.2
Nonpublic	20 800	13 200	63.7	11 900	57.0	1 300	6.7
<u>1987</u>							
All Graduates	135 500	65 300	48.2	56 800	41.9	8 500	6.3
Public	115 500	52 600	45.5	45 400	39.3	7 200	6.2
Nonpublic	20 000	12 700	63.7	11 400	56.8	1 300	6.9
<u>1988</u>							
All Graduates	143 300	68 800	48.0	59 900	41.8	8 900	6.2
Public	121 900	55 200	45.3	47 800	39.2	7 400	6.1
Nonpublic	21 400	13 600	63.5	12 100	56.6	1 500	6.9
<u>1989</u>							
All Graduates	137 300	65 800	47.9	57 400	41.8	8 400	6.1
Public	116 600	52 800	45.3	45 700	39.2	7 100	6.1
Nonpublic	20 700	13 000	63.0	11 700	56.4	1 300	6.6
<u>1990</u>							
All Graduates	126 000	60 000	47.6	52 400	41.6	7 600	6.0
Public	106 900	48 100	45.0	41 700	39.0	6 400	6.0
Nonpublic	19 100	11 900	62.5	10 700	56.2	1 200	6.3

1/ Educational activities are reported as of October 1 following graduation.

2/ Includes business or technical schools granting an associate in specialized technology and an associate in specialized business.

3/ Includes nondegree-granting schools for business, nursing and trades.

SOURCE: Reproduced from Pa. Department of Education, Projections: Selected Education Statistics for Pennsylvania to 1989-90 (1980).

Appendix Table 4A

FALL ENROLLMENTS IN INSTITUTIONS OF HIGHER EDUCATION BY INSTITUTIONAL CATEGORY BY ENROLLMENT STATUS:
ACTUAL 1970 THROUGH 1979 AND PROJECTED 1980 THROUGH 1989

Fall	All Institutions	State Colleges and University	State-Related Commonwealth Universities	Community Colleges	Private Institutions	Proprietary Schools and State School of Technology
1970						
Total Enrollment	411 053	72 776	119 741	40 890	177 646	-
Full-time Students	291 328	59 988	73 124	25 935	132 281	-
Part-time Students	119 725	12 788	46 617	14 955	45 365	-
1971						
Total Enrollment	432 536	74 863	123 241	48 815	179 837	5 780
Full-time Students	308 803	61 583	77 683	29 376	134 635	5 526
Part-time Students	123 733	13 280	45 558	19 439	45 202	254
1972						
Total Enrollment	437 920	76 214	123 781	50 675	179 372	7 878
Full-time Students	312 920	62 554	79 612	29 069	134 117	7 568
Part-time Students	125 000	13 660	44 169	21 606	45 255	310
1973						
Total Enrollment	448 629	76 899	130 153	54 449	179 263	7 865
Full-time Students	314 460	61 897	82 790	30 615	131 615	7 543
Part-time Students	134 169	15 002	47 363	23 834	47 648	322
1974						
Total Enrollment	455 367	78 172	130 695	59 737	179 114	7 649
Full-time Students	317 307	61 929	85 180	31 860	130 922	7 416
Part-time Students	138 060	16 243	45 515	27 877	48 192	233
1975						
Total Enrollment	480 863	80 065	139 300	68 071	184 177	9 250
Full-time Students	329 408	63 823	88 708	34 485	133 438	8 954
Part-time Students	151 455	16 242	50 592	33 586	50 739	296
1976						
Total Enrollment	488 310	79 807	138 722	69 081	186 096	14 604
Full-time Students	336 814	62 165	90 142	34 054	136 476	13 977
Part-time Students	151 496	17 642	48 580	35 027	49 620	627
1977						
Total Enrollment	489 373	78 538	132 696	73 612	191 705	12 822
Full-time Students	338 890	62 903	90 920	33 250	139 423	12 394
Part-time Students	150 483	15 635	41 776	40 362	52 282	428
1978						
Total Enrollment	487 454	76 597	128 683	74 945	194 726	12 503
Full-time Students	334 423	60 790	88 816	31 136	141 828	11 853
Part-time Students	153 031	15 807	39 867	43 809	52 898	650
1979						
Total Enrollment	498 173	76 878	128 667	76 698	199 407	16 523
Full-time Students	341 349	61 012	89 578	31 351	143 848	15 560
Part-time Students	156 824	15 866	39 089	45 347	55 559	963
P R O J E C T E D						
1980						
Total Enrollment	499 900	76 500	128 500	78 200	200 100	16 600
Full-time Students	342 500	60 700	89 300	32 500	144 400	15 600
Part-time Students	157 400	15 800	39 200	45 700	55 700	1 000
1981						
Total Enrollment	497 100	75 600	127 100	79 900	198 000	16 500
Full-time Students	336 800	59 500	87 600	32 400	141 900	15 400
Part-time Students	160 300	16 100	39 500	47 500	56 100	1 100
1982						
Total Enrollment	491 500	75 000	125 500	80 000	194 900	16 100
Full-time Students	329 700	58 600	85 900	31 900	138 400	14 900
Part-time Students	161 800	16 400	39 600	48 100	56 500	1 200
1983						
Total Enrollment	485 400	73 800	123 500	80 700	191 600	15 800
Full-time Students	321 000	57 100	84 800	30 900	133 700	14 500
Part-time Students	164 400	16 700	38 700	49 800	57 900	1 300
1984						
Total Enrollment	477 300	72 300	121 400	80 900	187 200	15 500
Full-time Students	308 400	54 000	82 400	29 100	128 900	14 000
Part-time Students	168 900	18 300	39 000	51 800	58 300	1 500
1985						
Total Enrollment	469 500	70 500	119 000	81 000	184 000	15 000
Full-time Students	297 200	52 000	78 400	28 100	125 300	13 400
Part-time Students	172 300	18 500	40 600	52 900	58 700	1 600
1986						
Total Enrollment	459 300	68 500	116 000	80 800	179 500	14 500
Full-time Students	285 000	50 100	75 200	25 900	121 000	12 800
Part-time Students	174 300	18 400	40 800	54 900	58 500	1 700
1987						
Total Enrollment	451 400	67 500	114 100	80 800	175 000	14 000
Full-time Students	276 300	49 200	72 700	24 600	117 300	12 500
Part-time Students	175 100	18 300	41 400	56 200	57 700	1 500
1988						
Total Enrollment	444 700	66 200	112 500	80 500	171 900	13 600
Full-time Students	271 100	48 600	72 000	24 000	114 400	12 100
Part-time Students	173 600	17 600	40 500	56 500	57 500	1 500
1989						
Total Enrollment	438 700	65 500	110 400	80 200	169 600	13 000
Full-time Students	266 100	47 900	70 900	23 400	112 300	11 600
Part-time Students	172 600	17 600	39 500	56 800	57 300	1 400

SOURCE: Reproduced from Pa. Department of Education, Projections: Selected Education Statistics for Pennsylvania to 1989-90 (1980).

Appendix Table 5A

Table 75.—Residence and migration of college students, by State: Fall 1975

State or other area	Students enrolled ¹	Student residents ²	Students remaining ³	Ratio of students remaining to—		Migration of students		
				Students enrolled	Student residents	Out of	Into	Net (col. 8—col. 7)
1	2	3	4	5	6	7	8	9
United States	11,179,610	10,961,075	9,286,814	0.83	0.85	1,674,261	1,892,796	⁴ 218,535
Alabama	164,526	156,900	137,000	.83	.87	19,900	27,526	7,626
Alaska	13,931	17,696	13,102	.94	.74	4,594	829	-3,765
Arizona	174,725	138,111	121,467	.70	.88	16,644	53,258	36,614
Arkansas	65,254	68,462	54,153	.83	.79	14,309	11,101	-3,208
California	1,789,179	1,621,546	1,542,077	.86	.95	79,469	247,102	167,633
Colorado	150,730	131,686	107,257	.71	.81	24,429	43,473	19,044
Connecticut	148,177	177,204	120,283	.81	.68	56,921	27,894	-29,027
Delaware	32,515	32,567	23,275	.72	.71	9,292	9,240	-52
District of Columbia	84,394	40,669	23,966	.28	.59	16,703	60,428	43,725
Florida	340,772	334,222	283,043	.83	.85	51,179	57,729	6,550
Georgia	173,537	165,322	136,266	.79	.82	29,056	37,271	8,215
Hawaii	47,128	46,480	35,551	.75	.76	10,929	11,577	648
Idaho	39,230	36,710	26,828	.68	.73	9,882	12,402	2,520
Illinois	584,122	614,141	513,759	.88	.84	100,382	70,363	-30,019
Indiana	213,755	203,635	165,319	.77	.81	38,316	48,436	10,120
Iowa	122,051	123,796	93,425	.77	.75	30,371	28,626	-1,745
Kansas	119,963	119,150	98,086	.82	.82	21,064	21,877	813
Kentucky	125,364	120,668	102,394	.82	.85	18,274	22,970	4,696
Louisiana	152,307	144,971	128,062	.84	.88	16,909	24,245	7,336
Maine	40,885	40,193	29,768	.73	.74	10,425	11,117	692
Maryland	205,625	223,588	166,819	.81	.75	56,769	38,806	-17,963
Massachusetts	385,019	351,373	286,547	.74	.82	64,826	98,472	33,646
Michigan	496,415	492,775	450,588	.91	.91	42,187	45,827	3,640
Minnesota	182,417	181,326	150,533	.83	.83	30,793	31,884	1,091
Mississippi	99,953	102,145	88,713	.89	.87	13,432	11,240	-2,192
Missouri	224,167	221,615	185,218	.83	.84	36,397	38,949	2,552
Montana	30,672	32,406	24,532	.80	.76	7,874	6,140	-1,734
Nebraska	74,694	73,165	59,568	.80	.81	13,597	15,126	1,529
Nevada	30,216	30,823	24,228	.80	.79	6,595	5,988	-607
New Hampshire	40,941	35,825	21,685	.53	.61	14,140	19,256	5,116
New Jersey	296,655	395,539	267,966	.90	.68	127,573	28,689	-98,884
New Mexico	52,979	55,056	40,778	.77	.74	14,278	12,201	-2,077
New York	1,007,280	1,068,401	899,442	.89	.84	168,959	107,838	-61,121
North Carolina	254,781	234,093	207,734	.82	.89	26,359	47,047	20,688
North Dakota	29,766	31,031	24,030	.81	.77	7,001	5,736	-1,265
Ohio	437,644	451,601	376,055	.86	.83	75,546	61,589	-13,957
Oklahoma	147,168	140,759	122,189	.83	.87	18,570	24,979	6,409
Oregon	145,152	135,443	114,995	.79	.85	20,448	30,157	9,709
Pennsylvania	470,539	497,920	397,612	.85	.80	100,308	72,927	-27,381
Rhode Island	64,612	57,049	45,132	.70	.79	11,917	19,480	7,563
South Carolina	135,382	134,369	115,828	.86	.86	18,541	19,554	1,013
South Dakota	31,215	31,253	23,553	.75	.75	7,700	7,662	-38
Tennessee	181,863	167,777	143,412	.79	.85	24,365	38,451	14,086
Texas	625,447	594,349	550,751	.88	.93	43,598	74,696	31,098
Utah	87,629	66,240	58,075	.66	.88	8,165	29,554	21,389
Vermont	29,269	22,098	14,836	.51	.67	7,262	14,433	7,171
Virginia	246,241	241,472	188,815	.77	.78	52,657	57,426	4,769
Washington	227,256	224,136	198,472	.87	.89	25,864	28,784	3,120
West Virginia	79,517	74,514	61,186	.77	.82	13,328	18,331	5,003
Wisconsin	241,549	240,589	209,612	.87	.87	30,977	31,937	960
Wyoming	18,027	18,216	12,829	.71	.70	5,387	5,198	-189
U.S. Service Schools ⁵	16,975	---	---	---	---	---	16,975	16,975
Outlying areas	109,827	114,952	102,732	.94	.89	12,220	7,095	-5,125

¹"Students enrolled" are students reported by the institution attended; i.e., all immigrants and "remaining" students (includes foreign students).

²"Student residents" are all students from a State regardless of where they attend school.

³"Students remaining" are students who attend institutions in their home State.

⁴The immigration exceeds the outmigration by the number of students enrolled from outside the United States.

⁵Enrollments in service schools are not included in the State totals in column 2; they are, however, included in the total for the United States. Students enrolled at the service schools are included in column 3 according to their State of residence.

SOURCE: U.S. Department of Health, Education, and Welfare, National Center for Education Statistics, *Migration of College Students*.

Reproduced from National Center for Education Statistics, *Digest of Education Statistics 1980* (U.S. Government Printing Office: Washington, D.C., May 1980).

Appendix Table 6A

STUDENT CREDIT HOURS PRODUCED BY LEVEL AND BY AREA OF STUDY
1979-80
(000's)

Program	Penn State		Pittsburgh		Temple		Lincoln		Bloomsburg		California		Cheyney ¹		Clarion		East Stroudsburg	
	Under-grad.	Graduate	Under-grad.	Graduate	Under-grad.	Graduate	Under-grad.	Graduate	Under-grad.	Graduate	Under-grad.	Graduate	Under-grad.	Graduate	Under-grad.	Graduate	Under-grad.	Graduate
Agriculture & natural resources	43.3	5.6	--	--	4.0	-- ^a	--	--	--	--	--	--	--	--	--	--	--	--
Architecture & environmental design	10.3	.1	--	--	.7	-- ^a	--	--	--	--	--	--	--	--	--	--	--	--
Area studies	--	--	--	--	3.4	.1	--	--	--	--	--	--	--	--	--	--	--	--
Biological sciences	72.8	3.5	13.4	2.2	11.2	1.3	2.9	--	8.0	.2	6.4	.4	2.7	-- ^a	6.5	.7	7.7	.3
Business & management	133.3	9.7	6.3	22.3	95.0	31.2	3.9	--	29.2	.7	10.1	--	7.5	--	37.6	.6	--	--
Communications	11.8	.3	--	--	29.1	2.0	--	--	--	--	--	--	--	--	3.6	.7	--	--
Computer & information sciences	29.8	1.1	16.6	10.2	9.7	3.2	--	--	--	--	--	--	--	--	1.5	--	--	--
Education	102.8	22.6	22.9	39.7	50.9	49.1	4.6	--	32.9	10.2	27.6	5.5	13.6	1.6	19.3	1.9	33.1	6.3
Engineering	164.4	11.8	53.3	12.8	20.7	.2	--	--	--	--	--	--	--	--	--	--	--	--
Fine & applied arts	58.3	3.5	13.3	.8	46.8	7.2	1.4	--	7.9	.1	5.3	.1	8.6	--	12.5	--	6.4	.4
Foreign languages	44.9	1.9	16.6	1.4	13.9	1.1	1.6	--	4.0	-- ^a	2.0	--	--	--	3.0	--	3.0	--
Health professions	9.0	.6	42.1	43.0	13.0	57.7	--	--	4.7	--	--	--	--	--	1.2	--	2.9	--
Home economics	14.5	.7	--	--	--	--	--	--	--	--	--	--	1.6	--	--	--	--	--
Law	--	--	.1	17.9	--	28.1	--	--	--	--	--	--	--	--	--	--	--	--
Letters	185.6	5.6	76.3	7.5	72.8	6.4	6.3	--	24.3	.2	16.2	.3	7.3	.2	15.6	.1	14.3	-- ^a
Library science	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1.1	.8	--	--
Mathematics	145.8	4.2	35.8	1.5	26.6	.7	4.9	--	12.0	.1	11.4	.6	6.5	--	11.3	.1	7.5	-- ^a
Military science	3.0	--	.8	--	.2	--	--	--	.2	--	1.2	--	--	--	1.5	--	.3	--
Physical sciences	149.4	12.6	42.7	6.7	23.9	1.9	2.2	--	6.6	.1	10.1	.5	3.7	--	6.2	-- ^a	9.8	.1
Psychology	40.2	2.2	35.3	2.5	24.4	3.0	1.7	--	10.1	.1	7.6	.7	--	--	9.2	--	4.3	-- ^a
Public affairs & services	53.1	8.5	20.2	18.3	13.4	8.1	--	--	--	--	--	--	--	--	--	--	1.1	--
Social sciences	163.7	6.6	117.4	10.6	62.0	4.9	6.8	--	36.6	.2	13.3	.1	17.1	.2	21.6	-- ^a	22.6	.5
Interdisciplinary studies	68.2	4.6	85.1	2.7	17.2	.2	--	4.9	--	--	.5	--	--	--	1.0	--	.2	--
Total	1,504.1	105.9	598.2	200.0	538.8	206.4	36.2	4.9	176.3	11.8	111.7	8.3	68.5	2.1	152.7	5.0	113.3	7.7

Program	Edinboro		Indiana		Kutztown		Lock Haven		Mansfield		Millersville		Shippensburg		Slippery Rock		West Chester	
	Under-grad.	Graduate	Under-grad.	Graduate	Under-grad.	Graduate	Under-grad.	Graduate	Under-grad.	Graduate	Under-grad.	Graduate	Under-grad.	Graduate	Under-grad.	Graduate	Under-grad.	Graduate
Agriculture & natural resources	--	--	--	--	--	--	--	n.a.	--	--	--	--	--	--	--	--	--	--
Architecture & environmental design	--	--	--	--	--	--	--	n.a.	--	--	--	--	--	--	--	--	--	--
Area studies	--	--	--	--	--	--	--	n.a.	--	--	--	--	--	--	--	--	--	--
Biological sciences	7.5	.5	18.0	.5	8.6	.3	2.3	n.a.	3.8	--	7.3	.3	7.1	.2	6.8	.5	7.9	.3
Business & management	10.0	--	53.0	2.5	10.8	--	--	n.a.	5.3	--	--	--	33.0	2.7	--	--	18.4	--
Communications	--	--	--	--	1.4	-- ^a	--	n.a.	--	--	--	--	4.3	.4	--	--	--	--
Computer & information sciences	--	--	5.3	.1	--	--	--	n.a.	--	--	--	--	--	--	--	--	--	--
Education	20.5	6.1	40.7	10.6	21.5	3.1	18.0	n.a.	10.3	3.1	31.8	10.2	11.2	6.8	31.5	6.5	43.9	8.4
Engineering	--	--	--	--	--	--	--	n.a.	--	--	--	--	--	--	--	--	--	--
Fine & applied arts	17.6	.4	23.2	.8	15.8	.2	3.9	n.a.	7.1	.2	13.7	.4	6.3	.1	8.8	--	24.0	2.3
Foreign languages	3.2	--	14.9	-- ^a	3.7	.2	2.1	n.a.	1.9	--	7.5	.7	2.4	--	3.1	--	7.5	.3
Health professions	2.9	.3	7.1	--	--	--	--	n.a.	--	--	.4	--	--	--	7.8	.2	4.6	.8
Home economics	--	--	15.2	.6	--	--	--	n.a.	3.9	.1	--	--	--	--	--	--	--	--
Law	--	--	--	--	--	--	--	n.a.	--	--	--	--	--	--	--	--	--	--
Letters	24.6	.2	44.3	1.2	14.6	.3	13.2	n.a.	12.1	-- ^a	19.4	.4	15.6	.3	26.7	.5	33.2	.8
Library science	.5	-- ^a	--	--	.8	.3	--	n.a.	--	--	--	--	.9	.5	--	--	--	--
Mathematics	13.9	.2	21.9	.7	8.1	.3	7.7	n.a.	6.0	-- ^a	14.5	.4	11.8	.1	10.2	--	16.5	.5
Military science	--	--	3.1	--	--	--	.2	n.a.	--	--	--	--	--	.3	--	--	--	--
Physical sciences	11.1	.1	19.7	.5	4.2	--	4.4	n.a.	3.7	-- ^a	13.6	.1	5.9	.2	10.0	.1	15.2	.8
Psychology	8.5	1.4	13.9	.7	8.5	1.3	5.8	n.a.	4.5	.3	8.4	2.4	10.0	.9	6.6	--	8.3	1.6
Public affairs & services	--	--	--	--	--	--	--	n.a.	2.3	-- ^a	2.0	--	5.3	--	7.8	.5	7.1	.9
Social sciences	23.2	.3	67.8	1.6	29.2	.5	13.7	n.a.	9.8	-- ^a	29.2	.5	31.9	1.7	34.9	.2	29.8	.7
Interdisciplinary studies	4.8	.3	--	--	--	.1	.2	n.a.	.8	--	.8	--	--	--	.8	-- ^a	7.2	.4
Total	148.4	9.9	348.0	19.8	127.3	6.7	71.5	n.a.	71.4	3.8	148.7	15.5	145.7	13.8	155.3	8.6	223.5	17.7

1. Student credit hours could not be distributed in proper classification due to nonspecification of student credit hour data submitted.

a. Rounds to less than 100 student credit hours.

n.a. Not applicable.

NOTE: Total student credit hours may not be sum of student credit hours by area due to rounding.

SOURCE: Pa. Department of Education, Division of Education Statistics, printout for "Bachelor's and Higher Degrees Conferred by Major Subject Area and Institution," (1978-79).

Appendix Table 7A

DEGREES GRANTED BY LEVEL AND BY AREA OF STUDY
1978-79

Program	Penn State		Pittsburgh		Temple		Lincoln		Bloomsburg		California		Cheyney		Clarion		East Stroudsburg	
	Under-grad.	Grad-uate	Under-grad.	Grad-uate	Under-grad.	Grad-uate	Under-grad.	Grad-uate	Under-grad.	Grad-uate	Under-grad.	Grad-uate	Under-grad.	Grad-uate	Under-grad.	Grad-uate	Under-grad.	Grad-uate
Agriculture & natural resources	721	107	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Architecture & environmental design	112	24	--	26	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Area studies	16	7	--	--	9	--	--	--	--	--	--	--	--	--	--	--	--	--
Biological sciences	458	111	222	31	47	37	23	--	50	4	19	3	12	--	56	9	62	15
Business & management	1,627	143	185	356	662	215	42	--	388	9	87	--	68	--	339	21	--	--
Communications	204	16	11	--	318	13	--	--	12	--	4	5	--	--	1	14	16	--
Computer & information sciences	122	20	61	37	40	22	--	--	11	--	--	--	--	--	14	--	6	--
Education	795	438	288	676	611	929	21	--	384	188	378	133	100	38	277	62	342	52
Engineering	1,298	213	546	170	158	--	--	--	--	--	6	--	21	8	--	--	--	--
Fine & applied arts	161	40	36	21	194	103	--	--	11	--	10	--	13	--	36	--	6	--
Foreign languages	59	30	37	26	23	9	6	--	8	1	2	--	1	--	16	--	7	--
Health professions	293	126 (98)	419	576 (265)	287	393 (312)	--	--	76	--	20	--	--	--	36	17	53	--
Home economics	429	45	--	--	--	--	--	--	--	--	--	--	11	--	--	--	--	--
Law	--	--	--	221 (221)	3	388 (344)	--	--	--	--	--	--	--	--	--	--	--	--
Letters	313	48	319	48	97	46	12	--	34	5	27	7	13	4	31	2	26	--
Library science	--	--	--	169	--	--	--	--	--	--	--	--	--	--	21	27	--	--
Mathematics	62	41	49	18	11	7	2	--	11	--	19	2	2	--	18	6	9	--
Physical sciences	389	144	159	67	37	28	5	--	16	3	16	4	9	--	22	--	13	--
Psychology	156	41	300	32	109	61	15	--	33	--	19	--	17	--	30	--	27	--
Public affairs & services	630	146	213	296	175	144	6	34	--	--	55	--	24	--	--	--	4	--
Social sciences	509	86	584	77	259	53	49	--	82	11	63	15	48	--	41	--	121	9
Theology	--	--	--	2	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Interdisciplinary studies	234	24	126	--	99	1	--	--	2	--	51	2	6	1	5	--	--	2
Total degrees	8,588	1,850 (98)	3,555	2,849 (486)	3,139	2,449 (656)	181	34	1,118	221	776	171	345	51	943	158	692	78

Program	Edinboro		Indiana		Kutztown		Lock Haven		Mansfield		Millersville		Shippensburg		Slippery Rock		West Chester	
	Under-grad.	Grad-uate	Under-grad.	Grad-uate	Under-grad.	Grad-uate	Under-grad.	Grad-uate	Under-grad.	Grad-uate	Under-grad.	Grad-uate	Under-grad.	Grad-uate	Under-grad.	Grad-uate	Under-grad.	Grad-uate
Agriculture & natural resources	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Architecture & environmental design	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Area studies	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	2	--
Biological sciences	25	15	58	6	24	8	17	--	17	--	60	6	35	11	21	2	13	13
Business & management	76	--	457	47	124	--	--	--	8	--	4	--	257	45	--	--	135	--
Communications	--	--	40	20	24	--	6	--	--	--	5	--	46	23	3	--	3	--
Computer & information sciences	--	--	36	--	--	--	29	--	6	--	26	--	12	--	1	--	9	--
Education	309	179	540	225	291	89	203	--	226	24	496	153	183	228	409	118	502	220
Engineering	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Fine & applied arts	88	4	52	15	101	--	3	--	24	2	37	--	--	--	9	--	35	--
Foreign languages	7	--	31	2	17	4	4	--	5	--	43	16	3	--	4	--	26	4
Health professions	48	25	145	--	4	--	--	--	3	--	23	--	6	--	23	--	80	15
Home economics	3	--	248	--	--	--	--	--	57	--	--	--	--	--	--	--	--	--
Law	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Letters	51	6	43	18	11	7	6	--	13	1	33	13	26	9	39	8	50	18
Library science	--	--	--	--	25	11	--	--	--	--	--	--	--	20	7	--	--	--
Mathematics	13	5	26	5	8	11	6	--	14	1	34	6	21	8	7	--	9	8
Physical sciences	26	5	38	4	15	--	5	--	10	--	29	1	16	6	12	2	16	14
Psychology	43	14	61	12	14	3	19	--	18	9	81	34	52	--	20	--	36	24
Public affairs & services	101	--	38	--	47	--	29	--	69	--	25	--	75	53	145	4	174	12
Social sciences	82	12	415	30	65	8	31	--	33	1	106	7	95	14	147	2	77	10
Theology	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Interdisciplinary studies	39	--	--	--	--	--	27	--	7	--	--	--	22	5	25	--	4	--
Total degrees	911	265	2,228	384	770	141	385	--	510	38	1,002	236	849	422	872	136	1,171	338

NOTE: Health professions and law first-professional degrees are in parenthesis; these include school of medicine and school of dentistry degrees.

SOURCE: Pa. Department of Education, Division of Education Statistics, printout for "Bachelor's and Higher Degrees Conferred by Major Subject Area and Institution," (1978-79).

Appendix Table 8A

AVERAGE SALARY FOR TOTAL FULL-TIME EQUIVALENT RANKED TEACHING FACULTY¹
ACADEMIC YEARS 1977-78 to 1979-80

Institution	Average salary-- all ranks (000's)	Professor		Associate professor		Assistant professor		Instructor	
		Average salary (000's)	Percentage of faculty	Average salary (000's)	Percentage of faculty	Average salary (000's)	Percentage of faculty	Average salary (000's)	Percentage of faculty
State-related universities									
Penn State									
1977-78	\$18.2	\$26.2	20%	\$20.1	26%	\$15.7	37%	\$11.7	17%
1978-79	19.5	28.3	20	21.5	25	16.4	38	11.9	17
1979-80	20.3	29.9	21	22.6	25	17.3	37	11.9	17
Pittsburgh									
1977-78	17.4	24.0	25	17.9	33	14.3	29	10.4	13
1978-79	18.1	25.9	23	18.5	34	15.0	29	10.7	14
1979-80	19.4	27.8	25	19.7	33	15.7	28	11.2	14
Temple									
1977-78	18.5	27.2	24	20.0	30	15.0	29	9.7	17
1978-79	21.6	30.8	26	23.0	30	17.4	28	11.9	16
1979-80	22.4	32.2	28	23.6	30	17.5	27	10.3	15
Lincoln									
1977-78	18.2	22.6	27	19.1	16	16.0	41	15.7	16
1978-79	18.6	23.9	22	19.4	24	16.5	37	15.1	17
1979-80	18.7	24.1	22	20.5	22	16.2	35	15.2	21
State-owned colleges									
Bloomsburg									
1977-78	19.3	23.8	30	19.6	38	15.1	27	11.9	5
1978-79	21.0	26.4	29	21.2	41	16.4	25	12.6	5
1979-80	21.8	27.2	28	22.5	40	17.4	24	12.2	8
California									
1977-78	21.2	24.4	40	19.9	45	16.5	14	13.6	1
1978-79	23.2	27.0	40	21.8	44	18.4	15	13.6	1
1979-80	24.4	28.2	41	23.0	42	18.9	15	14.6	2
Cheyney									
1977-78	20.1	24.2	29	20.2	46	16.5	15	13.8	10
1978-79	22.1	25.8	31	21.7	48	18.6	12	16.0	9
1979-80	23.7	28.0	33	23.1	46	19.5	12	16.3	9
Clarion									
1977-78	20.4	25.4	26	21.0	40	16.9	24	13.4	10
1978-79	22.2	27.9	27	22.7	41	18.1	22	14.1	10
1979-80	22.5	27.7	30	22.4	38	18.5	21	14.5	11
East Stroudsburg									
1977-78	19.2	24.5	33	20.0	31	15.6	24	9.7	12
1978-79	21.5	27.1	35	21.5	35	17.1	22	9.6	8
1979-80	22.8	27.8	35	22.3	39	17.8	22	10.8	4
Edinboro									
1977-78	20.0	23.5	37	19.6	35	16.2	26	10.4	2
1978-79	22.3	26.1	39	21.8	35	17.7	24	12.4	2
1979-80	23.9	28.3	36	23.5	38	19.2	24	13.4	2
Indiana University									
1977-78	20.5	24.5	38	20.1	35	15.9	21	12.5	6
1978-79	21.8	26.3	38	21.3	34	17.1	22	12.9	6
1979-80	22.4	27.6	38	21.7	33	17.5	21	13.1	8
Kutztown									
1977-78	20.2	24.3	30	20.4	41	16.5	20	12.8	9
1978-79	22.0	26.4	31	22.0	41	18.1	21	14.0	7
1979-80	23.8	28.5	32	23.7	42	19.5	18	14.9	8
Lock Haven									
1977-78	20.5	25.1	27	20.1	47	16.9	23	12.6	3
1978-79	22.7	27.5	29	22.0	46	18.5	22	15.8	3
1979-80	23.9	28.8	30	23.9	44	19.4	21	15.2	5
Mansfield									
1977-78	20.0	25.6	23	20.3	45	16.0	24	12.5	8
1978-79	22.1	27.3	27	22.7	39	18.0	28	14.3	6
1979-80	23.7	29.2	29	24.1	40	19.6	24	13.2	7
Millersville									
1977-78	19.9	24.4	30	20.2	40	15.9	24	12.5	6
1978-79	21.4	26.2	32	21.4	39	17.3	23	12.2	6
1979-80	22.7	27.4	33	22.6	39	18.1	22	14.3	6
Shippensburg									
1977-78	20.3	24.7	31	20.1	39	16.6	26	12.5	4
1978-79	22.6	27.3	34	22.7	38	17.3	24	14.5	4
1979-80	23.3	27.9	35	23.0	35	19.2	25	15.5	5
Slippery Rock									
1977-78	20.0	24.4	33	19.6	35	16.6	21	14.0	11
1978-79	22.0	26.9	33	22.0	33	18.0	24	15.3	10
1979-80	23.5	28.0	37	22.7	33	20.1	21	16.8	9
West Chester									
1977-78	19.8	24.5	29	20.2	40	15.8	24	12.5	7
1978-79	20.7	25.2	30	21.1	41	16.6	22	12.8	7
1979-80	22.7	27.7	30	22.7	40	18.7	22	14.5	8

1. Data for summer 1979 are used for both 1978-79 and 1979-80 calculations due to change in time period of reporting.

2. Data provided for full-time faculty only for 1977-78 and 1978-79.

SOURCE: Salary reports provided by the individual institutions, 1978, 1979 and 1980.

Appendix Table 9A
 FTE RANKED TEACHING FACULTY¹
 ACADEMIC YEARS 1977-78 to 1979-80

Institution	FTE teaching faculty				Total
	Professor	Associate professor	Assistant professor	Instructor	
State-related universities					
Penn State ²					
1977-78	451	581	855	380	2,267
1978-79	453	570	868	375	2,266
1979-80	491	598	864	412	2,365
Pittsburgh					
1977-78	437	590	509	235	1,769
1978-79	431	617	529	267	1,844
1979-80	453	615	514	249	1,831
Temple					
1977-78	417	511	506	298	1,732
1978-79	445	525	486	281	1,727
1979-80	485	514	470	262	1,731
Lincoln					
1977-78	21	12	32	12	77
1978-79	18	20	30	14	82
1979-80	18	18	30	18	84
State-owned colleges					
Bloomsburg					
1977-78	102	131	91	17	341
1978-79	104	143	90	19	356
1979-80	115	163	96	33	407
California					
1977-78	133	147	46	2	328
1978-79	129	142	50	4	325
1979-80	140	143	52	6	341
Cheyney					
1977-78	54	87	28	18	187
1978-79	58	88	22	16	184
1979-80	62	86	24	17	189
Clarion ³					
1977-78	69	107	64	27	267
1978-79	70	110	60	26	266
1979-80	98	124	68	35	325
East Stroudsburg					
1977-78	82	78	60	30	250
1978-79	86	87	56	19	248
1979-80	88	95	53	9	245
Edinboro					
1977-78	154	143	106	10	413
1978-79	153	140	95	7	395
1979-80	149	158	101	10	418
Indiana University					
1977-78	253	233	142	37	665
1978-79	262	229	147	40	678
1979-80	270	237	151	53	711
Kutztown					
1977-78	88	119	58	25	290
1978-79	90	116	61	21	288
1979-80	95	126	53	25	299
Lock Haven					
1977-78	45	77	37	6	165
1978-79	47	74	34	5	160
1979-80	48	72	34	9	163
Mansfield					
1977-78	50	95	51	18	214
1978-79	55	80	57	12	204
1979-80	57	81	49	15	202
Millersville					
1977-78	104	141	83	22	350
1978-79	107	132	76	21	336
1979-80	115	136	77	20	348
Shippensburg					
1977-78	103	126	85	14	328
1978-79	109	120	79	12	320
1979-80	120	120	88	19	347
Slippery Rock					
1977-78	116	123	74	38	351
1978-79	112	112	81	33	338
1979-80	128	114	73	33	348
West Chester					
1977-78	148	201	119	37	505
1978-79	154	211	112	38	515
1979-80	158	207	117	39	521

1. Data for summer 1979 are used for both 1978-79 and 1979-80 calculations due to change in time period of reporting.

2. Magnitude of Penn State faculty cannot be compared to that of Pittsburgh or Temple because Penn State full-time equivalent faculty is determined on a different basis.

3. Full-time faculty only for 1977-78 and 1978-79.

SOURCE: Salary reports provided by the individual institutions, 1978, 1979 and 1980.

Appendix Table 10A

PENNSYLVANIA STATE-OWNED COLLEGES AND UNIVERSITY FACULTY
ACADEMIC YEAR SALARY SCHEDULE
AUGUST 1977 to AUGUST 1980

Rank and step	August 27, 1977	January 14, 1978	July 1, 1978 ^b	August 26, 1978	January 13, 1979	August 25, 1979	January 1980	August 23, 1980
	residual increase of \$119.60 ^a	residual increase of \$54.80 ^a		3% increase	2% increase ¹ plus residual increase of \$57.80 ^a		residual increase of \$60.20 ^a	
	Salary scale	Salary scale	Salary scale	Salary scale	Salary scale	Salary scale	Salary scale	Salary scale
Professor								
A	\$19,730	\$19,780	\$20,670	\$21,290	\$21,760	\$22,740	\$22,800	\$23,830
B	20,720	20,770	21,710	22,360	22,850	23,880	23,940	25,010
C	21,750	21,800	22,790	23,470	23,980	25,060	25,120	26,250
D	22,830	22,880	23,910	24,630	25,170	26,300	26,360	27,540
E	23,970	24,030	25,110	25,860	26,420	27,610	27,670	28,920
F	25,160	25,220	26,350	27,140	27,730	28,980	29,040	30,340
G	26,420	26,480	27,670	28,500	29,110	30,420	30,480	31,850
Associate professor								
A	16,250	16,300	17,030	17,550	17,940	18,750	18,810	19,660
B	17,050	17,110	17,880	18,420	18,830	19,680	19,740	20,630
C	17,890	17,940	18,750	19,310	19,740	20,630	20,690	21,620
D	18,780	18,840	19,690	20,280	20,730	21,660	21,720	22,700
E	19,730	19,780	20,670	21,290	21,760	22,740	22,800	23,830
F	20,720	20,770	21,710	22,360	22,850	23,880	23,940	25,010
G	21,750	21,800	22,790	23,470	23,980	25,060	25,120	26,250
Assistant professor								
A	13,370	13,430	14,030	14,450	14,790	15,460	15,520	16,210
B	14,050	14,100	14,730	15,180	15,530	16,230	16,290	17,020
C	14,740	14,800	15,460	15,930	16,290	17,030	17,090	17,860
D	15,480	15,540	16,240	16,720	17,110	17,880	17,940	18,740
E	16,250	16,300	17,030	17,550	17,940	18,750	18,810	19,660
F	17,050	17,110	17,880	18,420	18,830	19,680	19,740	20,630
G	17,890	17,940	18,750	19,310	19,740	20,630	20,690	21,620
Instructor								
A	11,040	11,090	11,590	11,940	12,230	12,780	12,840	13,410
B	11,570	11,630	12,150	12,520	12,820	13,390	13,450	14,060
C	12,160	12,210	12,760	13,150	13,460	14,060	14,120	14,760
D	12,740	12,800	13,370	13,770	14,100	14,730	14,790	15,460
E	13,370	13,430	14,030	14,450	14,790	15,460	15,520	16,210
F	14,050	14,100	14,730	15,180	15,530	16,230	16,290	17,020
G	14,740	14,800	15,460	15,930	16,290	17,030	17,090	17,860

1. Percentage increase of 2 percent is remainder of 5 percent increase not paid in August 1978.

a. Residual increase calculated per faculty member on basis of amount saved in current-year promotion and distinguished faculty award costs over base year 1973-74 costs. First payment, August 1977, is retroactive payment for 1974-75 and 1975-76.

b. Payment of increase not payable during fiscal year 1977-78 under language of General Appropriations Act of 1977 (Act No. 11A), is effective July 1, 1978.

SOURCE: Schedules of pay ranges for State college faculty as amended by collective bargaining August 1977, January, July and August 1978, January and August 1979, January and August 1980, Office of Administration, Bureau of Personnel.

Appendix Table 11A

Deciles of the Distributions of Institution by Average Salary, Category, and Academic Rank, 1979-80

Rating ¹	1*	1	2	3	4					
Percentile:	95	90	80	70	60	50	40	30	20	10
CATEGORY I										
Professor	\$36,040	\$34,720	\$32,320	\$31,170	\$30,360	\$29,560	\$28,340	\$27,540	\$26,630	\$24,770
Associate	25,460	24,530	23,620	23,230	22,870	22,370	21,990	21,420	21,050	20,320
Assistant	20,470	19,600	19,040	18,700	18,320	17,960	17,790	17,530	17,120	16,830
Instructor	16,600	16,180	15,570	15,030	14,650	14,440	13,970	13,630	13,330	12,830
All Ranks	28,950	26,740	25,760	24,370	23,810	22,870	22,340	21,680	20,820	19,490
CATEGORY IIA										
Professor	31,130	29,960	28,000	26,300	25,290	24,220	23,350	22,030	20,650	18,250
Associate	24,560	23,600	22,180	21,320	20,690	20,100	19,540	18,740	17,670	16,240
Assistant	20,000	19,280	18,400	17,750	17,330	16,880	16,430	15,880	15,080	14,010
Instructor	16,880	16,210	15,360	14,760	14,250	13,850	13,510	13,080	12,550	11,690
All Ranks	26,140	24,440	21,970	20,810	19,870	19,280	18,640	17,850	16,590	15,120
CATEGORY IIB										
Professor	27,530	26,460	24,040	22,970	21,740	20,850	19,850	18,650	17,510	16,230
Associate	21,630	20,670	19,550	18,720	18,020	17,330	16,720	16,000	15,290	14,220
Assistant	17,810	17,070	16,240	15,810	15,260	14,740	14,290	13,840	13,270	12,550
Instructor	15,300	14,880	14,150	13,490	12,970	12,590	12,210	11,850	11,310	10,510
All Ranks	21,050	20,080	18,730	17,950	17,000	16,240	15,540	14,790	13,910	12,650
CATEGORY III										
Professor	28,570	27,980	26,060	24,510	23,380	22,030	21,150	20,280	18,730	17,630
Associate	24,680	23,380	21,560	20,430	19,580	18,980	18,360	17,890	17,030	15,120
Assistant	21,570	19,990	18,400	17,580	16,980	16,460	16,090	15,670	14,090	13,460
Instructor	18,010	16,990	15,610	14,950	14,390	13,790	13,380	12,940	12,280	11,270
All Ranks	23,150	21,360	19,600	18,610	17,450	16,680	16,250	15,640	14,710	13,190
CATEGORY IV										
No Rank	36,420	24,290	21,220	18,770	17,220	16,080	15,130	14,100	13,130	11,440
ALL CATEGORIES EXCEPT IV										
Professor	31,800	30,000	27,690	25,890	24,370	23,150	21,860	20,640	18,950	17,030
Associate	24,320	23,250	21,870	20,880	19,980	19,150	18,360	17,510	16,400	15,120
Assistant	19,900	18,980	18,070	17,380	16,820	16,210	15,660	14,940	14,130	13,130
Instructor	16,800	15,870	15,030	14,490	13,930	13,510	13,080	12,580	12,000	11,150
All Ranks	25,430	23,590	21,420	19,970	19,000	18,050	16,970	16,090	15,040	13,550

¹ Interpretation of the Ratings: 1* = 95th percentile; 1 = 80th percentile; 2 = 60th percentile; 3 = 40th percentile; 4 = 20th percentile. Average salary lower than the 20th percentile will be rated 5.

NOTE: Interpretation of data: An average salary of \$30,950 for the rank of full professor in a Category I institution would be rated 2 because it falls between the 60th and 80th percentiles or is higher than \$30,360 but less than \$32,320, which is the average salary required for a rating of 1 or the salary level of the 80th percentile. Another way to state the relative position of the figure used in our sample would be to say an average salary of \$30,950 falls among the top 40 percent of distribution of average salary in descending order (i.e., top paying institutions).

SOURCE: Reproduced from *Academe* 66 (September 1980): table 12, p. 280. *Academe* is the bulletin of the American Association of University Professors, Suite 500, One Dupont Circle, Washington, D.C. 20036.

Appendix Table 12A

TUITION AND REQUIRED FEES AT INSTITUTIONS OF HIGHER EDUCATION IN PENNSYLVANIA
ACADEMIC YEARS 1976-81

Institution	Year	Undergraduate		Graduate	
		In-State	Out-of-State	In-State	Out-of-State
State-related universities					
Penn State					
Main Campus	1976-77	\$1,149	\$2,403	\$1,224	\$2,478
	1977-78	1,263	2,643	1,347	2,727
	1978-79	1,368	2,748	1,452	2,832
	1979-80	1,485	2,982	1,581	3,150
	1980-81	1,641	3,297	1,749	3,498
Pittsburgh					
Main Campus ¹	1976-77	1,266	2,476	1,316	2,596
	1977-78	1,366	2,676	1,426	2,816
	1978-79	1,516	2,976	1,596	3,156
	1979-80	1,646	3,236	1,756	3,476
	1980-81	1,880	3,670	1,986	3,926
Temple¹					
	1976-77	1,300	2,500	1,400	2,500
	1977-78	1,450	2,650	1,550	2,650
	1978-79	1,610	3,000	1,750	3,100
	1979-80	1,810	3,374	1,968	3,488
	1980-81	2,068	3,854	2,248	3,984
Lincoln					
	1976-77	1,078	1,778	n.a.	n.a.
	1977-78	1,168	1,868	1,518	2,718
	1978-79	1,268	1,968	1,518	2,918
	1979-80	1,268	1,968	1,518	2,918
	1980-81	1,450	2,150	1,820	3,020
State-owned colleges					
Bloomsburg					
	1976-77	880	1,580	800	1,500
	1977-78	955	1,730	885	1,660
	1978-79	1,040	1,870	970	1,800
	1979-80	1,040	1,870	970	970
	1980-81	1,192	2,022	1,120	1,120
California					
	1976-77	890	1,590	890	1,590
	1977-78	930	1,705	897	1,672
	1978-79	1,060	1,890	1,060	1,890
	1979-80	1,060	1,890	994	994
	1980-81	1,242	2,072	1,176	1,176
Cheyney					
	1976-77	890	1,590	890	1,590
	1977-78	965	1,740	945	1,720
	1978-79	1,060	1,890	1,040	1,870
	1979-80	1,060	1,890	1,040	1,040
	1980-81	1,210	2,040	1,190	1,190
Clarion					
Main Campus	1976-77	890	1,590	890	1,590
	1977-78	975	1,750	975	1,750
	1978-79	1,050	1,880	1,050 ^a	1,880 ^a
	1979-80	1,070	1,900	1,040	1,040
	1980-81	1,230	2,060	1,230	1,230

Edinboro	1976-77	870	1,570	870	1,570
	1977-78	955	1,730	955	1,730
	1978-79	1,030	1,860	1,030	1,860
	1979-80	1,056	1,886	1,056	1,056
	1980-81	1,206	2,036	1,206	1,206
Indiana University	1976-77	860	1,560	860	1,560
	1977-78	947	1,722	947	1,722
	1978-79	1,022	1,852	1,022	1,852
	1979-80	1,024	1,854	1,022	1,022
	1980-81	1,230	2,060	1,189	1,189
Kutztown	1976-77	880	1,580	800	1,500
	1977-78	975	1,750	905	1,680
	1978-79	1,050	1,880	970	1,800
	1979-80	1,052	1,882	970	970
	1980-81	1,220	2,050	1,120	1,120
Lock Haven	1976-77	900	1,600	n.a.	n.a.
	1977-78	975	1,750	n.a.	n.a.
	1978-79	1,062	1,892	n.a.	n.a.
	1979-80	1,062	1,892	n.a.	n.a.
	1980-81	1,222	2,052	n.a.	n.a.
Mansfield	1976-77	820	1,520	820	1,520
	1977-78	969	1,744	899	1,674
	1978-79	1,056	1,886	974	1,804
	1979-80	1,056	1,886	974	974
	1980-81	1,216	2,046	1,124	1,124
Millersville	1976-77	884	1,584	884	1,584
	1977-78	1,003	1,778	885	1,660
	1978-79	1,080	1,910	970	1,800
	1979-80	1,042	1,872	970	970
	1980-81	1,212	2,042	1,120	1,120
Shippensburg	1976-77	895	1,595	820	1,520
	1977-78	970	1,745	895	1,670
	1978-79	1,045	1,875	970	1,800
	1979-80	1,054	1,884	970	970
	1980-81	1,254	2,084	1,170	1,170
Slippery Rock	1976-77	890	1,590	820	1,520
	1977-78	965	1,740	895	1,670
	1978-79	1,040	1,870	970	1,800
	1979-80	1,048	1,878	970	970
	1980-81	1,198	2,028	1,120	1,120
West Chester	1976-77	844	1,544	868	1,568
	1977-78	963	1,738	895	1,670
	1978-79	1,040	1,870	970	1,800
	1979-80	1,050	1,880	980	980
	1980-81	1,200	2,050	1,120	1,120

1. Average cost for most courses, fees vary with program.
a. Includes an \$80 activity fee paid by full-time graduate students taking 12 or more credits.
n.a. Not applicable.

SOURCE: Pennsylvania Department of Education, "Tuition and Required Fees and Room and Board Charges at Institutions of Higher Education in Pennsylvania," 1976-77, 1977-78, 1978-79, 1979-80 and 1980-81.

UNIT OF PRODUCTION

The unit measures in this report have been calculated to reflect that student credit-hour production is occurring at the undergraduate and graduate levels in varying proportions at the 18 institutions. In order to account for this production at different levels, weights have been determined to equalize the student credit hours produced at upper levels to lower-division student credit hours. Faculty instructional salaries, which represent a significant portion of the total instructional cost, were used to establish the weights in the following manner. The instructional salaries for each rank at each institution were distributed among the levels of instruction on the basis of the distribution of assigned credits at each level. In other words, the portion of a faculty member's assigned credits at a given level was used as a measure of the portion of instructional faculty effort at that level.

The sum of the salary dollars distributed in this manner for each of the institutions at each of the instructional levels divided by the student credit hours produced at each level results in the ratios of costs at the upper levels to the lower-division level cost. These are the weights which are used in this report to calculate lower-division student credit-hour equivalents.

<u>Level of instruction</u>	<u>Ratio to lower- division cost</u>
Undergraduate	
Lower-division	1
Upper-division	2
Graduate	
Master's	3
First professional	1
Doctor's	7

This method of accounting for the different compositions of the student bodies with the widely ranging costs at different levels provides comparable measurements of production only to the extent that the original data furnished by the different institutions are comparable.

GLOSSARY OF DEFINITIONS

1. Average academic year salary

The ratio of the total salary to the full-time equivalent faculty

2. Average class size

The ratio of student credit hours to the assigned credits

3. Average faculty production

The ratio of the equivalent student credit hours produced to the full-time equivalent faculty

4. Equivalent student credit hours

The number of undergraduate student credit hours plus 1.25 times the graduate student credit hours

5. Full-time equivalent faculty

The sum of the full-time instructional faculty and noninstructional faculty plus the full-time equivalent of part-time faculty for each term during the year divided by the number of terms comprising an academic year

6. Full-time equivalent instructional faculty

The portion of the equivalency of the full-time faculty and part-time faculty in the instructional function

7. Full-time equivalent noninstructional faculty

The portion of the equivalency of the full-time faculty and part-time faculty in the noninstructional function

8. Full-time equivalent student

One full-time equivalent student is equal to 30 undergraduate student credit hours or 24 graduate student credit hours

9. "Full-time" faculty

Faculty members identified by the institution and required to report a workweek

10. Lower-division student credit hours

Credits earned in introductory courses at the first or second year undergraduate level

11. Ranked faculty

Faculty holding the ranks of professor, associate professor, assistant professor and instructor

12. Undergraduate equivalent contact hours

The sum of undergraduate contact hours and 1.25 times the graduate contact hours

13. Units of production

A weighted sum of credits produced where the following weights are applied:

Undergraduate student credit hours

Lower-division	1
Upper-division	2

Graduate student credit hours

Master's level	3
First professional	1
Doctoral level	7

Degrees

Bachelor's	10
Master's	20
First professional	20
Doctor's	60

14. Upper-division credit hours

Credits earned in advanced courses at the third or fourth year undergraduate level

