DOCUMENT RESUME

ED 213 464 JC 820 080

AUTHOR Phipps, Ronald A.; Gaylord, Thomas A.
TITLE Unit Cost Study for the University of Alaska Community Colleges, Fiscal Year 1981. Community Colleges: A Report to the Twelfth Alaska State Legislature by the Community College Interim Committee. Volume III.
INSTITUTION Alaska State Commission on Postsecondary Education, Juneau.
REPORT NO 82-6
PUB DATE Dec 81
NOTE 80p.; For related documents, see JC 820 078-079.

EDRS PRICE MF01/PC04 Plus Postage.
DESCRIPTORS College Faculty; College Programs; *Community Colleges; *Educational Finance; *Expenditure Per Student; Program Costs; *Resource Allocation; School Statistics; State Surveys; Statewide Planning; Student Teacher Ratio; Teacher Distribution; Two Year Colleges; Two Year College Students; *Unit Costs
IDENTIFIERS *Alaska

ABSTRACT

This report presents the results of a detailed unit cost study of Alaska's ten community colleges for fiscal year (FY) 1981. After introductory material, the summary results of the study are presented under eight categories: (1) full-time equivalent (FTE) teacher compensation per fiscal-year equated (FYE) student (i.e., a hypothetical student enrolled for 34 credit hours per fiscal year); (2) FTE students per FTE teacher; (3) compensation per FTE teacher; (4) student/teacher ratio and percentage distribution of teachers; (5) total direct instructional cost per FYE student; (6) full cost per FYE student; (7) costs per FYE student per component (e.g., student services and administration); and (8) percentage distribution of FY 1981 expenditures. Next, the overall summary of the study outlines general findings, including the following: vocational education is not necessarily more expensive than general education in Alaska's community colleges; there is a strong relationship between the number of FYE students enrolled and direct instructional cost per FYE student; and the community colleges in Alaska spend their money in different ways and experience different costs per FYE student. Extensive tables and appended material illustrate findings; provide a breakdown of statistics by college; and present the study methodology, college profiles, and courses offered. (HB)

UNIT COST STUDY
FOR THE
UNIVERSITY OF ALASKA
COMMUNITY COLLEGES
FISCAL YEAR 1981

prepared by:

Dr. Ronald A. Phipps, Director

Dr. Thomas A. Gaylord, Assistant Director

Office of Academic Planning and Research

Alaska Commission on Postsecondary Education

December 1981

COMMUNITY COLLEGES
A Report to the
Twelfth Alaska State Legislature
by
The Community College Interim Committee
Volume III

Document No.82-6

ACKNOWLEDGEMENTS

The successful completion of this study was made possible because of the excellent cooperation of university personnel. The compilation and analysis of the data required several meetings and innumerable telephone calls. Special thanks are extended to those persons who endured either or both. They include Ashok Dhingra, Tim Russell, Tom Healey, Gerry Bommotti, Rudy Fernadez, Don Myers, and Sam Namminga. Also, appreciation is extended to those persons on each of the college campuses who answered many questions on the telephone with patience and understanding.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

INTRODUCTION

In May, 1980, the Legislative Council commissioned a study of the community colleges of Alaska to be conducted by a legislative interim committee. As a result, two volumes of the study have been published. Volume I, published in February, 1981, contains ten specific recommendations that were submitted to the legislature. Volume I also provides a detailed description of the historical context, a comprehensive overview of the community colleges in Alaska, a description of existing and alternative governing structures as they relate to community colleges, and a summary of testimony from public hearings. Volume II, published in March, 1981, contains the transcripts of the public hearings.

This volume presents the results of a detailed unit cost study of each community college for the Fiscal Year 1981. The study was conducted from January, 1981 to October, 1981, by the Alaska Commission on Postsecondary Education on behalf of the Interim Committee using financial, personnel and academic reports provided by the University of Alaska. The report reflects costs directly related to teaching, costs supportive of the instructional process, and total operating costs.

On January 26, 1981, a meeting was held with staff of the Commission on Postsecondary Education and university officials to initiate the unit cost study. At the meeting, specific arrangements were made for the collection of data and establishment of communication lines. Also, the University was asked to determine the number and types of categories of disciplines to be analyzed. Since that initial meeting, several other meetings have occurred as the study progressed.

From April 22 through April 24, Mr. Denis Curry, Deputy Coordinator for Finance for the Washington Council for Postsecondary Education, visited Juneau as a consultant for the study. After careful review, Mr. Curry indicated in a letter to Representative Thelma Buchholdt that the methodology for the cost study "should serve as a reasonable basis for determining direct faculty expenditures per student and for allocating support and indirect costs". The entire text of the letter is found in Appendix C.

On May 14, 1981, at a meeting with university officials, comprehensive principles and procedures for completing the unit cost study were reviewed. There was consensus that the methodology was appropriate and that it would serve to accurately reflect university costs. (See letter in Appendix D.) A description of the methodology is found in Appendix B.

A final meeting was held on November 4, 1981 to review the entire study and to comment on a draft of this report. Members of the University representing the Office of Institutional Planning, Statewide Financial Affairs, and the Division of Community Colleges, Rural Education, and Extension Financial Affairs were present. The discussion served to enhance the precision of the document and to clarify terms that may have been ambiguous. The meeting resulted in an agreement on the presentation and analysis of the data.

At this point it is appropriate to include a quote from An Approach to Cost Studies in Small Colleges by the National Center for Higher Education Management Systems.

> "Because there is no consensus on how to measure acquired knowledge, cost analysts have turned to measuring the cost of the process that provides the opportunity to acquire knowledge.

> For example, institutional administrators may wish to compare the relative cost of providing various student programs at varying levels of instruction. The calculated cost will not take into consideration the value or quality of knowledge passed from professor to student; therefore, no answer is provided as to which student program utilized resources most efficiently. However, the comparison of costs does provide the challenge to examine, diagnose, and evaluate why the costs are what they are. Unit costs of the educational process, combined with other programmatic information, provide administrators with the type of information they can use when deciding feasible and financially sound academic-program objectives." (page 44)

The major benefit of this study is to generate insights to improve resource allocation. There has not been, nor was there intended to be, any attempt to recognize differences in quality among academic disciplines. The data contained here can prove useful, however, as a significant management tool.

Cost analysis data does serve to identify relative differences in operating one community college as compared to another. This cost analysis can and does show quite clearly where these differences exist. Additional study is required to determine why such differences occur, whether they could or should be changed, and what the impact of any changes might be.

The student credit hour (SCH) was used as the unit measure of cost. Non-credit courses were related to "student credit hour equivalents" by using the formula as explained in Appendix C. Although contact hours could have been used, it was decided to use student credit hours because they more appropriately reflect the productivity for a given course. This decision was made even though several credit courses within the community college system are open-entry and therefore have variable contact hours per student. It was felt that the use of contact hours as the unit of measure would weigh too heavily for open-entry courses when compared to traditional courses.

A comprehensive presentation of instructional cost should include the depreciation expense of equipment used in various classes. This is especially true for vocational courses. Depreciation expense was not included in this study because an appropriate inventory of equipment associated with particular courses could not be obtained. The information was not available because the University lacks a detailed automated property system. An approximation was obtained, however, by using current year equipment expenditures.

In reviewing the figures contained in this report the reader should be aware of the above comments. The costs shown were derived by using a systematic and objective procedure that can be replicated; however, it should be noted that, the rigor of the methodology notwithstanding, the costs do not necessarily reflect an optimum situation or represent a standard benchmark. They represent a good approximation of what actually occurred in 1980-81; they present a "snapshot" for one fiscal year. The information should serve as a resource for further study of factors affecting the educational process at the community colleges and provide data for analysis of the allocation of resources.

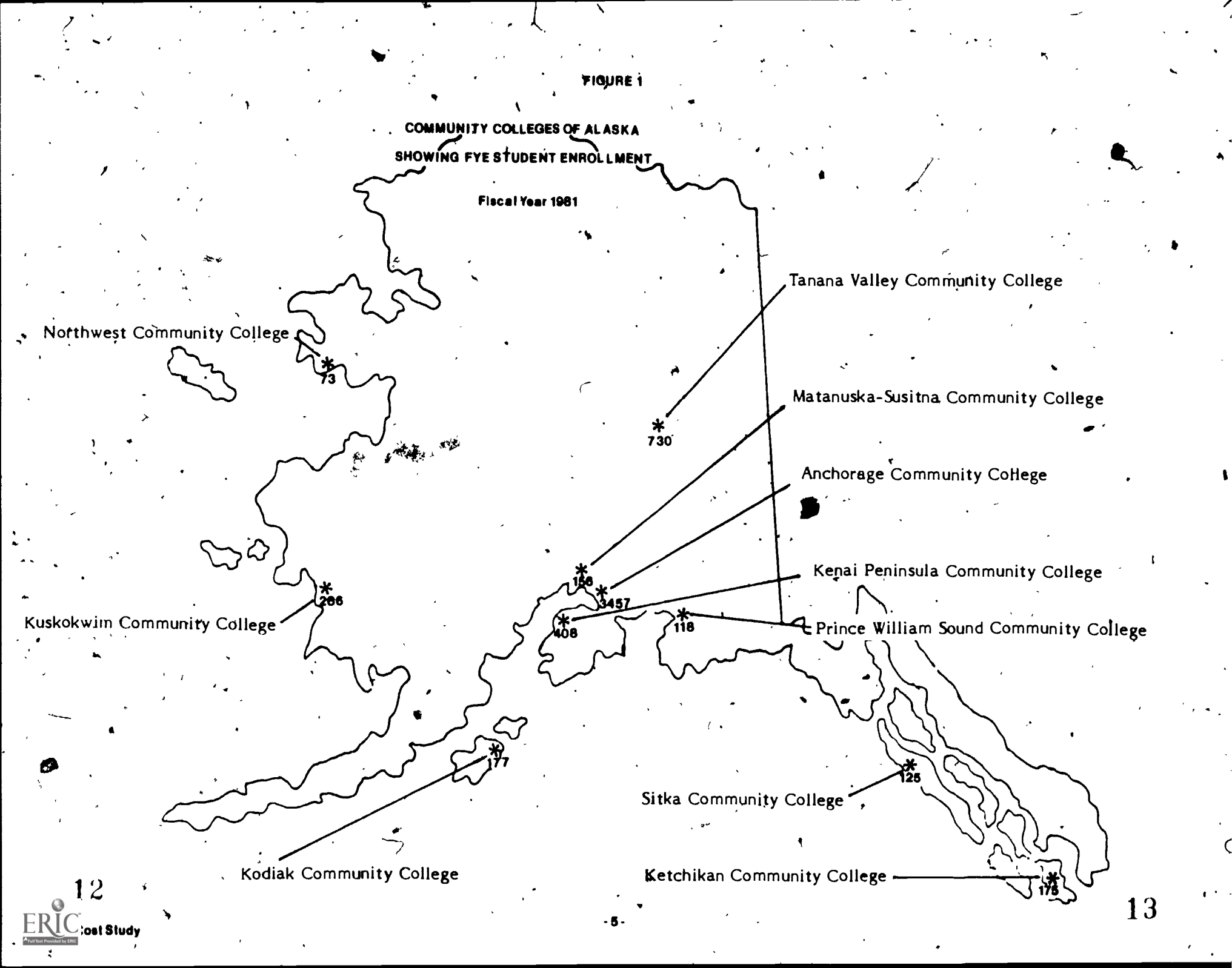
The locations of the University of Alaska community colleges are shown in Figure 1. The colleges provide instruction in areas ranging from villages with as few as a dozen residents to the city of Anchorage with a population of 200,000. Some service areas are larger than the state of Ohio. Also shown in Figure 1 are the FYE enrollments for each institution for the 1980-81 fiscal year.

FIGURE 1

COMMUNITY COLLEGES OF ALASKA

SHOWING FYE STUDENT ENROLLMENT

Fiscal Year 1981



GLOSSARY OF TERMS

Academic Year - A period of instruction encompassing Fall and Spring semesters.

Adult Basic Education - Remedial non-credit coursework for adults having less than equivalent high school skills. Three types of educational activities are included:

1. Activities that provide the basic skills for an adult to function in society;
2. Activities that enable adults to continue their education to at least the equivalent of a secondary school education;
3. Activities that enable adults to secure training necessary for employment.

Community Interest Courses- Non-credit courses that address the educational, cultural, social and recreational needs of the constituency served by the community college.

Contact Hour - In-class time equal to one class period that lasts approximately sixty minutes.

Compensation - The salary and related fringe benefits paid to a community college teacher.

Cost of Living Differential - An index used to adjust a full-time teacher's salary because of varying costs of living expenses within the state.

Direct Instructional Cost - Those costs that can be specifically identified with the instructional component. The costs include personnel compensation, equipment, supplies, and other current expenses.

Fiscal Year 1981 - That period of time beginning July 1, 1980 and ending June 30, 1981.

Fiscal Year Equated (FYE) Student - A hypothetical student who enrolls for thirty-four credit hours per fiscal year.

Full-time Equivalent (FTE) Teacher - A hypothetical teacher who teaches fifteen semester hours during each semester.

Full-time Equivalent (FTE) Student - A hypothetical student who enrolls for fifteen credit hours per semester.

Full-time Teachers - All permanent academic and vocational instructional personnel as defined in "Community College Agreement between the Alaska Community College Federation of Teachers Local 2404, AFT and The University of Alaska, July 1, 1979 - March 31, 1981".

Full Operating Cost - The sum of direct instructional costs and those indirect costs not directly attributable to instruction. The indirect costs include components such as plant and administration, academic support, and student services.

General Education Courses - Courses applicable toward general or specific degree or certificate requirements, except those that are in the "career education/ vocational education" category.

Part-time Teachers - Instructional personnel paid on a per-course basis.

Student Credit Hour - A unit of measure that represents one student engaged in an activity for which one hour of credit toward a degree or other certificate is granted upon successful completion. Total student credit hours for a course are calculated by multiplying the course's credit hour value by the number of students enrolled in the course.

Student Credit Hour Equivalent - For non-credit courses, a unit of measure which is calculated using the formula: (number of students enrolled) x (hours of class contact per week) x (number of weeks) divided by 30.

Unit Cost - The average cost per unit of service (student credit hour) produced in instructional areas. It is derived by dividing total direct cost in an area by the total student credit hours produced.

Vocational Education Courses- Those courses that are designed individually or as part of a program to directly prepare students for paid or unpaid employment or for additional preparation requiring other than a baccalaureate or advanced degree.

ABBREVIATIONS USED FOR EACH COMMUNITY COLLEGE

ACC	Anchorage Community College
KCC	Ketchikan Community College
KOCC	Kodiak Community College
KPCC	Kenai Peninsula Community College
KUCC	Kuskokwim Community College
MSCC	Matanuska-Susitna Community College
NWCC	Northwest Community College
PWSCC	Prince William Sound Community College
SCC	Sitka Community College
TVCC	Tanana Valley Community College

FISCAL YEAR 1981 UNIT COST STUDY

SUMMARY RESULTS

UNIVERSITY OF ALASKA

COMMUNITY COLLEGES

FTE Teacher Compensation per FYE Student

The foundation of the unit cost study is cost of FTE teacher compensation associated with the instruction of students as illustrated in Table 1 and Figure 2. These costs represent the portions of the teachers' workloads which have been attributed to the courses they teach. The amounts shown in Table 1 do not include that portion of the teachers' salary related to advising, committee work, course development, etc. Moreover, supporting costs such as clerical services, supplies, and equipment are not included.

Four categories of courses have been identified for the study: vocational courses, non-vocational courses, community interest courses, and adult basic education courses. (See Appendix E for the identification of vocational and non-vocational courses). Also, a distinction has been made between first year and second year course levels. The "first year" designation represents courses numbered 050-199 inclusively, with the "second year" designation representing courses numbered 200-299 inclusively. No such designation is appropriate for the community interest and adult basic education courses which are, by definition, non-credit.

Data for the community colleges show that FTE teacher compensation costs display wide variability. For credit courses, they range from $1,621 at Tanana Valley Community College to $3,611 at Kuskokwim Community College. For all courses, they range from a low of $1,493 at Tanana Valley Community College to $3,631 at Northwest Community College.

Another way to show the variability of the community college costs is to compare the differences of costs using Anchorage Community College as base. The data in Table 2 show indices of FTE teacher compensation per FYE student with Anchorage Community College costs equalling 1.00.

In order to draw a fairer comparison between the community college costs, it is necessary to factor out cost of living differentials which are used as multipliers of the base salaries of full-time teachers. The chart below shows the cost of living differentials for each community college.

Campus	Differentials
Anchorage	1.000
Kenai Peninsula	1.105
Ketchikan	1.006
Kodiak	1.142
Kuskokwim	1.418
Mat-Su	1.018
Northwest	1.418
Prince William Sound	1.159
Sitka	1.100
Tanana Valley	1.079

It should be noted that the degree of the effect of the differentials is influenced by the proportion of full-time and part-time FTE teachers since the differentials are not applied to part-time salaries. Moreover, the variability of these costs is decreased when differentials are not included. A comparison of the differences in cost with the differentials factored out is illustrated in Table 2A.

TABLE 1

FTE Teacher Compensation Per FYE Student

Fiscal Year 1981

	Anchorage	Kenai Peninsula	Ketchikan	Kodiak	Kuskokwim	Mat-Su	Northwest	Prince Wm. Sound	Sitka	Tanana Valley	System Average
General Education											
First Year	$1,645	$2,229	$3,469	$3,553	$3,310	$1,680	$3,609	$2,048	$2,927	$1,396	$2,578
Second Year	2,399	2,129	4,282	3,653	2,149	2,986	6,327	1,968	3,329	1,705	2,693
Total General Education	1,813	2,198	3,650	3,574	3,044	2,045	4,277	2,024	3,014	1,439	2,606
Vocational Education											
First Year	1,99[illegible]	2,294	2,979	2,868	4,611	2,986	2,610	2,248	2,354	1,556	2,482
Second Year	4,109	4,014	2,294	1,667	15,694	7,303	N/A	1,345	1,750	2,690	2,690
Total Vocational Education	2,451	2,784	2,889	2,717	5,508	3,786	2,610	2,054	2,292	1,760	2,664
Total All Credit Courses	2,021	2,430	3,278	3,275	3,611	2,647	3,586	2,036	2,758	1,621	2,703
Community Interest	2,099	2,006	623	1,646	12,702	1,173	4,841	70	1,171	564	1,410
Adult Basic Education	791	1,489	679	1,160	792	552	N/A	3,159	2,088	N/A	976
Total All Courses	$1,929	$2,411	$2,939	$2,653	$3,167	$2,507	$3,631	$1,571	$2,664	$1,493	$2,580

N/A = Not Applicable

FIGURE 2

FTE TEACHER COMPENSATION PER FYE STUDENT

Fiscal Year 1981

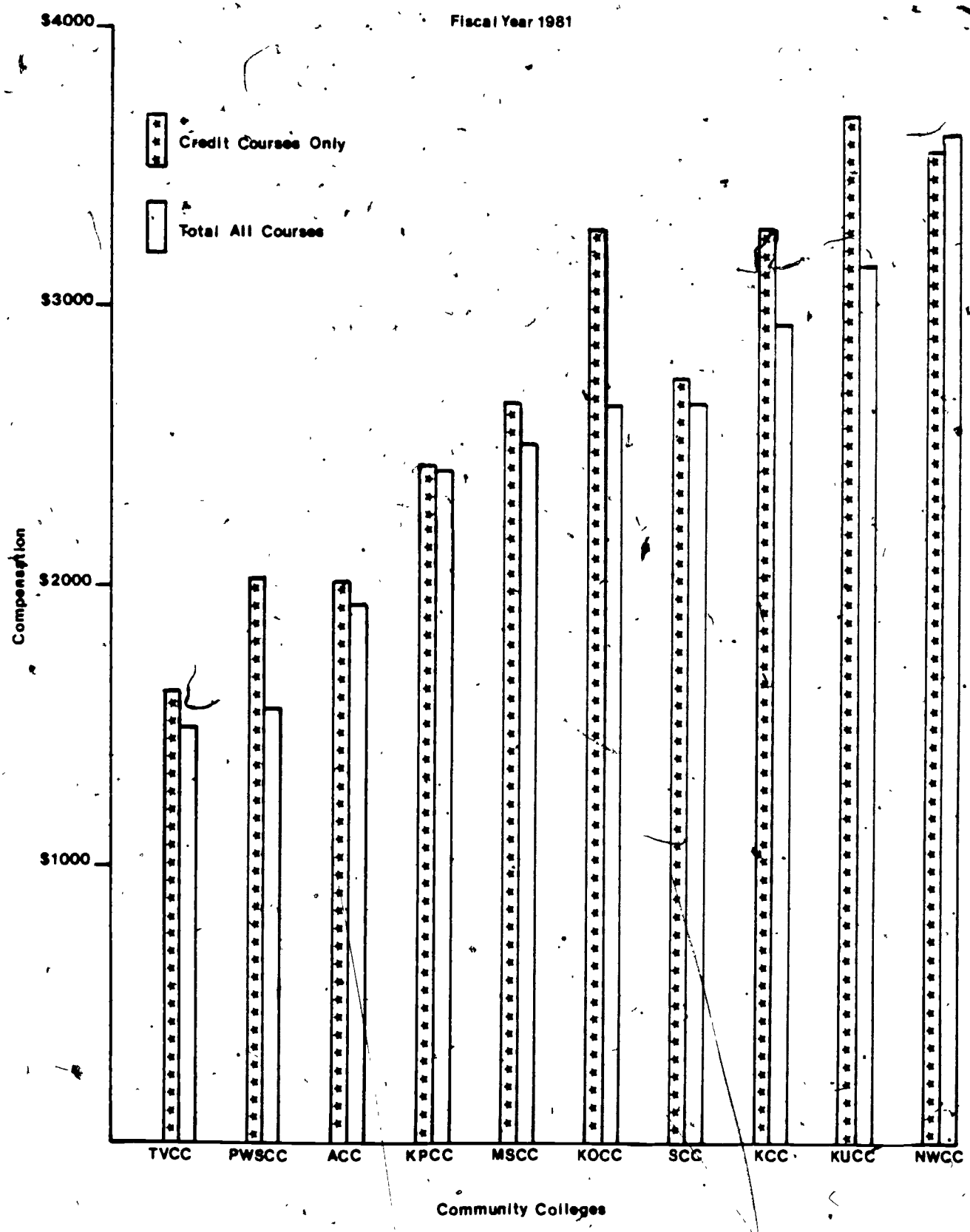


TABLE 2
Comparison of FTE Teacher Compensation Per FYE Student
Using Anchorage Community College as Base (=1.00)
Fiscal Year 1981

	Anchorage	Kenai Peninsula	Ketchikan	Kodiak	Kuskokwim	Mat-Su	Northwest	Prince Wm. Sound	Sitka	Tanana Valley
General Education										
First Year	1.00	1.36	2.11	2.16	2.01	1.02	2.19	1.24	1.78	.85
Second Year	1.00	.89	1.78	1.52	.90	1.24	2.64	.82	1.39	.71
Total General Education	1.00	1.21	2.01	1.97	1.68	1.13	2.36	1.12	1.66	.79
Vocational Education										
First Year	1.00	1.16	1.50	1.45	2.32	1.51	1.32	1.13	1.19	.78
Second Year	1.00	.98	.56	.41	3.82	1.78	N/A	.33	.43	.65
Total Vocational Education	1.00	1.14	1.18	1.11	2.25	1.54	1.06	.84	.94	.72
Total All Credit Courses	1.00	1.20	1.62	1.62	1.79	1.31	1.77	1.01	1.36	.80
Community Interest	1.00	.96	.30	.78	6.05	.56	2.31	.03	.56	.27
Adult Basic Education	1.00	1.88	.86	1.47	1.00	.70	N/A	3.99	2.64	N/A
Total All Courses	1.00	1.25	1.52	1.38	1.64	1.30	1.88	.81	1.38	.77

TABLE 2A
Comparison of FTE Teacher Compensation/FYE Student
Less Cost of Living Differential
As Base (=1.00)
Fiscal Year 1981

	Anchorage	Kenai Peninsula	Ketchikan	Kodiak	Kuskokwim	Mat-Su	Northwest	Prince Wm. Sound	Sitka	Tanana Valley
General Education										
First Year	1.00	1.29	2.10	1.99	1.74	1.01	1.93	1.22	1.70	0.83
Second Year	1.00	0.86	1.78	1.42	.76	1.24	2.27	0.72	1.30	0.70
Total General Education	1.00	1.16	2.01	1.82	1.45	1.12	2.06	1.06	1.58	0.78
Vocational Education										
First Year	1.00	1.07	1.50	1.33	1.79	1.49	1.02	1.06	1.13	0.76
Second Year	1.00	0.89	0.55	0.41	2.69	1.75	N/A	0.33	0.42	0.62
Total Vocational Education	1.00	1.05	1.17	1.03	1.70	1.53	0.83	0.79	0.89	0.69
Total All Credit Courses	1.00	1.13	1.62	1.50	1.47	1.30	1.11	0.95	1.30	0.77
Community Interest	1.00	0.87	0.30	0.78	4.29	0.56	2.31	0.03	0.56	0.27
Adult Basic Education	1.00	1.88	0.86	1.47	0.83	0.70	N/A	3.45	2.64	N/A
Total All Courses	1.00	1.18	1.52	1.27	1.32	1.29	1.60	0.76	1.32	0.75

FTE Students per FTE Teacher

A major factor which affects higher education cost patterns is the proportion of students to teachers. Student/teacher ratios by course level and course category for the 1980 fall semester are presented in Table 3 and Figure 3.

With the exception of Anchorage Community College and Tanana Valley Community College, the student/teacher ratios for credit courses are relatively consistent among the remaining colleges. One would expect that Anchorage and Tanana Valley Community Colleges would have a higher student/teacher ratio because they enroll considerably more students than the other eight community colleges and the data confirm that expectation. The student/teacher ratios of community interest and adult basic education activities show a higher degree of variability than do credit course student/teacher ratios.

It is usually expected that the student/teacher ratio would be lower for second year courses because of student attrition. This is true in eight community colleges for general education courses and six community colleges for vocational education.

Higher student/teacher ratios generally mean a lower cost per student. Another major factor (compensation per FTE teacher) which affects higher education cost patterns is described in the next section.

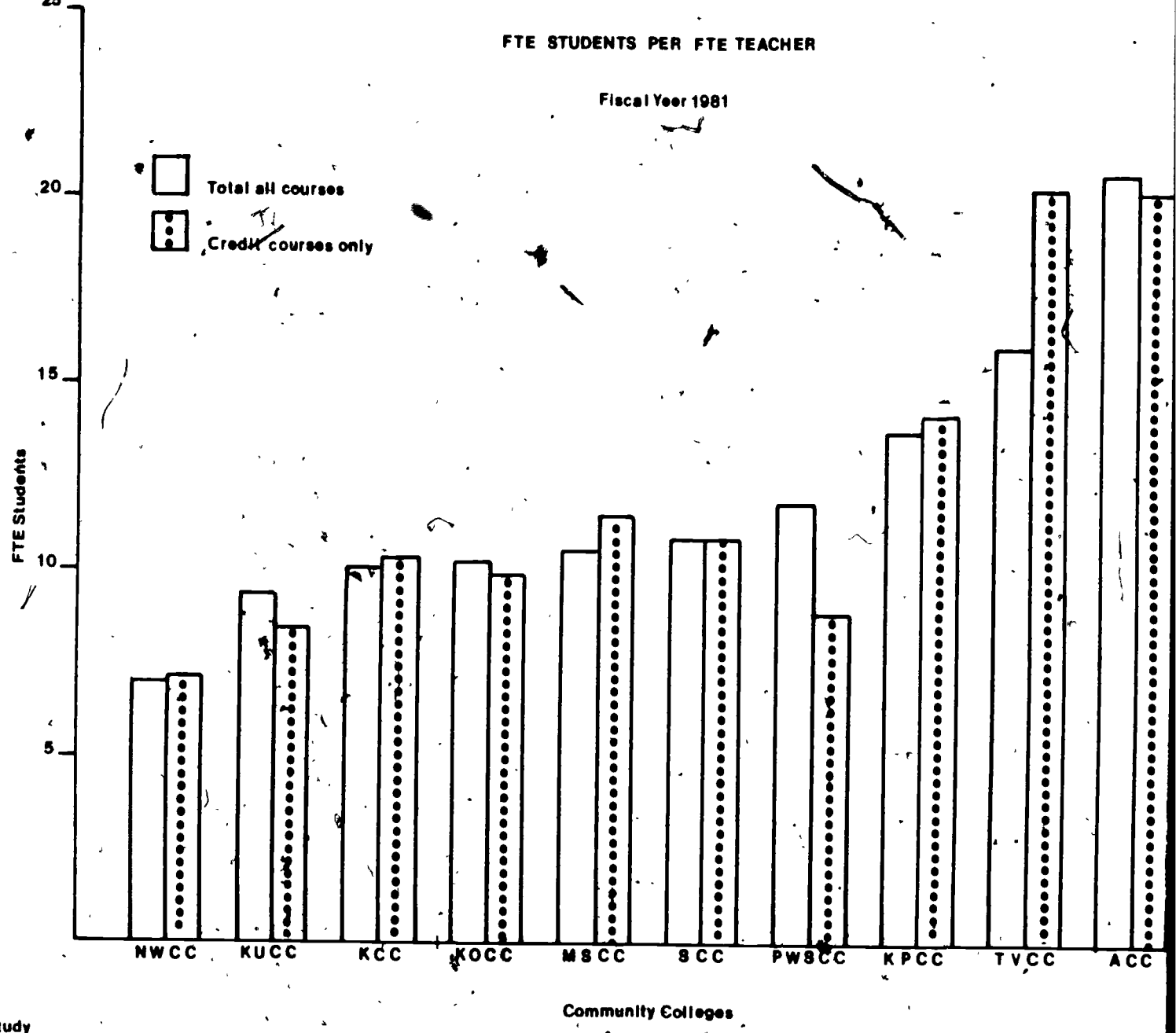
TABLE 3
FTE Students Per FTE Teacher by Course Level and Category
Fiscal Year 1981

	Anchorage	Kenai Peninsula	Ketchikan	Kodiak	Kuskokwim	Mat-Su	Northwest	Prince Wm. Sound	Sitka	Tanana Valley	System Average
General Education											
First Year	23.7	15.5	10.5	9.6	8.0	15.4	6.7	10.0	9.7	18.3	10.3
Second Year	17.9	12.3	6.5	9.1	12.3	9.4	4.2	7.4	9.8	13.1	9.6
Total General Education	22.1	14.3	9.3	9.4	8.7	12.9	5.9	9.0	9.7	17.2	9.6
Vocational Education											
First Year	19.6	16.0	11.6	10.2	7.7	10.6	10.5	7.9	13.0	24.4	11.1
Second Year	11.3	10.6	13.9	10.5	4.8	6.3	N/A	14.4	15.8	18.6	11.3
Total Vocational Education	16.9	13.9	11.9	10.2	7.4	9.4	10.5	8.8	13.3	23.2	11.2
Total All Credit Courses	20.1	14.2	10.4	9.7	8.4	11.5	7.1	8.9	10.8	20.2	10.8
Community Interest	11.8	5.8	16.5	6.1	4.4	5.5	4.4	24.3	9.0	6.4	6.3
Adult Basic Education	45.6	10.0	5.5	21.9	15.9	7.9	N/A	39.0	20.0	N/A	18.0
Total All Courses	20.6	13.7	10.1	10.3	9.3	10.5	7.0	11.7	10.8	16.0	10.7

FIGURE 3

FTE STUDENTS PER FTE TEACHER

Fiscal Year 1981



Study

29

Compensation per FTE Teacher

Compensation paid to teachers is another major factor in the determination of higher education costs. Table 4 shows the compensation for FTE teachers teaching credit courses and the percentage distribution of FTE teachers. The costs are divided into three categories: the average compensation for full-time FTE teachers, the average compensation for part-time FTE teachers and the overall average compensation of all FTE teachers. Figure 4 illustrates the overall average compensation of teachers and Figure 5 depicts the proportion of FTE full-time and part-time teachers for each college. The community colleges are displayed in ascending order of overall average compensation. The overall average compensation per FTE teacher ranges from a low of $18,923 at Prince William Sound to a high of $38,679 at Northwest Community College. It is important to note that the ratio between full-time and part-time FTE teachers plays an important role in the determination of the overall average compensation (i.e., the higher the percentage of full-time teachers, the higher the overall average). Of course, the aforementioned cost of living differentials also can have a significant effect upon the overall average.

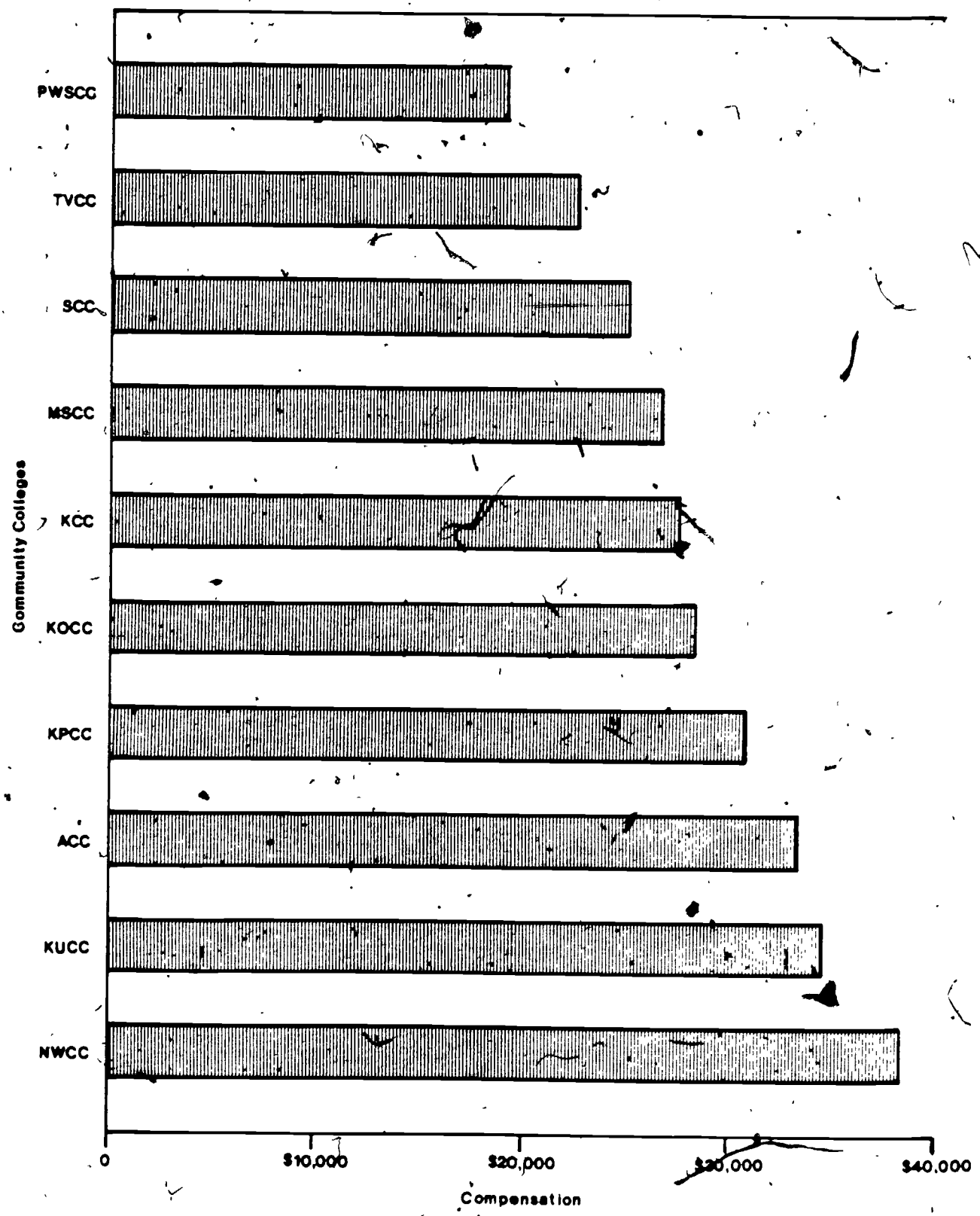
TABLE 4
Compensation Per FTE Teacher Teaching Credit Courses
and Percentage Distribution of FTE Teachers
Fiscal Year 1981

	Full-Time FTE	Part-Time FTE	Overall Average	Percentage Distribution of FTE Teachers FT	PT
Prince William Sound	$37,883	$17,244	$18,923	9%	91%
Tanana Valley	40,944	14,931	22,422	29%	71%
Sitka	41,946	16,952	24,831	31%	69%
Mat-Su	43,934	17,228	26,436	34%	66%
Ketchikan	41,336	16,327	27,835	46%	54%
Kodiak	44,921	16,165	28,013	41%	59%
Kenai Peninsula	43,562	16,100	30,536	52%	48%
Anchorage	43,622	17,128	33,933	63%	37%
Kuskokwim	54,028	17,067	34,933	48%	52%
Northwest	56,797	17,344	38,679	41%	59%

FIGURE 4

AVERAGE COMPENSATION PER FTE TEACHER

Fiscal Year 1981

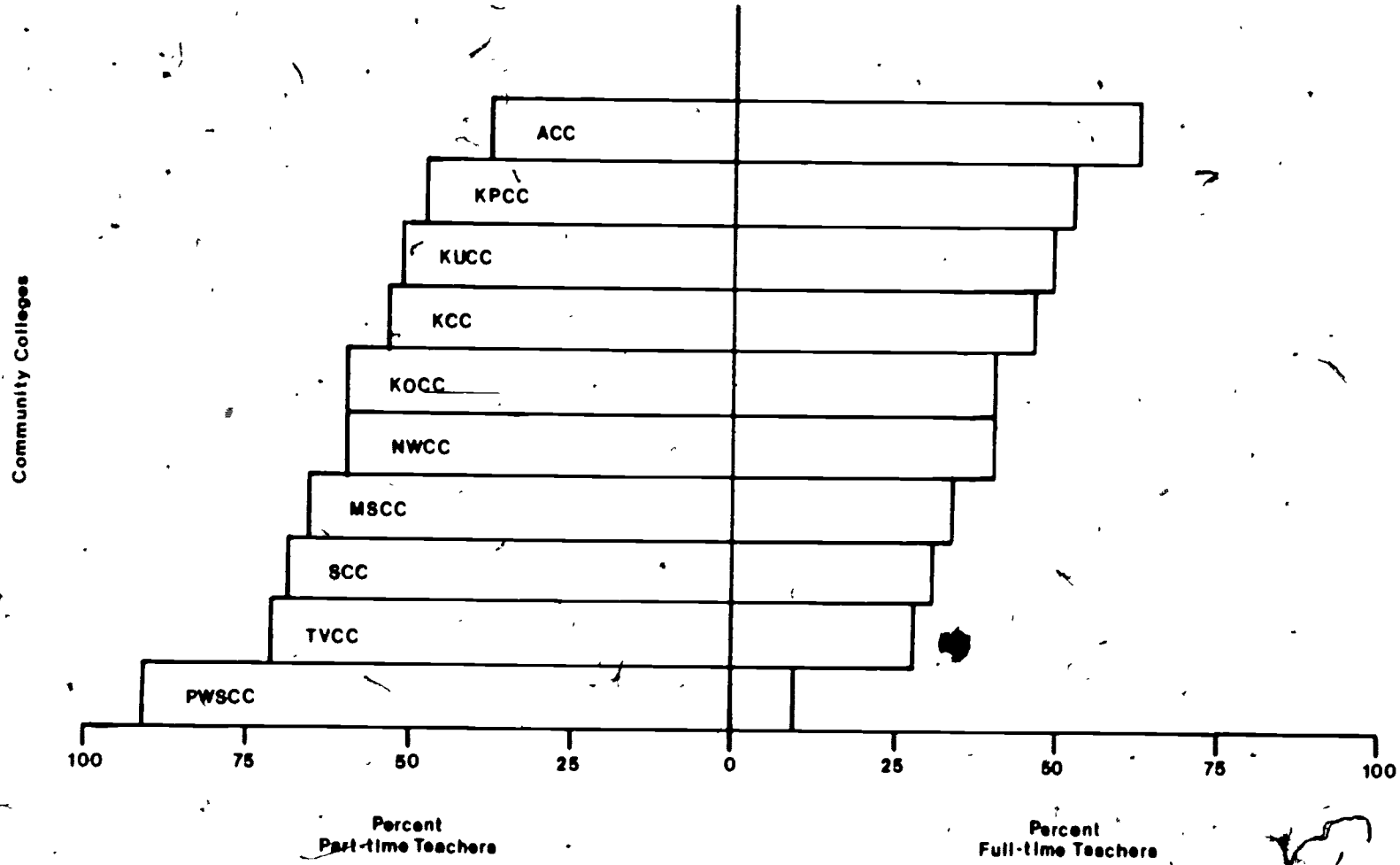


Unit Cost Study

FIGURE 5

DISTRIBUTION OF FTE TEACHERS

Fiscal Year 1981



Student/Teacher Ratio and Percentage Distribution of Teachers

It was noted in the two previous sections that two major factors in the determination of the cost for teaching FTE teacher compensation per FYE students is the student/teacher ratio and teacher compensation. The relationship between those two factors and cost is illustrated in Table 5. In general, the higher the student/teacher ratio the lower the cost and the higher the percentage of full-time FTE teachers the higher the cost. Tanana Valley Community College exhibits the lowest cost because it has the highest student/teacher ratio and a low percentage of full-time FTE teachers. Kuskokwim Community College, on the other hand, exhibits the highest cost because of a lower student/teacher ratio and a moderately high distribution of full-time FTE teachers. It should be noted that although Anchorage Community College has a higher distribution of full-time FTE teachers, the student/teacher ratio is also very high, therefore contributing to a lower cost.

TABLE 5

The Relationship of Student/Teacher Ratio and Percentage Distribution of Teachers to FTE Teacher Compensation Per FYE Student for Credit Courses

Fiscal Year 1981

	Teaching FTE Teacher Compensation Per FYE Student	Student Teacher Ratio	Percentage Distribution of FTE Teachers FT	PT
Tanana Valley	$1,621	20.2	29%	71%
Anchorage	2,021	20.1	63%	37%
Prince William Sound	2,036	8.9	9%	91%
Kenai Peninsula	2,430	14.2	52%	48%
Mat-Su	2,64[illegible]	11.5	34%	66%
Sitka	2,758	10.8	31%	69%
Kodiak	3,275	9.7	41%	59%
Ketchikan	3,278	10.4	46%	54%
Northwest	3,586	7.1	41%	59%
Kuskokwim	3,611	8.4	48%	52%

Total Direct Instructional Cost per FYE Student

Direct instructional support costs include such departmental, divisional, and/or college costs as other personnel compensation, equipment, supplies and other current expenses. Adding these amounts to the cost of teacher compensation (shown in Table 1) equals total direct instructional cost as outlined in Table 6.

After teacher compensation was calculated and related to the course categories and course levels, the direct support costs were distributed among the various instructional categories of the community colleges based on criteria outlined in the methodology presented in Appendix C. The information in Table 7 compares the differences of direct instructional costs per FYE student using Anchorage Community College as the base. It should be noted that a portion of the cost variance can be attributed to the effect of economy of scale. In other words, because Anchorage Community College has considerably more students than the rest of the community colleges, it is expected that their costs will be lower.

TABLE 6
Total Direct Instructional Cost Per FYE Student
Fiscal Year 1981

	Anchorage	Kenai Peninsula	Ketchikan	Kodiak	Kuskokwim	Mat-Su	Northwest	Prince Wm. Sound	Sitka	Tanana Valley	System Average
General Education											
First Year	$2,762	$3,351	$5,016	$6,736	$ 9,755	$3,433	$6,329	$6,991	$4,872	$3,600	$4,944
Second Year	3,596	3,219	5,904	6,655	8,170	4,711	9,433	6,990	5,012	4,013	5,458
Total General Education	2,948	3,309	5,213	6,719	9,391	3,790	7,091	6,991	4,902	3,657	5,058
Vocational Education											
First Year	3,111	3,873	4,598	6,114	11,276	5,006	8,387	6,893	3,710	3,950	4,802
Second Year	5,522	5,713	3,683	5,081	22,783	9,641	N/A	5,956	3,189	5,113	5,522
Total Vocational Education	3,641	4,396	4,478	5,984	12,207	5,865	8,387	6,692	3,657	4,159	5,172
Total All Credit Courses	3,174	3,740	4,852	6,462	10,040	4,507	7,628	6,874	4,461	3,942	4,680
Community Interest	2,793	2,743	1,817	4,166	17,818	2,731	7,153	4,715	2,464	2,649	2,768
Adult Basic Education	1,485	2,202	1,899	3,674	6,213	2,036	N/A	7,792	3,241	N/A	2,722
Total All Courses	$3,037	$3,705	$4,468	$5,627	$ 9,243	$4,339	$7,611	$6,338	$4,314	$3,785	$4,404

tka	Tanana Valley	System Average
872	$3,600	$4,944
012	4,013	5,458
902	3,657	5,058
710	3,950	4,802
189	5,113	5,522
657	4,159	5,172
461	3,942	4,680
464	2,649	2,768
241	N/A	2,722
314	$3,785	$4,404

TABLE [illegible]

Comparison of Direct Instructional [illegible] Per FYE Student Using
Anchorage Community College as Base (=1.00)
Fiscal Year 1981

	Anchorage	Kenai Peninsula	Ketchikan	Kodiak	Kuskokwim	Mat-Su	Northwest	Prince Wm. Sound	Sitka	Tanana Valley
General Education										
First Year	1.00	1.21	1.82	2.44	3.53	1.24	2.29	2.53	1.76	1.30
Second Year	1.00	.90	1.64	1.85	2.27	1.31	2.62	1.94	1.39	1.12
Total General Education	1.00	1.12	1.77	2.28	3.19	1.29	2.41	2.37	1.66	1.24
Vocational Education										
First Year	1.00	1.24	1.48	1.97	3.62	1.61	2.70	2.22	1.19	1.27
Second Year	1.00	1.03	.67	.92	4.13	1.75	N/A	1.08	.58	.93
Total Vocational Education	1.00	1.21	1.23	1.64	3.35	1.61	2.30	1.84	1.00	1.14
Total All Credit Courses	1.00	1.18	1.53	2.04	3.16	1.4[illegible]	[illegible].40	2.17	1.41	1.24
Community Interest	1.00	.98	.65	1.49	6.38	.98	2.56	1.69	[illegible].88	.95
Adult Basic Education	1.00	1.48	1.28	2.47	4.18	1.37	N/A	5.25	2.18	N/A
Total All Courses	1.00	1.22	1.47	1.85	3.04	1.43	2.51	2.09	1.42	1.26

Full Cost per FYE Student

Full operating costs, shown in Table 8, include instructional and other related costs which are attributed to the educational activities of students. The allocation of indirect costs (administration and plant, academic support, student services, etc.) is the final step in the process. In this allocation, the costs of the supporting programs are distributed based upon the criteria outlined in Appendix C. Here again, a high degree of variance is exhibited in Table 9 which compares the differences of full operating costs using Anchorage Community College as base. Figure 6 shows the comparison between direct instructional cost per FYE student and full operating cost per FYE student.

TABLE 8
Full Operating Cost Per FYE Student
Fiscal Year 1981

	Anchorage	Kenai Peninsula	Ketchikan	Kodiak	Kuskokwim	Mat-Su	Northwest	Prince Wm. Sound	Sitka	Tanana Valley	System Average
General Education											
First Year	$5,012	$5,076	$7,389	9,908	$14,467	$6,362	$11,838	$9,117	$7,225	$5,668	$7,307
Second Year	5,854	4,942	8,274	9,848	12,858	7,636	14,963	9,116	7,359	6,103	7,955
Total General Education	5,200	5,034	7,586	9,895	14,112	6,718	12,599	9,117	7,254	5,728	7,420
Vocational Education											
First Year	5,359	5,606	6,972	9,293	15,997	7,932	13,908	9,024	6,066	6,019	7,452
Second Year	7,786	7,447	6,072	8,264	27,343	12,555	N/A	8,072	5,554	7,189	7,786
Total Vocational Education	5,893	6,130	6,854	9,164	16,916	8,789	13,908	8,820	6,013	6,230	7,822
Total All Credit Courses	5,425	5,468	7,228	9,639	14,746	7,434	13,141	9,000	6,814	6,012	7,331
Community Interest	5,039	4,470	4,171	7,349	22,477	3,645	12,687	6,847	4,788	4,721	4,914
Adult Basic Education	3,733	3,874	4,296	6,846	10,909	4,814	N/A	9,917	5,598	N/A	5,206
Total All Courses	$5,288	$5,432	$6,842	$8,804	$13,944	$7,264	$13,125	$8,466	$6,666	$5,856	$7,053

TABLE 9

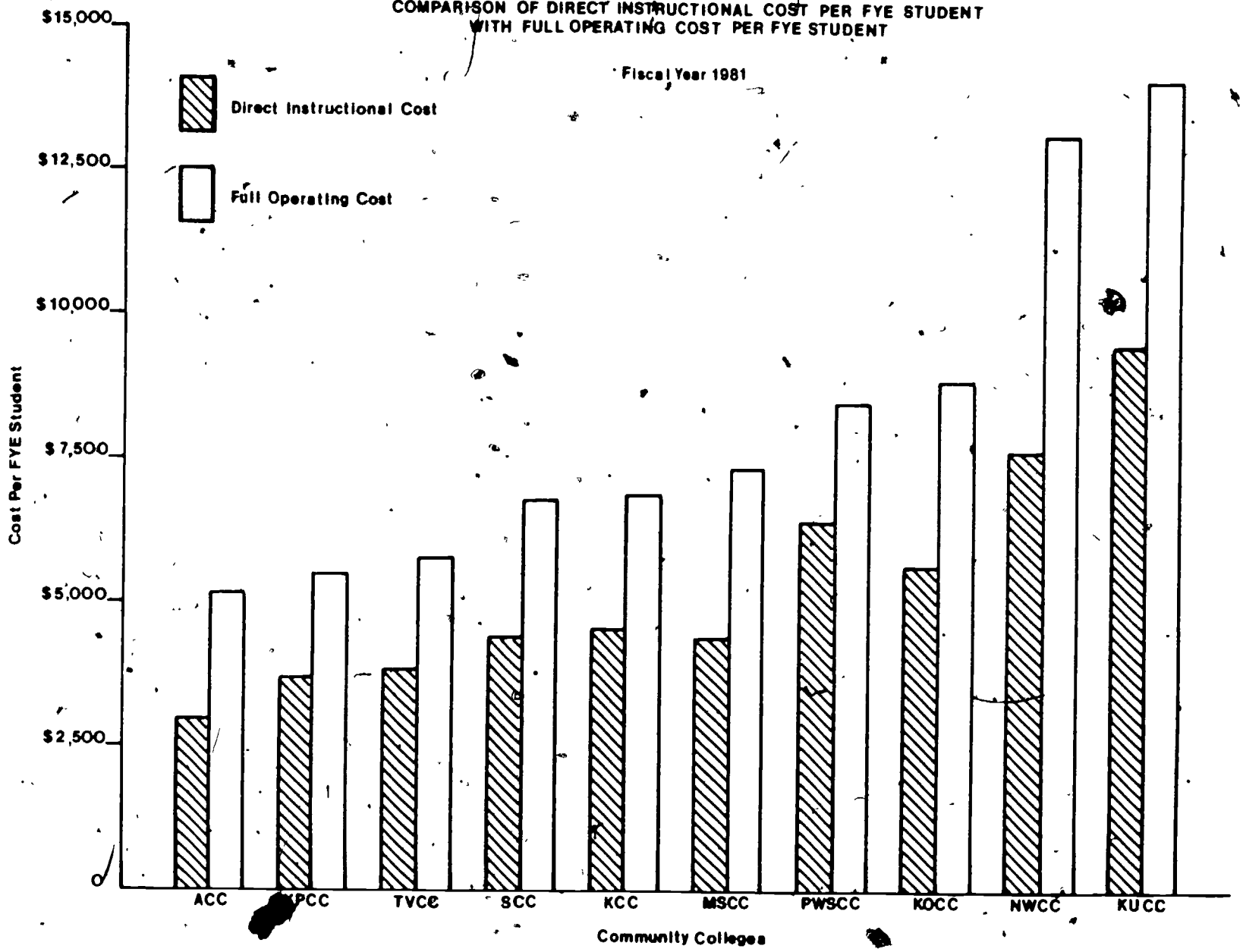
Comparison of Full Operating Costs Per FYE Student Using
Anchorage Community College as Base (=1.00)
Fiscal Year 1981

	Anchorage	Kenai Peninsula	Ketchikan	Kodiak	Kuskokwim	Mat-Su	Northwest	Prince Wm. Sound	Sitka	Tanana Valley
General Education										
First Year	1.00	1.01	1.47	1.68	2.89	1.27	2.36	1.82	1.44	1.13
Second Year	1.00	.84	1.41	1.68	2.70	1.30	2.56	1.56	1.26	1.04
Total General Education	1.00	.97	1.46	1.90	2.71	1.29	2.42	1.75	1.40	1.10
Vocational Education										
First Year	1.00	1.05	1.30	1.73	2.99	1.48	2.60	1.68	1.13	1.12
Second Year	1.00	.96	.78	1.06	3.51	1.61	N/A	1.04	.71	.92
Total Vocational Education	1.00	1.04	1.16	1.56	2.87	1.49	2.36	1.50	1.02	1.06
Total All Credit Courses	1.00	1.01	1.33	1.78	2.72	1.37	2.42	1.66	1.26	1.11
Community Interest	1.00	.89	.83	1.46	4.46	.71	2.52	1.36	.95	.94
Adult Basic Education	1.00	1.04	1.15	1.83	2.92	1.29	N/A	2.66	1.50	N/A
Total All Courses	1.00	1.03	1.29	1.66	2.64	1.37	2.48	1.60	1.26	1.11

FIGURE 6

COMPARISON OF DIRECT INSTRUCTIONAL COST PER FYE STUDENT
WITH FULL OPERATING COST PER FYE STUDENT

Fiscal Year 1981



Summary of Costs per FYE Student by Component

Table 10 provides a summary of both direct and indirect costs per FYE student by component. Total direct instructional cost per FYE student is the sum of FTE teacher compensation per FYE student and all other direct instructional costs per FYE student. Total indirect cost per FYE student is the sum of academic support, student services and plant and administration costs per FYE student.

In general, plant and administration costs are higher at the rural institutions, i.e., Kodiak, Kuskokwim and Northwest Community Colleges. The cost of student services per FYE student is consistently low for all institutions; however, academic support costs vary considerably.

TABLE 10
Summary of Costs Per FYE Student by Component
Fiscal Year 1981

	Instructional Component							
	FTE Teacher Compensation Per FYE Student	All Other Direct Inst. Cost Per FYE Student	Total Direct Inst. Per Cost FYE Student	Academic Support Cost Per FYE Student	Student Service Cost Per FYE Student	Plant & Admin. Cost Per FYE Student	Total Indirect Cost Per FYE Student	Full Cost Per FYE Student
Anchorage	$1,929	$1,108	$3,037	$693	$337	$1,221	$2,251	$5,288
Kenai Peninsula	2,411	1,294	3,705	231	388	1,108	1,727	5,432
Ketchikan	2,939	1,529	4,468	737	150	1,487	2,374	6,842
Kodiak	2,653	2,974	5,627	471	296	2,410	3,177	8,804
Kuskokwim	3,167	6,067	9,243	995	522	3,184	4,701	13,944
Mat-Su	2,507	1,832	4,339	627	238	2,060	2,925	7,264
Northwest	3,631	3,980	7,611	1,079	N/A	4,435	5,514	13,125
Prince Wm. Sd.	1,571	4,767	6,338	176	N/A	1,952	2,128	8,466
Sitka	2,664	1,650	4,314	928	197	1,227	2,352	6,666
Tanana Valley	1,493	2,292	3,785	692	104	1,275	2,071	5,856

Percentage Distribution of Fiscal Year 1981 Expenditures

Table 11 shows the distribution of expenditures by component for each community college. For the instructional component, total fund allocations ranged from a low of 58 percent at Anchorage and Northwest to a high of 74 percent at Prince William Sound. Academic support ranged from two percent at Prince Willam Sound to 14 percent at Sitka. Both Northwest and Prince William Sound allocated no funds to student services while Kenai allocated the most with 7 percent of their total expenditures. Plant and administration costs ranged from 18 percent at Sitka to 34 percent at Northwest.

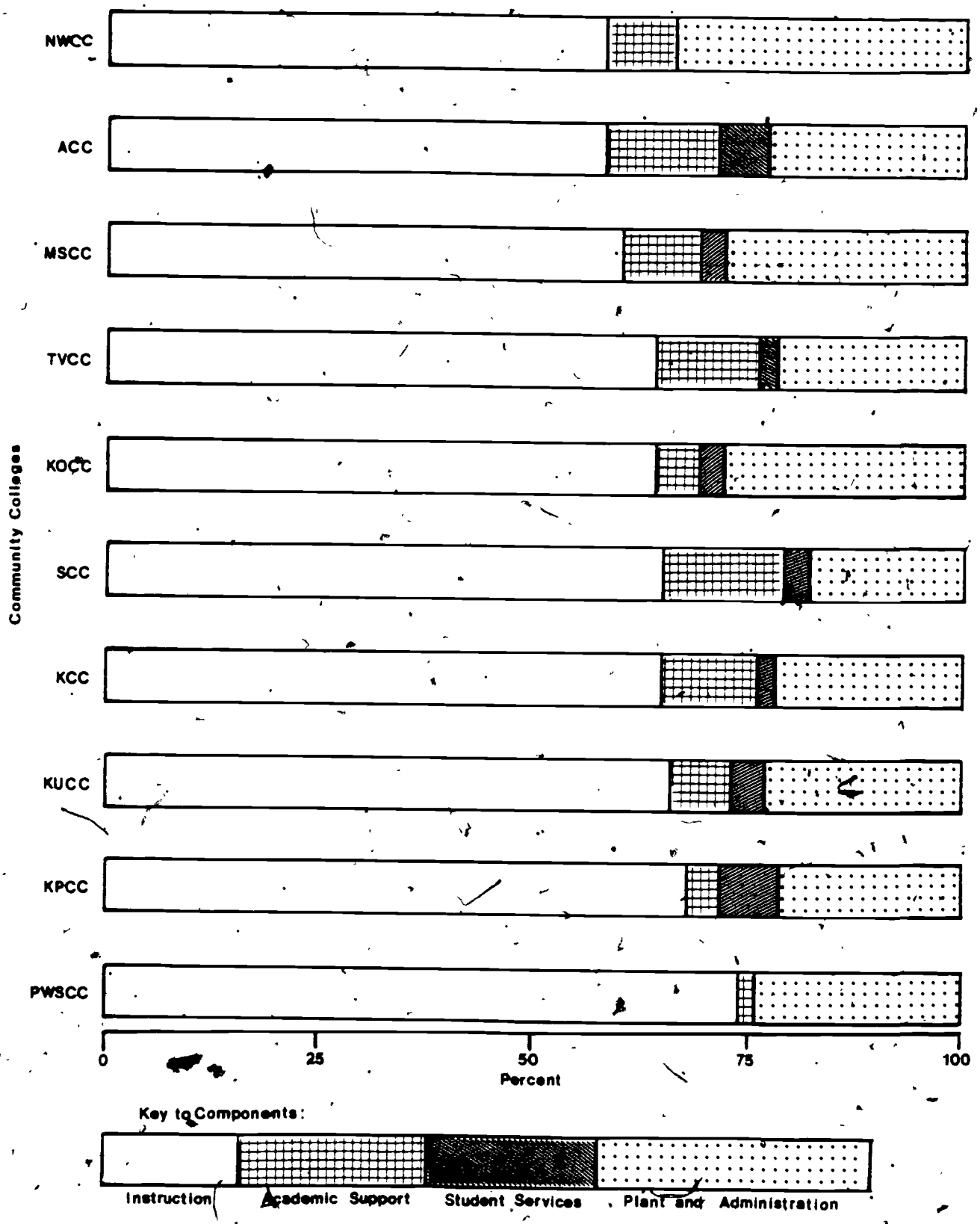
System totals for each of the components, when compared with the "1979-1980 Finances of 2-Year Colleges" reported in the June 8, 1981 issue of The Chronicle of Higher Education, indicate that in relation to national figures, the community colleges in Alaska distributed a greater percentage of expenditures to both instruction and academic support, and less to student services and plant and administration. Nationwide, community colleges with less than 5,000 FTE's had 53 percent of their operating funds allocated to instruction, 10 percent to academic support, 9 percent to student services, and 28 percent to plant and administration. In comparison, Alaskan community colleges allocated 61 percent of their operating funds to instruction, 11 percent to academic support, 5 percent to student services, and 23 percent to plant and administration. Figure 7 shows Alaska's allocation of funds in graph form and Figure 8 compares the allocation of funds for Alaska's community college system with the national average for community colleges.

TABLE 11
Percentage Distribution of Expenditures
for Alaska's Community Colleges
Fiscal Year 1981

	Anchorage	Kenai Peninsula	Ketchikan	Kodiak	Kuskokwim	Mat-Su	Northwest	Prince Wm. Sound	Sitka	Tanana Valley	System Total	National Average
Instruction												
Teacher Compensation	45%	54%	47%	35%	29%	38%	39%	19%	45%	29%	40	
Other	13	14	18	29	37	22	19	55	20	35	21	
Total Instruction	58	68	65	64	66	60	58	74	65	64	61	53
Academic Support	13	4	11	5	7	9	8	2	14	12	11	10
Student Services	6	7	2	3	4	3	0	0	3	2	5	9
Plant and Administration	23	21	22	28	23	28	34	24	18	22	23	28
Total	100	100	100	100	100	100	100	100	100	100	100	100

FIGURE 7

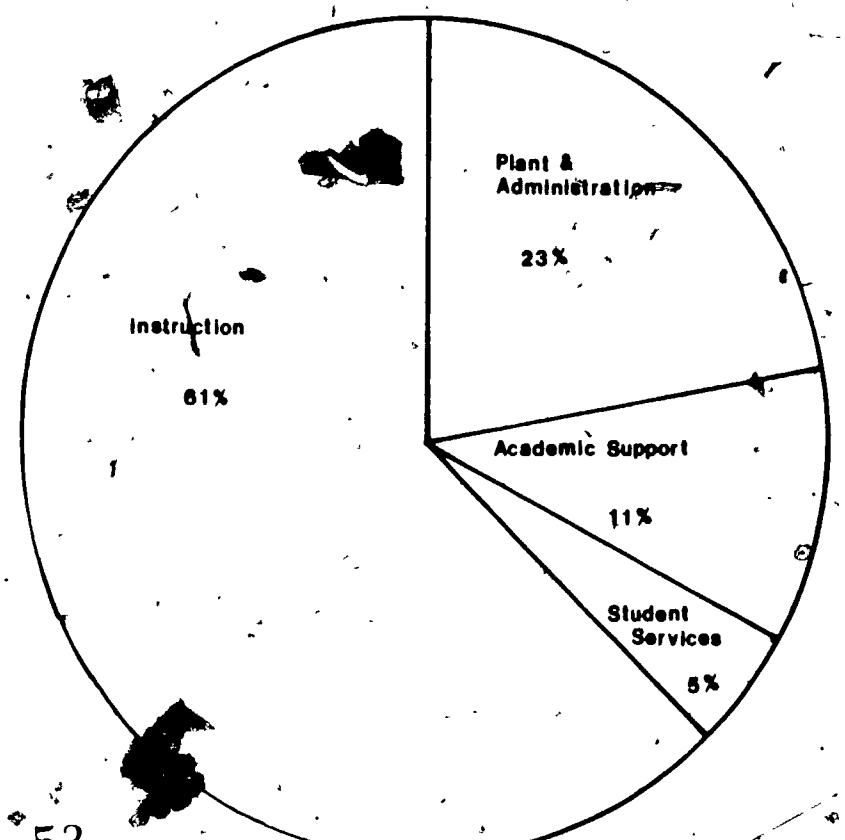
DISTRIBUTION OF FY 81 EXPENDITURES BY COMPONENT

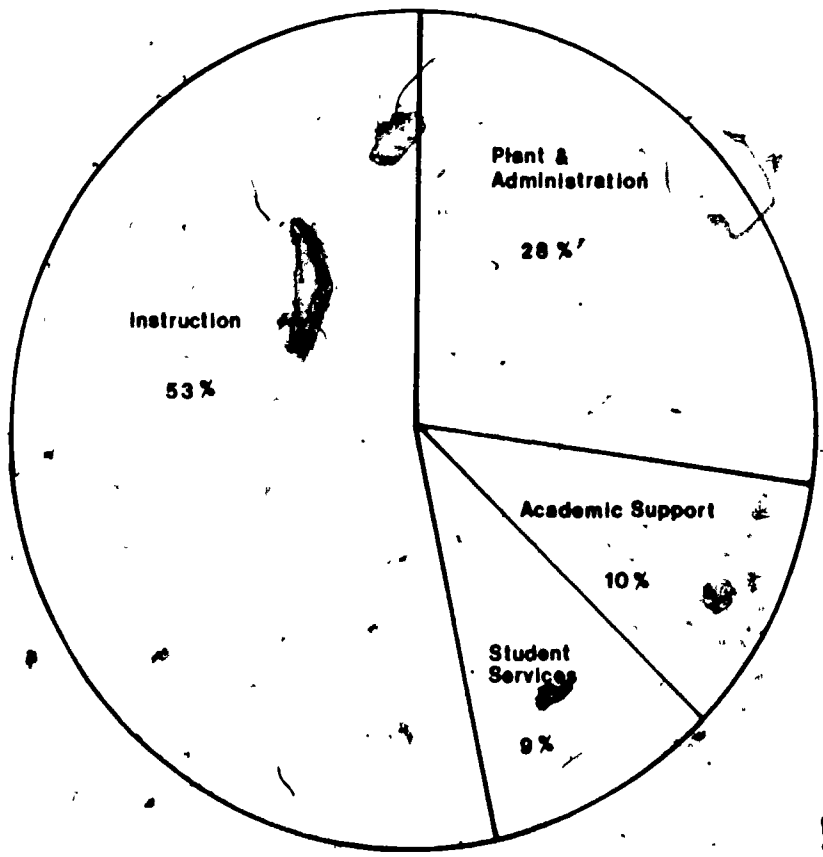


Cost Study

FIGURE 8

COMPARISON OF ALASKA'S SYSTEMWIDE COMMUNITY COLLEGE FY 81 EXPENDITURES WITH THE NATIONAL AVERAGE





SUMMARY

The primary benefit of this cost study is to generate insights for the improvement of resource allocation. Using financial, personnel, and academic data provided by the University of Alaska, this report describes costs directly related to teaching, costs supportive of the instructional process, and total operating costs.

It was shown on Tables 1 and 2 that the FTE teacher compensation per FYE student varies considerably among the community colleges. Those institutions that serve a large population in a relatively small geographical area have a lower cost than those colleges that serve a sparse population in a large geographical location. In particular, Anchorage Community College and Tanana Valley Community College have low costs relative to Kuskokwim Community College and Northwest Community College. However, other significant factors that influence this cost are the proportion of full-time and part-time FTE teachers and student/teacher ratio. Both factors must be taken into consideration as they relate to cost. For instance, Prince William Sound Community College has a relatively low student/teacher ratio which would tend to increase cost. On the other hand, only nine percent of the FTE teachers are full-time. As a consequence, Prince William Sound's cost of teacher compensation per FYE student is among the lowest of all the community colleges. Conversely, Northwest Community College and Kuskokwim Community College have low student/teacher ratios and relatively high percentages of full-time FTE teachers and therefore exhibit high unit costs. Additionally, the base salary of community college teachers is multiplied by varying cost of living differentials. Northwest Community College and Kuskokwim Community College have the highest differentials and this tends to raise the cost even more.

Although it is a general rule that second-year courses cost more than first-year courses, both in general education and vocational education, this did not apply at every institution. Another finding is that vocational education courses are not necessarily more costly than general education courses. If the depreciation expense of equipment could have been calculated, however, vocational courses may have shown considerably more cost.

When focusing upon direct instructional cost per FYE student the effect of "economy of scale" can be seen to some extent. Increases in organizational size tend to lower unit cost and thus yield economies of scale. For instance, a college may acquire a computer, specialized administrative officials such as a dean or a business manager, or a new program, and even though these acquisitions require a large initial cost, as enrollment grows the cost is spread over more students and thus unit costs tend to fall. Large enrollments also increase the average size of classes by raising the number of students in the less populated courses. In general, then, the larger the institution, the greater its ability to use expensive acquisitions to capacity and thus to reap the economies of scale.

Although there is not a direct linear relationship between the number of FYE students enrolled and the direct instructional cost per FYE student, there is a strong relationship. For instance, Anchorage Community College, with an FYE student enrollment of 3,457, experienced a direct instructional cost of $3,037. Northwest Community College, with an FYE student enrollment of 73, had a direct instructional cost per FYE student of $7,611. The point here is that economy of scale is an important factor to recognize when looking at direct instructional costs.

When focusing upon the full operating cost per FYE student, one can see that although there is some degree of variation among community colleges, it is not as pronounced as the direct instructional cost. It is apparent that there is a greater degree of consistency among the support costs such as academic support, student services and plant and administration.

When comparing the community colleges in Alaska with other two-year institutions across the nation, it was shown that, in Alaska, a greater percentage of expenditures was distributed to both instruction and academic support and less to student services and plant and administration. These data, however, should be read with some skepticism because of the difficulty of comparing similar characteristics. In other words, this comparison should not be used as a justification for raising or lowering relative expenditures in the Alaskan community colleges. They were included in this report to merely provide some index of the expenditure characteristics of the Alaskan community colleges as they relate to community colleges nationwide. These data do show, however, that the student services components of all of the Alaskan community colleges may be somewhat low and further study may be required to determine if the low proportion of expenditure is having a deleterious effect upon those components. Since community colleges have as an integral part of their mission student support services, it would seem that this component would be somewhat higher for the state's community colleges than was exhibited in this study.

This study focused on institutional expenditures for the education of students. The educational function includes not only direct instruction, but also those portions of other instructional costs that may properly be allocated to the education and the welfare of students. In general, the intent is to isolate those educational costs of institutions from expenses that are not related to the education and welfare of students. These would include public service and auxiliary enterprises. Those expenditures are excluded to limit this study to manageable proportions and to facilitate comparisons among the community colleges, not because they are unimportant.

The cost of producing a unit of instruction is a by-product of college policies, such as teacher salary levels and teaching load requirements. Increase salary levels and/or reduce teaching load requirements and the cost of producing a fixed number of instructional units will rise. Decrease or hold constant the average salary level of the teachers and increase the teaching load, and the cost of producing the same number of instructional units will go down.

A significant finding of this study is that the community colleges in Alaska spend their money in different ways and experience different costs per FYE student. This should not be surprising however, because the colleges are different in several respects. Needs of their respective constituencies, educational delivery systems, service areas, cost of living differentials, and program emphases are some areas which vary and would have an impact upon cost.

It is important to note that the question of what higher education ought to cost - what is the minimal amount needed to provide services of acceptable quality - is not answered here. This is primarily because there is little or no information concerning the true outcomes of higher education.

Howard R. Bowen, in his study concerning the costs of higher education for the Carnegie Council on Policy Studies in Higher Education, expresses this in direct language:

> "Knowledge of costs, or even of costs per student unit, give precious little information that is relevant to either accountability or administration unless accompanied by knowledge of outcomes. There is no way for higher education to become properly accountable without knowledge of the overall results from institutional efforts." (p. 168)

Although outcomes ideally should be calculated, our knowledge of such outcomes is lamentably feeble and it is not possible to count costs in terms of true outcomes. Thus, the student credit hour is used as a proxy for true outcomes. Since the student credit hour is utilized as the measurement for cost, the reader should be cognizant of an error frequently committed by critics of higher education. That is to judge efficiency only in relation to cost. It is wrong to assume that an institution that can educate a student for $3,000 a year is more efficient than one which spends $4,000 per student. The question of which is more efficient can be answered only when something is known about the outcomes.

Perhaps it is appropriate to end this discussion with another quote from Howard Bowen:

> "How can the quality of American higher education be improved, not only for its traditional students but especially for the growing numbers of low-income youth, part-time commuters, and adult learners? All these questions have financial dimensions. Thus, the most all-embracing question is: How much money may be needed to operate the American system of higher education at a reasonable level?" (page xiv)

It is with this question in relation to the Alaskan community colleges that this study is concerned.

APPENDIX A

A Profile of Each Community College

Information contained in the following tables provides a summary of student, teacher, and cost data for each community college for FY 1980-81. It is from these data that many of the tables in this report have been derived. They are presented here to show a composite picture of each community college. An explanation of each table column follows.

FYE Students

This column represents Fiscal Year Equated (FYE) students produced during the Fiscal Year 1981. A Fiscal Year Equated (FYE) student is a hypothetical student who carries 34 credit hours per fiscal year.

FTE Teacher

A full-time equivalent (FTE) teacher is a hypothetical teacher who teaches 15 semester hours during each semester of the academic year.

Student/Teacher Ratio

This ratio is the quotient derived by dividing the number of Fall FTE students by the total number of Fall FTE teachers. An FTE student is a hypothetical student who enrolls for 15 credit hours a semester for the academic year.

FTE Teacher Compensation/FYE Student

These costs represent the portion of the teachers' workload which has been attributed to the courses which they teach. That portion of the teachers' workload attributed to activities other than teaching is not included. Also, no supporting costs, e.g., clerical services, supplies, equipment, etc. are included. The costs are divided by the number of FYE students.

Total Direct Instruction Cost/FYE Student

Direct instructional costs are those that can be specifically identified with the instructional component. Direct support costs within the instructional component include such costs as other personnel compensation (clerical staff, administrators), equipment, supplies, and other current expenses. The addition of these amounts to teachers' compensation equals total direct instructional cost per FYE student.

Full Operating Cost/FYE Student

Full cost is the sum of direct instructional cost and those indirect costs not directly attributable to instruction. The indirect costs include components such as plant and administration, academic support, and student services.

Percentage Distribution of FTE Teachers

This represents the proportion of Fall full-time FTE teachers and part-time FTE teachers teaching courses.

Average Teacher Compensation

This shows the average FTE teacher compensation for both full-time teachers and part-time teachers for the academic year.

TABLE 12
Anchorage Community College
Fiscal Year 1981

	FYE Students	Teaching FTE Teachers	Student Faculty Ratio	FTE Teacher Compensation Per FYE Student	Total Direct Instruct. Cost Per FYE Student	Full Operating Cost Per FYE Student	Percentage Distribution of FTE Teachers Full-Time	Percentage Distribution of FTE Teachers Part-Time	Average FTE Teacher Compensation Full-Time	Average FTE Teacher Compensation Part-Time
General Education										
First Year	1,633	68.9	23.7	$1,645	$2,762	$5,012	56%	44%	$45,388	$17,096
Second Year	469	26.2	17.9	2,399	3,596	5,854	64%	36%	45,231	17,740
Total General Education	2,102	95.1	22.1	1,813	2,948	5,200	58%	42%	45,344	17,234
Vocational Education										
First Year	793	40.5	19.6	1,984	3,111	5,359	65%	35%	40,782	16,867
Second Year	223	19.7	11.3	4,109	5,522	7,786	88%	12%	42,264	16,828
Total Vocational Education	1,016	60.2	16.9	2,451	3,641	5,893	72%	28%	41,354	16,861
Total - All Credit Courses	3,118	155.3	20.1	2,021	3,174	5,425	63%	37%	43,622	17,128
Community Interest										
Non-Credit	76	6.4	11.8	2,099	2,793	5,039	9%	91%	44,610	19,775
Adult Basic Education										
Non-Credit	263	5.8	45.6	791	1,485	3,733	63%	37%	41,531	15,168
Total-All Courses	3,457	167.5	20.6	$1,929	$3,037	$5,288	62%	38%	$43,602	$17,210

TABLE 13
Kenai Peninsula Community College
Fiscal Year 1981

	FYE Students	Teaching FTE Teachers	Student Faculty Ratio	FTE Teacher Compensation Per FYE Student	Total Direct Instruct. Cost Per FYE Student	Full Operating Cost Per FYE Student	Percentage Distribution of FTE Teachers		Average FTE Teacher Compensation	
							Full-Time	Part-Time	Full-Time	Part-Time
General Education										
First Year	163	10.5	15.5	$2,229	$3,351	$5,076	48%	52%	$45,095	$16,432
Second Year	76	6.2	12.3	2,129	3,219	4,942	31%	69%	44,653	15,052
Total General Education	239	16.7	14.3	2,198	3,309	5,034	43%	57%	44,997	15,915
Vocational Education										
First Year	112	7.0	16.0	2,294	3,873	5,606	61%	39%	41,543	18,024
Second Year	45	4.3	10.6	4,014	5,713	7,447	78%	22%	43,038	16,599
Total Vocational Education	157	11.3	13.9	2,784	4,396	6,130	67%	33%	42,113	17,722
Total - All Credit Courses	396	28.0	14.2	2,430	3,740	5,468	52%	48%	43,562	16,400
Community Interest Non-Credit	7	1.2	5.8	2,006	2,743	4,470	23%	77%	45,150	1,500
Adult Basic Education Non-Credit	5	.5	10.0	1,489	2,202	3,874	0%	100%	N/A	17,512
Total-All Courses	408	29.7	13.7	$2,411	$3,705	$5,432	51%	49%	$43,574	$16,039

TABLE 14
Ketchikan Community College
Fiscal Year 1981

	FYE Students	Teaching FTE Teachers	Student Faculty Ratio	FTE Teacher Compensation Per FYE Student	Total Direct Instruct. Cost Per FYE Student	Full Operating Cost Per FYE Student	Percentage Distribution of FTE Teachers Full-Time	Part-Time	Average FTE Teacher Compensation Full-Time	Part-Time
General Education										
First Year	61	5.8	10.5	$3,469	$5,016	$7,389	43%	57%	$46,302	$16,447
Second Year	17	2.6	6.5	4,282	5,904	8,274	40%	60%	43,753	11,927
Total General Education	78	8.4	9.3	3,650	5,213	7,586	43%	57%	45,682	15,228
Vocational Education										
First Year	65	5.6	11.6	2,979	4,598	6,972	50%	50%	37,579	17,776
Second Year	10	.7	13.9	2,294	3,683	6,072	44%	56%	28,260	17,512
Total Vocational Education	75	6.3	11.9	2,889	4,478	6,854	50%	50%	37,142	17,760
Total - All Credit Courses	153	14.7	10.4	3,278	4,852	7,228	46%	54%	41,336	16,327
Community Interest Non-Credit	11	.7	16.5	623	1,817	4,171	13%	87%	33,636	5,108
Adult Basic Education Non-Credit	11	2.0	5.5	679	1,899	4,296	0%	100%	N/A	3,296
Total All Courses	175	17.4	10.1	$2,939	$4,468	$6,842	35%	65%	$41,211	$11,531

TABLE 15
Kodiak Community College
Fiscal Year 1981

	FYE Students	Teaching FTE Teachers	Student Faculty Ratio	FTE Teacher Compensation Per FYE Student	Total Direct Instruct. Cost Per FYE Student	Full Operating Cost Per FYE Student	Percentage Distribution of FTE Teachers Full-Time	Part-Time	Average FTE Teacher Compensation Full-Time	Part-Time
General Education										
First Year	62	6.5	9.6	$3,553	$6,736	$9,908	38%	62%	$48,528	$16,697
Second Year	17	1.9	9.1	3,653	6,655	9,848	39%	61%	51,462	19,078
Total General Education	79	8.4	9.4	3,574	6,719	9,895	38%	62%	48,989	17,055
Vocational Education										
First Year	37	3.6	10.2	2,868	6,114	9,293	57%	43%	36,683	14,709
Second Year	5	.5	10.5	1,667	5,081	8,264	13%	87%	47,858	11,794
Total Vocational Education	42	4.1	10.2	2,717	5,984	9,164	48%	52%	37,314	13,211
Total - All Credit Courses	121	12.5	9.7	3,275	6,462	9,639	41%	59%	44,921	16,165
Community Interest Non-Credit	18	3.0	6.1	1,646	4,166	7,349	15%	85%	47,433	2,912
Adult Basic Education Non-Credit	38	1.7	21.9	1,160	3,674	6,846	100%	0%	22,534	N/A
Total-All Courses	177	17.2	10.3	$2,653	$5,627	$8,804	44%	56%	$39,864	$13,868

TABLE 16
Kuskokwim Community College
Fiscal Year 1981

	FYE Students	Teaching FTE Teachers	Student Faculty Ratio	FTE Teacher Compensation Per FYE Student	Total Direct Instruct. Cost Per FYE Student	Full Operating Cost Per FYE Student	Percentage Distribution of FTE Teachers		Average FTE Teacher Compensation	
							Full-Time	Part-Time	Full-Time	Part-Time
General Education										
First Year	105	13.1	8.0	$3,310	$9,755	$14,467	36%	64%	$53,561	$17,291
Second Year	31	2.5	12.3	2,149	8,170	12,858	44%	56%	63,568	15,353
Total General Education	136	15.6	8.7	3,044	9,391	14,112	38%	62%	55,712	16,971
Vocational Education										
First Year	38	4.9	7.7	4,611	11,276	15,997	73%	27%	50,323	17,715
Second Year	3	.6	4.8	15,694	22,783	27,343	100%	0%	61,549	N/A
Total Vocational Education	41	5.5	7.4	5,508	12,207	16,916	76%	24%	51,821	17,715
Total - All Credit Courses	177	21.1	8.4	3,611	10,040	14,746	48%	52%	54,028	17,067
Community Interest Non-Credit	11	2.5	4.4	12,702	17,818	22,477	90%	10%	55,860	6,918
Adult Basic Education Non-Credit	78	4.9	15.9	792	6,213	10,909	20%	80%	31,665	5,870
Total-All Courses	266	28.5	9.3	$3,167	$9,243	$13,944	41%	59%	$50,729	$12,246

TABLE 17
Mat-Su Community College
Fiscal Year 1981

	FYE Students	Teaching FTE Teachers	Student Faculty Ratio	FTE Teacher Compensation Per FYE Student	Total Direct Instruct. Cost Per FYE Student	Full Operating Cost Per FYE Student	Percentage Distribution of FTE Teachers Full-Time	Percentage Distribution of FTE Teachers Part-Time	Average FTE Teacher Compensation Full-Time	Average FTE Teacher Compensation Part-Time
General Education										
First Year	67	4.4	15.4	$1,680	$3,433	$6,362	22%	78%	$41,248	$17,519
Second Year	26	2.8	9.4	2,986	4,711	7,636	22%	78%	41,692	17,918
Total General Education	93	7.2	12.9	2,045	3,790	6,718	22%	78%	41,334	17,620
Vocational Education										
First Year	40	3.8	10.6	2,986	5,006	7,932	35%	65%	46,492	16,275
Second Year	9	1.4	6.3	7,303	9,641	12,555	88%	12%	44,237	18,989
Total Vocational Education	49	5.2	9.4	3,786	5,865	8,789	50%	50%	45,392	16,463
Total - All Credit Courses	142	12.4	11.5	2,647	4,507	7,434	34%	66%	43,934	17,228
Community Interest Non-Credit	13	2.4	5.5	1,173	2,731	5,645	0%	100%	N/A	5,858
Adult Basic Education Non-Credit	1	.1	7.9	552	2,036	4,814	0%	100%	N/A	3,334
Total-All Courses	156	14.9	10.5	$2,507	$4,339	$7,264	28%	72%	$43,934	$14,359

TABLE T8
Northwest Community College
Fiscal Year 1981

	FYE Students	Teaching FTE Teachers	Student Faculty Ratio	FTE Teacher Compensation Per FYE Student	Total Direct Instruct. Cost Per FYE Student	Full Operating Cost Per FYE Student	Percentage Distribution of FTE Teachers Full-Time	Percentage Distribution of FTE Teachers Part-Time	Average FTE Teacher Compensation Full-Time	Average FTE Teacher Compensation Part-Time
General Education										
First Year	31	4.6	6.7	$3,609	$6,329	$11,838	28%	72%	$51,994	$17,680
Second Year	10	2.4	4.2	6,327	9,433	14,963	31%	69%	53,208	16,613
Total General Education	41	7.0	5.9	4,277	7,091	12,599	29%	71%	52,488	17,285
Vocational Education										
First Year	29	2.8	10.5	2,610	8,387	13,908	66%	34%	60,589	17,588
Second Year	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total Vocational Education	29	2.8	10.5	2,610	8,387	13,908	66%	34%	60,589	17,588
Total - All Credit Courses	70	9.8	7.1	3,586	7,628	13,141	41%	59%	56,797	17,344
Community Interest Non-Credit	3	.7	4.4	4,841	7,153	12,687	N/A	100%	N/A	16,098
Adult Basic Education Non-Credit	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total-All Courses	73	10.5	7.0	$3,631	$7,611	$13,125	40%	60%	$56,797	$17,273

TABLE 19
Prince William Sound Community College
Fiscal Year 1981

	FYE Students	Teaching FTE Teachers	Student Faculty Ratio	FTE Teacher Compensation Per FYE Student	Total Direct Instruct. Cost Per FYE Student	Full Operating Cost Per FYE Student	Percentage Distribution of FTE Teachers Full-Time	Part-Time	Average FTE Teacher Compensation Full-Time	Part-Time
General Education										
First Year	32	3.2	10.0	$2,048	$6,991	$9,117	7%	93%	37,883	16,611
Second Year	14	1.9	7.4	1,968	6,990	9,116	14%	86%	37,883	15,974
Total General Education	46	5.1	9.0	2,024	6,991	9,117	9%	91%	37,883	16,396
Vocational Education										
First Year	23	2.9	7.9	2,248	6,893	9,824	11%	89%	37,883	18,118
Second Year	6	.4	14.8	1,345	5,956	8,072	0%	100%	0	17,296
Total Vocational Education	29	3.3	8.8	2,054	6,692	8,820	9%	91%	37,883	18,004
Total - All Credit Courses	75	8.4	8.9	2,036	6,874	9,000	9%	91%	37,883	16,944
Community Interest Non-Credit	33	1.4	24.3	70	4,715	6,847	0%	100%	N/A	1,510
Adult Basic Education Non-Credit	10	.3	39.0	3,159	7,792	9,917	100%	0%	44,857	N/A
Total-All Courses	118	10.1	11.7	$1,571	$6,338	$8,466	12%	88%	$40,599	$12,687

TABLE 20
Sitka Community College
Fiscal Year 1981

	FYE Students	Teaching FTE Teachers	Student Faculty Ratio	FTE Teacher Compensation Per FYE Student	Total Direct Instruct. Cost Per FYE Student	Full Operating Cost Per FYE Student	Percentage Distribution of FTE Teachers Full-Time	Percentage Distribution of FTE Teachers Part-Time	Average FTE Teacher Compensation Full-Time	Average FTE Teacher Compensation Part-Time
General Education										
First Year	57	5.9	9.7	$2,927	$4,872	$7,225	30%	70%	41,925	17,009
Second Year	16	1.6	9.8	3,329	5,012	7,359	46%	54%	42,120	17,620
Total General Education	73	7.5	9.7	3,014	4,902	7,254	32%	68%	41,962	17,074
Vocational Education										
First Year	36	2.8	13.0	2,354	3,710	6,066	32%	68%	41,823	16,410
Second Year	4	.2	15.8	1,750	3,189	5,554	11%	89%	43,388	17,741
Total Vocational Education	40	3.0	13.3	2,292	3,657	6,013	29%	71%	41,895	16,623
Total - All Credit Courses	113	10.5	10.8	2,758	4,461	6,814	31%	69%	41,946	16,952
Community Interest Non-Credit	5	.6	9.0	1,171	2,464	4,788	0%	100%	N/A	9,971
Adult Basic Education Non-Credit	7	.4	20.0	2,088	3,241	5,598	0%	100%	N/A	35,803
Total-All Courses	125	11.6	10.8	$2,664	$4,314	$6,666	29%	71%	$41,946	$17,169

TABLE 21
Tanana Valley Community College
Fiscal Year 1981

	FYE Students	Teaching FTE Teachers	Student Faculty Ratio	FTE Teacher Compensation Per FYE Student	Total Direct Instruct. Cost Per FYE Student	Full Operating Cost Per FYE Student	Percentage Distribution of FTE Teachers Full-Time	Part-Time	Average FTE Teacher Compensation Full-Time	Part-Time
General Education										
First Year	240	13.1	18.3	$1,396	$3,600	$5,668	12%	88%	$42,237	$15,619
Second Year	38	2.9	13.1	1,705	4,013	6,103	8%	92%	45,650	12,146
Total General Education	278	16.0	17.2	1,439	3,657	5,728	11%	89%	42,765	14,867
Vocational Education										
First Year	298	12.2	24.4	1,556	3,950	6,019	41%	59%	38,992	14,877
Second Year	66	3.6	18.6	2,690	5,113	7,189	62%	38%	44,838	16,044
Total Vocational Education	364	15.8	23.2	1,760	4,159	6,230	45%	55%	40,521	15,029
Total-All Credit Courses	642	31.8	20.2	1,621	3,942	6,012	29%	71%	40,944	14,931
Community Interest Non-Credit	88	13.8	6.4	564	2,649	4,721	1%	99%	40,000	3,081
Adult Basic Education Non-Credit	0	0	0	0	0	0	0	0	0	0
Total - All Courses	730	45.6	16.0	$1,493	$3,785	$5,856	22%	78%	$40,941	$11,563

APPENDIX B

METHODOLOGY

Data for the 1980 fall semester were collected to determine the direct cost of teacher compensation and related fringe benefits per student credit hour for each course section, both credit and non-credit, at each of the community colleges. These data included the end of semester class schedules, faculty activity analysis reports, a salary listing of the bargaining unit members, University of Alaska Budget Personnel Positions by Department computer printout, a class list and salary report form for non-bargaining unit members, and a community interest courses form.

The allocation of FTE teacher and proportional teacher compensation to each course section was based upon course credit hours. The allocation for independent study courses and special topic courses, however, was based on the percentage of student credit hours of those courses in relation to total student credit hours generated by the teacher. The course credit hour equivalency for non-credit courses was based on the following formula: (Number of students enrolled) x (Hours of class contact per week) x (Number of weeks) ÷ 30. A cost of $550 per credit hour was assigned to those courses that were offered but funded externally to the budget request units. Also those courses taught by full-time personnel other than bargaining unit members were assigned a cost of $550 per credit hour.

After the direct costs were determined for fall 1980, the costs were used to determine the total FY 1980-81 cost using actual expenditures for the instructional component. The allocation of instructional expenditures other than teacher compensation was based upon the proportion of the sum of FTE teacher and FYE students for each course category. The allocation of indirect expenditures followed two methods.

Student services expenditures were allocated based upon proportional course enrollments. Academic support and plant and administration expenditures were based upon the proportion of the sum of FTE teacher and FYE students. Rentals-for-space-only were eliminated from the plant and administration expenditures and were therefore not used in the determination of costs.

Both Anchorage Community College and Tanana Valley Community College share facilities with University of Alaska, Anchorage and University of Alaska, Fairbanks respectively. The determination for the appropriate amount of shared expenditures for these two campuses was ascertained by the University. The determination of costs utilized the same method that had been developed for completing House Research Agency Report 80-6, The University of Alaska: An Overview of Programs and Expenditures.

Actual total unrestricted expenditures by component for FY 1980-81 were provided by the University on October 7, 1981.. In addition, those grants and contracts relating to the instructional component were identified by university officials and incorporated into the total costs for the fiscal year. Since it is necessary to separate educational expenditures from outlays for non-instructional purposes, the following components were used: instruction, academic support, student services, and plant and administration. Expenditures for public service and auxiliary enterprises were excluded.

APPENDIX C

STATE OF
WASHINGTON

COUNCIL FOR POSTSECONDARY EDUCATION
908 E 5th Avenue Olympia Washington 98504

Chalmers Gail Norris, Executive Coordinator

April 27, 1981

The Honorable Thelma Bucholdt
House of Representatives
Pouch V
Juneau, AK 99801

Dear Representative Bucholdt:

On April 22 through 24 I reviewed and assisted Dr. Ron Phipps with the development of principle, criteria and procedures for the Community College Expenditure Analysis as directed by your study mandate. I had reviewed the outline of the study design with Dr. Phipps earlier in April in Olympia. I am pleased to advise you that Dr. Phipps has done an excellent job of developing an approach to collecting the necessary data from a variety of sources which should enable him to meet the study objectives.

My review and recommendations were based on the assumption that direct faculty full time equivalency and costs by instructional category and subsequent relationships to student credit hours are available for only fall semester 1980 given the time constraints of the study. In my judgment, it would be preferable to use detailed information for each academic term. However, the fall term information, extrapolated to the total budget for faculty salaries and benefits for the year, should serve as a reasonable basis for determining direct faculty expenditures per student and for allocating support and indirect costs. This opinion is based on a review of available data and the enclosed "Principles and Procedures for the Community College Expenditure Analysis."

At this time it is my understanding that the issue of equipment expenditures is still to be resolved. However, the alternatives I have discussed with Dr. Phipps should provide an acceptable measure of current equipment expenditures for the various instructional categories under review.

If I can be of further help or should you or your committee have any questions, please feel free to contact me.

Sincerely,

Denis Curry
Deputy Coordinator for Finance

clh

enc

cc: Ron Phipps

APPENDIX D

UNIVERSITY OF ALASKA
Statewide System of Higher Education
Fairbanks, Alaska 99701

June 5, 1981

Dr. Ron Phipps
Director for Academic Planning & Research
Alaska Commission on Post-Secondary Education
State of Alaska
Pouch F - State Office Building
Juneau, Alaska 99811

Dear Ron:

Thank you for your May 18, 1981 letter which summarized the results of our May 14, 1981 meeting. Your letter accurately reflects the decisions agreed upon at that meeting. We agree with the principles and procedures that are being used to develop the Unit Cost Study.

Notwithstanding the foregoing paragraph, we want to do some additional research on Modification A. That is, assignment of $550.00 per credit hour for courses that were offered but funded external to the BRU. The part-time instructor costing method may be the only reasonable approach in this area; however, we do want to explore the possibility of alternative costing methods which may result in a more realistic cost. We will keep you informed of our research.

The university's M22X series of reports can provide you with expenditure information by minor object code. That is, it can provide expenditure information on each type of expenditure (e.g., faculty salaries, executive and administrative salaries, clerical and secretarial salaries, leave benefits and staff benefits). This report will be sent to you along with the other expenditure data during late August, 1981.

The narrative portion of the report will be critical to ensure that the readers properly understand the report methodology. Consequently, we accept and appreciate your offer to allow us to comment on this part of the report before it is finalized.

Thank you for taking the time to review the methodology of your study with us. We feel that the final product will accurately reflect university costs and that the report will be very beneficial to everybody.

If there is anything that I can help you with, please let me know.

Sincerely,

Ashok K. Dhingra
Associate Vice President for Finance

AKD/pe
cc: Tim Russell
Rudy Fernandez
Tom Healy
Don Myers

APPENDIX E

Vocational Courses Offered by Alaska's Community Colleges

ADT - Auto/Diesel Technology
AET - Architectural and Engineering Technology
AGRI - Agriculture
AMT - Aviation Maintenance Technology
AT - Aviation Technology
AUTO - Automotive Technology
BMT - Basic Maintenance Technology
CARP - Carpentry
CIS - Computer Information Systems
CMPS - Computer Science
CS - Computer Science
CT - Construction Technology
DA - Dental Assisting
DESL - Diesel Technology
DH - Dental Hygiene
DRAF - Drafting
DS - Dental Science
DT - Drafting Technology
EL - Electrical Technology
ELAP - Appliance Service
ELCO - Electrical Service
ELEN - Electrician
EMT - Emergency Medical Technician
ENER - Energy
ESAD - Audio Service
ESRE - Radio Broadcast Engineering Technology
ESTE - TV Broadcast Engineer
ESTV - Television Service
ESTW - Two-Way Radio Service
ET - Electronics Technology
ETAC - Automatic Control
ETAV - Avionics
ETBM - Bio-Medical Electronics
ETCM - Communications System
ETCO - Engineering Technology
ETCS - Computer Operating Systems
ETIN - Instrumentation
ETLO - Laser Optics
ETMD - Microprocessor Systems
ETTL - Telecommunications
FS - Fire Science
FST - Food Service Technology
FT - Fisheries Technology
HE - Home Economics
HS - Health Science
ITCO - Industrial Technology
MA - Medical Assisting
MATT - Materials Technology
MECH - Mechanical Technology
MEDT - Medical Laboratory Technology
MT - Marine Technology
MTEC - Maintenance Technology
NS - Nursing Science
NURS - Nursing
OO - Office Occupations
PETR - Petroleum Technology
PMED - Parmedical Technology
PNE - Practical Nursing Education
PT - Petroleum Technology
RH - Refrigeration and Heating Technology
SS - Secretarial Science
SVTC - Surveying Technology
SVTEC - Surveying Technology
TT - Trade and Technology
WELD - Welding Technology
WWT - Waste Water Treatment

General Education Courses Offered by Alaska's Community Colleges

ABE - Adult Basic Education
ACCT - Accounting
AKL - Alaska Native Languages
AKST - Alaska Studies
ALR - Agriculture and Land Resources
ANL - Alaska Native Languages
ANS - Alaska Native Studies
ANTH - Anthropology
ART - Art
AS - Applied Statistics

ASTR - Astronomy
BA - Business Administration
BIOL - Biology
BRD - Broadcasting
BS - Behavioral Science
BSUP - Business Supervision
BUS - Business
CCC - Cross-Cultural Communications
CE - Civil Engineering
CHEM - Chemistry
CI - Community Interest
COED - Community Education
COLA - Conversational Languages
COOP - Cooperative Education
CORR - Corrections
COUN - Counseling
CRAR - Creative Arts
CRFT - Crafts
CSV - Community Service
DM - Dance and Music
DNCE - Dance
DP - Dental Program
ECD - Early Childhood Development
ECON - Economics
ED - Education
EE - Electrical Engineering
ELEC - Electricity
EMCM - Communication Electronics
ENGL - English
ENVS - Environmental Studies
EQE - Environmental Quality Engineering
ES - Engineering Science
ESCI - Earth Science
ESK - Eskimo
ESL - English As A Second Language
ESM - Engineering and Science Management
ESOL - English As A Second Language
ETE - Electronics Engineering Technology
FG - Fish and Game
FISH - Fisheries
FL - Foreign Languages
FORT - Forestry
FREN - French
GEOG - Geography
GEOL - Geology
GEOS - Geoscience
GER - German
GOVT - Government
GS - General Science
HCOM - Home Construction and Maintenance
HIST - History
HM - Hotel Management
HUM - Humanities
JB - Journalism and Broadcasting
JOUR - Journalism
JPC - Journalism and Public Broadcasting
JPN - Japanese
JUST - Justice
LANG - Language
LAWS - Law Science
LING - Linguistics
LRM - Land Resources Management
LS - Library Science
LVSK - Living Skills
MATH - Mathematics
MBI - Marine Biology
ME - Mechanical Engineering
MEDA - Media
MEDS - Medical Science
MGT - Management
MILS - Military Science
MIN - Mining Engineering
MINL - Minerals
MOD - Modeling
MUS - Music
OCN - Oceanography
PA - Police Administration
PADM - Public Administration
PAT - Police Academy Training
PC - Public Communications
PD - Professional Development
PE - Physical Education
PET - Petroleum Engineering
PHIL - Philosophy
PHOT - Photography
PHS - Physical Science
PHYS - Physics
PL - Planning
PLUM - Plumbing
PREN - Professional Development
PS - Political Science
PSV - Public Service
PSY - Psychology
REC - Recreation
REL - Religion
RUSS - Russian
SCI - Science
SOC - Sociology
SP - Speech
SPAN - Spanish
SPC - Speech
SPCH - Speech
SPP - Speech Pathology
SSL - Society Skills
SWK - Social Work
THR - Theater
VA - Vocational Arts
VE - Vocational Education
WD - Wining & Dining
WF - Wildlife and Fisheries
WOOD - Wood Technology
ZOO - Zoology

REFERENCES

Bowen, Howard R. The Costs of Higher Education: How Much Do Colleges and Universities Spend per Student and How Much Should They Spend? San Francisco: Jossey-Bass Publishers, 1980.

The Chronicle of Higher Education. "1979-1980 Finances of 2-Year Colleges", June 8, 1981.

DeVries, Anne The University of Alaska: An Overiew of Programs and Expenditures. Juneau: House Research Agency; Alaska State Legislature, January, 1981.

Fischer, Norman M. 1976-77 Unit Expenditures Study. Olympia: State of Washington Council for Postsecondary Education, 1977.

Gamso, Gary An Approach to Cost Studies in Small Colleges. Boulder, Colorado: National Center for Higher Education Management Systems, 1978.

Gonyea, Meredith A. (Ed.) Analyzing and Constructing Cost, New Directions for Institutional Research, No. 17. San Francisco: Jossey-Bass Publishers, 1978.

Hample, Stephen R. "Cost Studies in Higher Education," The AIR Professional File, No. 7. Tallahassee: Florida State University, 1980.

University of Alaska and the Alaska Community College Federation of Teachers. "Community College Contract Between the University of Alaska and the Alaska Community Colleges Federation of Teachers, Local 2404, AFL-CIO", 1979.