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ABSTRACT

To identify central problems in vocational education in Alaska, a study focused on the three sectors at the postsecondary school level: public or independent nonprofit institutions, private schools, and apprenticeship programs. Public and nonprofit institutions consider job preparation their primary goal in addition to skill upgrading and teaching practical skills. Graduation rates of their primarily minority group students appear to be extremely low. They lack sound labor market information for program planning and pay little attention to student placement. Their strengths are geographic accessibility, low tuition, and minimal entrance requirements. In contrast, private schools have more stringent enrollment requirements, better linkage with the labor market, and high rates of program completion and job placement. Apprenticeship programs have the most stringent entrance requirements, serve a narrow range of students, and best exemplify vocational program planning based on labor market demand. Vocational education problems in Alaska occur primarily in publicly supported institutions. These are (1) confusion about teaching job preparation versus practical skills as goals of vocational education, (2) lack of information on the Alaska labor market, (3) lack of attention to job placement and development, (4) low numbers of program graduates, and (5) lack of financial assistance for unemployed non-native Alaskans needing vocational training. (YLB)

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VOCATIONAL EDUCATION IN ALASKA

CENTRAL ISSUES AND PROBLEM AREAS

INTRODUCTION

Vocational education in Alaska is expensive, and the state bears most of the cost. Over 25 million dollars was spent on vocational education during the 1978-79 fiscal year, of which 87 percent came from the state (see Tables 1 and 2).[1] Yet, despite these large public expenditures and despite a general public expectation that vocational education is somehow equipping people for available jobs in the local community or the state, Alaska's vocational education system as a whole is not organized to help students get jobs. Many training programs operate without adequate information on Alaska's labor market, offer few placement services, and do not develop relationships with prospective employers.

On the other hand, vocational education is also serving certain valuable functions for which it is not receiving credit. Many vocational programs in Alaska are teaching important practical skills, such as building construction, welding, and auto repair. These skills are highly relevant to Alaska life styles and community needs. Other programs are increasing the job competence of workers who are already employed. However, as worthwhile as these other vocational education goals may be, they are not

[1]The federal share in vocational education will increase with the opening of the Alaska Federation of Natives' Job Corp Center in 1979. See Table 2.

This *Review* examines the total system of vocational education in Alaska in order to identify central problems and bring them to the attention of vocational educators, policymakers, and the general public whose taxes support most of these institutions.

This article looks first at the operation of Alaska's vocational education system, particularly at the postsecondary school level where vocational education is most directly concerned with occupational preparation. It identifies the institutions that provide vocational training, the numbers and types of vocational programs offered, and the characteristics of vocational education students. Second, it discusses five important problems in vocational education. These are:

1. Confusion about teaching job preparation versus practical skills as goals of vocational education.
2. Lack of information on the Alaska labor market.
3. Lack of attention to job placement and job development.
4. Low numbers of program graduates.
5. Lack of financial assistance for unemployed non-Native Alaskans in need of vocational training.

Finally, this study is intended to be a basic description, rather than an evaluation, of Alaska's vocational education system. Its purpose is to help identify areas in the system that need more intense evaluation and policy discussion.

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FEATURE

BOOK REVIEWS

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(Continued from Page 1)

publicly set forth as educational objectives, nor are they used as a central basis for systematic vocational planning and evaluation. It is job placement that is set forth as the official reason for the existence of vocational education, whereas these programs are actually fulfilling much more diverse and equally important functions.

Even though the present system can learn to better match its programs to the job market, the scarcity of jobs and resulting high unemployment in many Alaska communities limit the extent to which vocational education can realistically and effectively prepare students for jobs in these areas. Vocational education in Alaska, much more than in other regions of the country, must carefully determine what goals are realistic and how they can best be pursued.

How has this situation come about? It partly stems from the fact that vocational education problems and program needs have not received systematic attention, despite the substantial annual investment. Policymakers have not tended to view the system as a whole because it is fragmented and uncoordinated. Vocational education in Alaska is made up of many diverse institutions—individual community colleges, secondary schools, private schools, apprentice programs, and others—that operate in isolation from one another. As a result, policymakers have tended to look at individual institutions and have had little knowledge of what comprises the total vocational education system in Alaska and how the parts do or do not fit together. Major public policy decisions, such as whether or not to build an expensive new vocational education facility, have too often been based on inadequate information.

This study, supported by the Alaska Department

(Continued on Page 5)

Table 1

Vocational Education Expenditures by City and Borough School Districts and Rural Educational Attendance Areas: Audited School Operating Fund-Expenditures: FY 1977[a]

City and Local School Districts[b]	Vocational Education Instructional Units	Vocational Education Budget	Total School Budget	Proportion of Total Budget Spent on Vocational Education
Anchorage	100	$ 4,112,277	$ 82,782,708	5.0%
Bristol Bay	2	80,089	1,059,454	7.6
Cordova	5	138,355	1,564,805	8.8
Craig	2	46,411	489,416	9.5
Dillingham	3	159,258	1,640,774	9.7
Fairbanks	29	1,008,544	27,229,098	3.7
Galena	2	68,243	633,792	10.8
Haines	3	80,014	1,394,473	5.7
Hoonah	3	76,649	797,557	9.6
Hydaburg	2	17,709	376,242	4.7
Juneau	20	598,669	10,483,885	5.7
Kake	3	81,492	637,611	12.8
Kenai	25	712,841	16,096,784	4.4
Ketchikan	11	462,821	6,290,315	7.4
King Cove	2	54,413	564,793	9.6
Klawok			308,863	
Kodiak	10	328,126	5,570,104	5.9
Mat-Su	21	565,465	9,377,332	6.0
Nenana	4	93,579	819,871	11.4
Nome	4	186,770	3,061,708	6.1
North Slope	15	661,341	8,981,117	7.4
Pelican		16,718	148,333	11.3
Petersburg	4	91,508	1,564,171	5.9
Selawik		92,787	913,267	10.2
Sitka	7	228,434	4,201,098	5.4
Skagway	2	52,204	626,859	8.3
St. Marys	3	69,832	708,023	9.9
Unalaska	2	64,678	700,696	9.2
Valdez	6	133,483	2,634,410	5.1
Wrangell	3	99,087	1,469,859	6.7
Yakutat	2	73,397	561,076	13.1
REA				
Adak	3	88,347	1,751,724	.5
Alaska Central	4	108,553	1,511,837	7.2
Alaska Gateway	2	77,502	1,652,748	4.7
Aleutian Range	2	24,819	1,133,086	2.2
Annette Island	3	62,015	1,044,724	5.9
Bering Straits	10	48,475	1,991,028	2.4
Chatham	2	34,434	531,023	6.5
Chugach			227,542	
Copper River	5	103,590	2,556,690	4.1
Delta/Greely	5	126,290	2,325,525	5.4
Iditarod	4	63,161	1,396,839	4.5
Kuspuk	2	55,127	1,704,239	3.2
Lake & Peninsula	3	92,178	1,810,882	5.1
Lower Kuskokwim	11	278,889	5,749,557	4.9
Lower Yukon	8	102,019	2,656,178	3.8
Northwest Arctic	6	210,587	5,368,542	3.9
Pribilofs	2	45,269	545,084	8.3
Southeast Island	2	138	1,310,867	
Southwest	5	117,263	2,423,068	4.8
Yukon Flats	3	35,898	1,510,120	2.4
Yukon-Koyukuk	6	211,282	3,604,965	5.9
Total	383	$12,341,617	$236,494,782	5.2

[a]Vocational education allocations under the 1978 Public School Foundation Program were comparable, totaling $12,436,889.

[b]The Alaska Department of Education also spends about $577,900 annually on supportive services to school district vocational programs.

SOURCE: State of Alaska, Department of Education, *Alaska Department of Education Annual Report, 1977-78,* October 1978; pp. 50-53.

Table 2

Public Postsecondary Vocational Education Program Costs in Alaska: FY1979[a]

	State and Local Sources	Federal and Other Sources	Total
University of Alaska System			
Anchorage Community College	$ 3,675,991	$ 65,596	$ 3,741,587
Juneau Douglas Community College (Business & Career Education)	541,700		541,700
Kenai Peninsula Community College	439,930		439,930
Ketchikan Community College	362,732		362,732
Kodiak Community College	211,416	6,000	217,416
Kuskokwim Community College	440,022	222,611	662,633
Matanuska-Susitna Community College	181,319		181,319
Northwest Community College	165,187		165,187
Sitka Community College	97,583		97,583
Tanana Valley Community College and UA/Fairbanks	980,955	219,031	1,199,986
Subtotal	$ 7,096,835	$ 513,238	$ 7,610,073
Other			
Alaska Skill Center	$ 1,575,300	$ 976,800	$ 2,552,100
Indian Action Program		864,000	864,000
Inupiat University		150,832	150,832[b]
Hutchison Career Center (adult component only)	785,904		785,904
Sheldon Jackson College		257,500	257,500
Department of Education: Adult Education and Vocational Training/Supportive Services[c]	53,116	201,116	254,232
Subtotal	$ 2,414,320	$ 2,450,248	$ 4,864,568
Total	$ 9,511,155	$ 2,963,486	$12,474,641
Addition:			
Alaska Federation of Natives' Job Corps Center:		$ 5,820,725	$ 5,820,725[d]

[a]Budget figures refer to the direct costs of the vocational education component of the institution and do not include associated administrative and other institutional costs unless the total institution is a vocational education facility. Thus, these figures underestimate the true costs of vocational education in Alaska.

[b]Costs in FY78. Inupiat University is reorganizing and has not determined its FY79 budget and curriculum.

[c]Estimated costs of postsecondary vocational education support only. Does not include costs of adult basic education, English as a Second Language and other programs administered in the adult education and career and vocational areas.

[d]AFN contract runs from December 11, 1978 to November 30, 1980.

SOURCE: FY1979 Working Budget, University of Alaska; "Survey of Alaskan Postsecondary Vocational Institutions," (Fairbanks: Institute of Social and Economic Research, University of Alaska, 1978).

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of Education, attempts to remedy this lack of information and provide an information base for systematic vocational education planning. We hope by presenting it here to help policymakers and other interested persons better understand the total vocational education system in Alaska and familiarize them with those problems in the system that so badly need attention.

ALASKA'S POSTSECONDARY VOCATIONAL EDUCATION SYSTEM

In 1978, forty-eight separate institutions offered postsecondary vocational education programs in Alaska (Table 3). Of these, sixteen were public or independent nonprofit institutions, seventeen were private schools, and fifteen were apprenticeship programs. These institutions operated 157 separate vocational programs, each leading to a certificate, associate's degree, license, or some other document of completion (Table 4). Public sector institutions accounted for almost 75 percent of the vocational programs offered.

Each of these sectors operates quite differently in terms of the basis for planning programs, the populations of students served, and the relationship to the labor market. The public and nonprofit institutions offer the largest number of vocational education

Table 3

Institutions Offering Postsecondary Vocational Education Programs: 1977-78

	Number
PUBLIC AND INDEPENDENT NONPROFIT INSTITUTIONS	
Community Colleges/University of Alaska	11
Anchorage Community College	
Juneau-Douglas Community College	
Kenai Peninsula Community College	
Ketchikan Community College	
Kodiak Community College	
Kuskokwim Community College	
Matanuska-Susitna Community College	
Northwest Community College	
Sitka Community College	
Tanana Valley Community College	
University of Alaska/Fairbanks	
Other	5
Alaska Skill Center	
Hutchison Career Development Center	
Indian Action Program	
Inupiat University of the Arctic	
Sheldon Jackson College	
Subtotal	16
PRIVATE INSTITUTIONS[a]	
Hairstyling Schools	4
Academy of Hair Design	
Anchorage School of Barbering	
Fairbanks Beauty School	
Trendsetters School of Beauty	
Flight Schools	9
Aero Technical Flight Service	

(Continued, next column)

	Number
PRIVATE INSTITUTIONS[a] (cont.)	
Alaska Central School of Flight	
Birchwood Air Service	
Dorsey's Flight Training	
Gil's Aircraft Service	
Neilson Aviation	
Northland Flight School	
Pat's Flying Service	
Wilbur's Flight Operation	
Real Estate Schools	3
The Real Estate School	
T & M Real Estate Institution	
Winey Real Estate	
Alaska Business College	1
Subtotal	17
APPRENTICESHIP PROGRAMS[b]	15
Asbestos Workers, Local No. 9	
Bricklayers, Local No. 1	
Carpenters Training Center, Anchorage	
Carpenters Training Center, Fairbanks	
Cement Masons/Plasterers	
Electrical Training Center	
Ironworkers Training Center	
Operating Engineers, Local No. 320	
Painters, Local No. 1140	
Piledrivers, Local No. 2520	
Plumbers & Pipefitters, Fairbanks	
Roofers, Local No. 190	
Sheetmetal Workers, Local No. 23, Anchorage	
Sheetmetal Workers, Fairbanks	
Total	48

[a]Schools excluded from the listing are military related flying schools, two modeling schools, and a school offering short preparation programs for travel agents.

[b]Apprenticeship programs that were not open in 1977-78 are excluded.

SOURCE: Alaska Commission on Postsecondary Education, 1977-78, *Directory of Postsecondary Educational Institutions in Alaska*; Institute of Social and Economic Research, "Survey of Alaskan Postsecondary Vocational Institutions"; *Survey of Programs and Enrollments Postsecondary Schools*, National Center for Education Statistics, Department of Health, Education, and Welfare (forms collected by Alaska Commission on Postsecondary Education).

programs and enroll the most students, particularly minority group students. Compared to private schools or apprenticeship programs, these institutions tend to have a weak relationship with Alaska's labor market.

Public and Independent Nonprofit Institutions

Institutional Goals

Public and independent nonprofit institutions fall into two groups. One group consists of the community colleges which are primarily oriented toward meeting the needs in their regions. Most identify their target populations simply as regional residents (Table 5).

The other group of institutions are oriented toward the economically disadvantaged, particularly Alaska Natives. However, while some are moving toward this role, others are moving away from it. For example, the Alaska Skill Center began as an institution sponsored by the Manpower Development

Table 4

Number of Occupational Programs of Study Offered by Different Types of Postsecondary Institutions

Program	Type of Institution: Public	Independent Nonprofit	Private	Apprentice	Total
Accounting Tech (5002)*	5		1		6
Aeronaut. & Aviation Tech (5302)					
Air Traffic Control	1				1
Aircraft Tech I, II, III	2				2
Aviation Admin. (5004)	1				1
Piloting	2		10		12
Barber			1		1
Business Mgt. Tech (5004)					
Business Admin.	11		1		12
Real Estate			3		3
Village/Business Mgt.	2				2
Chemical Tech (5305)	1				1
Computer Tech (5104)	2				2
Construction Tech (5317)					
Asbestos Workers				1	1
Bricklayers & Tilesetters				1	1
Building Const. & Maint.	5				5
Carpenter	1			2	3
Cement Mason/Plasterer				1	1
Electrical Tech	1				1
Heating & Refrigeration	1				1
Ironworkers				1	1
Heavy Equipment	1			1	2
Painter, Glazier, Floor Coverer				2	2
Piledriverman				1	1
Plumbers & Pipefitters				1	1
Roofers				1	1
Sheetmetal Workers				2	2
Cosmetologist (5006)			3		3
Drafting Tech (5304)	3				3
Educational Tech (5003)	3				3
Electronic Tech (5310)					
Electronic Tech	4				4
Lineman/Cable Splicer				1	1
Telephone Workers				1	1
Wireman				1	1
Fire Control Tech (5507)	3				3
Health Services & Paramedic (5200)	1				1
Community Health Prac. (5201)	2				2

(Continued, next column)

Program (cont.)	Type of Institution (cont.): Public	Independent Nonprofit	Private	Apprentice	Total
Dental Assistant (5202)	1				1
Dental Hygienist (5203)	1				1
Medical Assistant (5214)	1				1
Medical Lab. Assist. (5205)	1				1
Nursing (5209)	2				2
Nursing Assist. (5201)	1				1
Home Economics Tech (5405)					
Early Childhood Educ.	5				5
Home Economics	1				1
Industrial Tech (5312)					
Petrochemical	3				3
Power House Operation	1				1
Power Tech	1				1
Library Assist. Tech (5504)	1				1
Mechanical Tech (5315)					
Auto Body 1 & 2/Auto. Tech	5				5
Dealer Service Training	1				1
Diesel Tech	3				3
Fork Lift Mechanic	1				1
Heavy Equip. Mechanic	1				1
Natural Science Tech (5400)					
Fishery Tech (5403)	1				1
Food Svc. Tech/Waitperson (5404)	5				5
Forestry Tech (5408)	2				2
Land Resource Mgt. (5403)	1				1
Marine Tech (5406)	2				2
Police, Law Enforcement	4				4
Corrections Tech (5505)	1				1
Printing Tech (5505)	1				1
Secretarial Tech (5505)	11		1		12
Social Work Related Tech (5506)					
Para-Professional Counseling	1				1
Survey Tech (5309)	1				1
Welding Tech (5308)					
Non-Destructive Testing			1		1
Welding	5		1		6
Welding Inspector Training			1		1
Total	117		23	17	157

*The programs have been numbered and grouped using the program classification system developed by the National Center for Educational Statistics. For more detail on this system, see U.S. Department of Health, Education and Welfare, Office of Education, *A Taxonomy of Instructional Programs in Higher Education*, 1970.

Training Act, but has since sought to attract a broader student body. In 1978, 27 percent of its students paid their own way.[2] Hutchison started as an institution designed to serve the chronically unemployed, but by 1978, the majority of its students consisted of local secondary school students taking vocational courses as part of their general education. The Indian Action Center, Inupiat University, and Sheldon Jackson College[3] all primarily enroll Alaska Natives.

These institutions consider job preparation to be the most important goal of vocational education. When asked to describe their most successful programs and the basis for program success, *every* institution named programs which they felt had high job placement rates.

Actually, many public vocational programs appeared to be serving quite different functions. While a few schools, such as the Alaska Skill Center, do focus on putting the unemployed to work, most community college programs were oriented differently. According to administrators, most of their students were already employed. Some were enrolled in vocational courses to upgrade their job skills. Others were enrolled not to acquire job skills but to acquire practical skills. "Hobbyists" was the way one community college president characterized them. They took automotive courses to learn how to work on their cars or carpentry courses to learn how to repair or build their houses.

In short, community college vocational programs appeared to be serving a mixture of functions: (1) job preparation, (2) skill upgrading, and (3) teaching practical skills. The job preparation goal, however, was the official mission and was publically cited as the measure of success.

Student Population

The poor quality of data available at the institutional level does not allow us to make reasonable estimations of the numbers of students in Alaska's public vocational institutions. A few schools, such as the Alaska Skill Center, could provide information on the numbers as well as characteristics of students enrolled in different vocational programs. However, most schools, especially the community colleges, lacked even the most basic item of information: how many individual students they are training in different programs. The only statistics routinely maintained were total community college enrollments or enrollments in single vocational courses that tended to be duplicative in cases where students took more than one course.

As well as we can determine using course enrollment figures converted to full-time equivalents, the public sector vocational education institutions enrolled the equivalent of about 5,000 full-time students (Table 6). The number of individual students is undoubtedly substantially higher because many community college students are enrolled part-time in one or two courses. On the basis of estimates made by vocational education administrators, male and female students are represented in about equal numbers (Table 6). The proportion of Alaska Natives is about 25 percent of total enrollment (Table 6), only somewhat over the proportion of Natives in the general population (16 percent).[4]

Table 5

Target Groups Identified by Alaskan Vocational Education Institutions
(percent distributions)

Oriented Toward Any Target Group	Public/ Independent Nonprofit	Private	Apprenticeship	Total
Yes	92	0	40	55
No	8	100	60	45
Total	100	100	100	100
Number =	13	5	10	28
Target Groups				
Unemployed	13		(17)	14
Economically Disadvantaged	12		(0)	9
Natives & Other Minorities	19		(17)	18
Youths	0		(17)	5
Females	6		(17)	9
Veterans	6		(16)	9
Handicapped	0		(16)	4
Regional Residents	44		(0)	32
Total	100		100	100
Number* =	16	0	(6)	22

*Some institutions named more than one target group.

SOURCE: "Survey of Alaskan Postsecondary Vocational Institutions" (Fairbanks: Institute of Social and Economic Research, University of Alaska, 1978).

[2]Gene Walsh, *An Identification of Vocational Education Training Activity in Alaska for Fiscal Year 1978*, prepared for Alaska State Advisory Council on Vocational and Career Education and State Manpower Services Council, 1978, 88 pp.

[3]Sheldon Jackson College emphasized that it does not consider itself engaged in vocational training. However, we have included it since some of its programs would conventionally be considered vocational training.

[4]Department of Labor, *Alaska Annual Planning Information FY1979*, 1978, p. 3.

Table 6

Estimated Characteristics of Students in Different Types of Postsecondary Vocational Programs: 1978
(percent distributions)

	Public/ Independent Nonprofit[a]	Private	Apprenticeship	Total
Race				
Native	25	3	16	21
Caucasian	72	91	77	75
Other	3	6	7	4
Total	100	100	100	100
Number of students used to estimate race proportions:	4,297	725	1,091	6,113
Age[b]				
Under 20	14	3	12	12
20-25	40	14	64	41
Over 25	46	83	24	47
Total	100	100	100	100
Number of students used to estimate age proportions:	4,624	560	686	5,870
Sex				
Male	52	42	93	47
Female	48	58	7	53
Total	100	100	100	100
Number of students used to estimate sex proportions:	4,921	727	1,091	6,739

[a]Full-time equivalents. Since many community colleges enroll primarily part-time students, the number will substantially underestimate total individual student enrollment.

[b]Age estimations are based on fewer numbers of students due to lack of institutional information.

SOURCE: "Survey of Alaskan Postsecondary Vocational Institutions" (Fairbanks: Institute of Social and Economic Research, University of Alaska, 1978); *Survey of Programs and Enrollments—Postsecondary Schools*, National Center for Education Statistics, collected by the Commission on Postsecondary Education; Bureau of Apprenticeship and Training records.

Such estimations of student enrollment and characteristics may be useful for a general overview of the vocational education system. However, the crucial point is that many public institutions, particularly the community colleges, cannot themselves determine the numbers of individual students in vocational programs. Nor do they know to what extent students are preparing for jobs or pursuing other goals. Thus, they have no way of knowing whether their programs are turning out an oversupply of labor in particular training areas, particularly in the absence of follow-up studies, which few institutions carefully conduct.

Of the public institutions surveyed, 67 percent cited knowledge of vocational education student goals and life-style preferences as a major program need (Table 7). This need ranked even higher than the perennial problem of obtaining more funding for vocational facilities and equipment.

Graduation Rates

Few schools in the public sector kept systematic information on graduation rates. In 1978, the Alaska Skill Center reported that 60 percent of its students completed programs; the Indian Action Program, 47 percent; and Inupiat University, 37 percent.

Graduation rates for community college vocational programs are impossible to calculate since no information is available on the number of individual students enrolled in a program. However, comparing the number of graduates (certificate and associate's degree) to the estimated full-time equivalent students in a vocational program suggests that graduation rates may be extremely low. For many programs, information on both student enrollment and graduates was not available. For those programs where we had information, we estimated full-time equivalent student enrollment at 3,552 students. Yet, these programs graduated only 513 students, an almost 7-to-1 ratio of full-time equivalent students to graduates. Some community colleges had substantially lower ratios. One community college, for example, which had an estimated full-time vocational student enrollment of 782, had only twenty-two graduates, a ratio of over thirty-five full-time equivalent students to one graduate. The program areas of accounting, business

Table 7

Program Needs of Public Sector Vocational Education Institutions
(percent distributions)

Local Labor Market Information	67
Knowledge of Vocational Education Student Goals and Life Style Preferences	67
Development of Relationship with Employers	53
Funding for:	
Facilities/Equipment	40
Staff	47
Staff Training	27
Travel	40
Job Placement	27
Number = 15	

SOURCE: "Survey of Alaskan Postsecondary Vocational Institutions" (Fairbanks: Institute of Social and Economic Research, University of Alaska, 1978).

administration, and office occupations had particularly low numbers of graduates in view of their high enrollments. Alaska community colleges in 1978 awarded only 240 associate of arts degrees, and Anchorage Community College accounted for 72 percent of the degrees awarded (Table 8).

What is the basis of these (possibly) low graduation rates? The biggest reason, in the view of administrators, is that students quit because they find a job (Table 9). Personal problems, such as family need at home, alcoholism, and homesickness were also cited as major reasons for dropout. Others felt that graduation rates were unimportant because students were in the program to upgrade their job skills and were not interested in a degree. As one administrator said:

> Perhaps 90 percent of the students never intend to take the full program. They are looking for skill brush-up or just want to acquire adequate skills to get a job. Primarily, students don't complete programs because they get jobs.

That students are not interested in program completion in the first place may be the reason for the low number of graduates. But there may be other reasons. In a survey of adult education students in Fairbanks, for example, we found that over 50 percent of the students wanted to obtain at least an associate degree. Few students reported being enrolled only to get skills enough to qualify for a job. However, over 25 percent of the students felt that financial problems might prevent them from getting their degrees. Thus, many students, once they have attained the minimum skills needed for a job, may drop out and work not because they had planned on it, but because of financial need.

Program Areas and Program Planning

The largest number of programs in the public sector (Table 4) and the greatest numbers of students (Table 10) are concentrated in the following fields:

- Secretarial Technology
- Business Administration
- Accounting Technology
- Early Childhood Education
- Building Construction and Maintenance
- Food Service

Are these programs providing training in areas of Alaskan labor market needs or are they adding an occupational surplus to the job market and contributing to Alaska's unemployment problems? While this is a crucial policy question in vocational education, the public sector institutions have little means of answering it.

The Alaska Department of Labor provides information on statewide occupational employment

Table 8

Graduates of Community College Vocational Programs

Associate of Arts Degrees in Vocational Program Areas Awarded Through the University of Alaska's Community College System: 1978

Programs	Anchorage Community College	Other Community Colleges[a]	Total
Accounting	12	0[b]	12
Aeronaut. & Aviation Tech			
Air Traffic Control	10	0	10
Aircraft Tech	1	1	2
Aviation Admin.	4	0	4
Piloting	7	1	8
Business Management	27	11[b]	38
Chemical Technology	0	1	1
Computer Technology	4	0[b]	4
Construction Technology			
Heating & Refrigeration	0	4	4
Drafting Tech	7	0	7
Educational Tech	0	12	12
Electronics Tech	5	4	9
Fire Control Tech	11	0	11
Health Services			
Dental Assistant	12	0	12
Medical Assistant	3	0	3
Medical Lab.	6	0	6
Paramedic	1	0	1
Nursing	24	0	24
Home Economics Technology			
Early Childhood Educ.	3	1	4
Home Economics	3	0	3
Industrial Technology			
Petrochemical	10	8	18
Mechanical Technology			
Diesel Tech	0	1	1
Natural Science			
Food Service	3	0	3
Land Resource Mgt.	0	2	2
Police Administration	6	10	16
Secretarial Technology	7	7	14
Social Work-Related			
Para-Professional Counseling	0	2	2
Survey Technology	7	0	7
General Technology	1	1	2
Total	174	66	240

[a]Includes one police administration A.A. graduate and one chemical science A.A. graduate from the University of Alaska, Fairbanks.

[b]Two A.A. degrees in computer technology, two in accounting, and one in business administration were awarded through the School of Management, University of Alaska, Fairbanks.

SOURCE: University of Alaska alumni records.

Table 9

Barriers to Program Completion in Public Sector Vocational Programs: Administrator Views

Student got a job	64%
Personal problems (family need at home, alcoholism, homesickness)	50
Just interested in skill upgrading	29
Unrealistic expectations	14

Number = 14

SOURCE: "Survey of Alaskan Postsecondary Vocational Institutions" (Fairbanks: Institute of Social and Economic Research, University of Alaska, 1978).

and projected average annual openings over a five-year period. As discussed in detail in the second section, this information is of limited use to vocational planning. It does not cover many occupations relevant to vocational education, nor does it present the occupational information in a form that parallels vocational education categories. When occupations are arranged by vocational training areas (Table 11), it is clear that the major vocational program training areas parallel the occupational areas of highest projected demand. But projections of occupational demand alone can be misleading without some information on supply—the degree of competition that vocational program graduates face in the job market; the Alaska Department of Labor does not provide interpretable statistics addressing this problem.

Of the publicly-supported vocational education institutions, 67 percent considered lack of local labor market information to be a major program problem (Table 7). In the absence of sound labor market information, many vocational education programs were planned either on vague impressions about the labor market or on other grounds entirely (Table 12). For example, a program might be implemented on the basis of a study which discussed a general social need, such as that for Native corporation land management personnel. The vocational institution did not follow up to determine if paying jobs were in fact available at the time they were training students. Vocational programs were also offered on the basis of student interest, regardless of the labor market implications. The desire to make use of an existing facility, such as a government installation, or to acquire a new building, was an unofficial but often important ground for starting vocational programs. "I would say we adapted the program to the building, not to the labor market," one vocational educator admitted.

Despite the surplus of skilled labor in Alaska during 1978 and the uncertainty of future economic improvements, vocational educators were considering starting a variety of new training programs (Table 13). In most of these areas, several similar training programs were already in existence. Community colleges especially had a regional focus, which limited their interests to employment opportunities and other training activities in their areas. They gave little consideration to the mobility of students and their position in the labor market if they left the region. Nor were vocational programs specifically designed to help students from regions with poor job prospects compete in the statewide or national job market.

Placement

While student placement rates would be one reasonable way to determine if programs were producing an oversupply of labor, few institutions kept job placement records.[5] One notable exception, the Alaska Skill Center, devoted substantial effort to job development activities, kept student placement records, and reported placement rates of about 82 percent. However, most public institutions put little effort into job placement. Only two had placement offices (Table 14). Most reported that job placement was limited to informal efforts by certain teachers.

Some instructors made great efforts to place students with employers. Certain programs, such as Kenai Community College's Petroleum Technology program, had developed working relationships with industry that encouraged placement by combining classroom education with on-the-job training. However, other vocational educators took the position that their jobs ended in the classroom and did not accept employer contact as part of their role.

The payoff from contact with employers, however, can be substantial from the viewpoint of educational quality as well as helping students find jobs. As one instructor in the field of office occupations pointed out:

> If this (a cooperative class) were done on a large scale, we would know a lot more about employer needs. I found out a lot of things we shouldn't be doing, that we should be changing. We discovered that employers aren't giving timed typing tests from perfect copy any longer. They are making students correct copy and use their own judgment. We're still using the testing methods of the sixties. Now we are adjusting our testing to match the testing methods of employers.

[5]While we asked institutions about job placement records in the survey, the responses were too limited or contradictory to be reliably coded.

Table 10

Estimated Enrollment of Vocational Education Training Programs in Alaska: 1977-78

Program	Public/ Independent Nonprofit[a]	Private	Apprenticeship	Total[b]
Accounting Tech (5002)	410	80		490+
Aeronautical & Aviation (5302)				
Air Traffic Control	50			50
Aircraft Technology	71			71
Aviation Admin. (5004)	18			18
Piloting	120	464		584
Barber		10		10
Business Mgt. Tech (5004)				
Business Admin.	528+			528+
Real Estate		425++		425++
Village/Business Mgt.	80			80
Chemical Technology (5305)	3			3
Computer Technology (5104)	153			153
Construction Technology (5317)				
Asbestos Workers			33	33
Bricklayers & Tilesetters			6	6
Building Const. & Maint.	223+			223+
Carpenter	7		243	250
Cement Mason/Plasterer			5	5
Electrical Technicians	23			23
Heating & Refrigeration	25			25
Heavy Equipment Operators	37		86	123
Ironworkers			61	61
Painter, Floorcoverer, Glazier			90	90
Piledriverman			10	10
Plumbers & Pipefitters			130	130
Roofers			31	31
Sheetmetal Workers			30	30
Cosmetologist (5006)		74		74
Drafting Technician (5304)	54			54
Educational Technician (5503)	169			169
Electronic Technician (5310)				
Electronic Tech	210			210
Lineman/Telephone Worker			366	366
Fire Control Tech (5509)	112			112
Health Services & Paramedic (5200)	47++			47++
Home Economics Tech (5405)				
Early Childhood Education	46++			46++
Home Economics	260			260
Industrial Tech (5312)				
Petrochemical	131			131
Power House Operator	18			18
Power Tech	NA			NA
Library Asst. Tech (5315)	28			28
Mechanical Tech (5315)				
Auto Body Automotive	141			141
Dealer Service Training	2			2
Diesel Tech	69			69
Fork Lift Mechanic	4			4
Heavy Equipment Mechanic	37			37
Natural Science Tech (5400)				
Fishery Tech (5403)	19			19
Food Service (5404)	327			327
Forestry Tech (5403)	18			18
Land Resource Mgt. (5403)	10			10
Marine Tech (5406)	NA			NA
Police Administration	68			68
Corrections Tech (5505)	75			75
Printing Tech (5505)	5			5
Secretarial Tech (5005)	824+	83		907+
Social Work-Related Tech (5506)				
Para-Professional Counseling	32			32
Survey Tech (5309)	40			40
Welding Tech (5308)	185+			185+
Total	4,679+ +++++	1,136++	1,091	6,906+ ++++++ ++++

[a]Full-time equivalents. Public sector enrollments are rough estimations because the community colleges do not have information on the numbers of students enrolled in vocational programs. Where a community college provided course enrollments in a vocational program, we calculated "full-time equivalents" by multiplying course enrollments by 3 and dividing by 15. Where community colleges provided semester headcounts over three semesters of vocational education students, these headcounts were divided by 3. This is the procedure recommended by the National Center for Educational Statistics, but it results in a conservative estimation of enrollments.

[b]Represents an underestimation due to nonsurveyed institutions. Each + indicates omitted data from a training program.

SOURCE: "Survey of Alaskan Postsecondary-Vocational Institutions" (Fairbanks: Institute of Social and Economic Research, University of Alaska, 1978); *Survey of Programs and Enrollments–Postsecondary Schools*, National Center for Education Statistics, as collected by the Alaska Commission on Postsecondary Education.

Accessibility

The strength of vocational education in the public sector is its geographical accessibility, low tuition rates, and minimal entrance requirements. Except for a few in Fairbanks, virtually all the vocational institutions within the private and apprenticeship sector are located in Anchorage. Public vocational institutions are distributed throughout Alaska (Table 15).

Tuition rates are generally low. At the community colleges, for example, tuition is $20 per credit hour or $320 to obtain a one-year certificate and $640 to obtain an associate's degree. While tuition is much higher at Sheldon Jackson ($2,290 per year) and Inupiat University ($1,800 per year), some form of government funding pays tuition for most of the students at these two schools and at the other public vocational programs.

(Continued on Page 13)

Table 11

Employment and Projected Job Openings in Areas of Vocational Training in Alaska

Types of Jobs	Estimated Employment 1978	Estimated Employment 1983	Average Annual Openings 1978-83[a]
Professional & Technical			
Aeronautical & Aviation Tech (5302)			
Air Traffic Controller	615	668	19+
Pilot	1,295	1,742	99+
Computer Technology (5104)			
Computer Specialist	532	750	50+
Drafting Technology (5304)			
Drafters	927	1,397	125+
Health, Technologists & Technicians (5200)			
Clinical Lab Tech	281	385	18+
Dental Hygienists	51	81	15++
Other Health Tech	155	243	21+
Natural Science & Chemical Technologies (5400 & 5305)			
Fishery Tech, Forestry Tech, Land Management, Marine	78	101	7+
Agriculture, Biology Techs (exc. health)	26	41	3+
Chemical Tech	26	41	3+
Survey Tech			
Surveyor	487	709	46+
Managers & Officers			
Business Management Tech (5004)			
Buyer, Sales, Loan Manager	3,494	4,638	318+
General Manager, Officials, Prop.	15,301	18,956	1,126+
Sales Workers			
Real Estate (5004)			
Real Estate Agent & Broker	523	608	32+
Real Estate Appraiser	64	81	4+
Clerical Workers			
Accounting Tech (5003)			
Bookkeeper	3,367	4,192	351+
Educational Tech (5503)			
Teachers Aide, exc. Monitor	689	1,154	145+
Library Assistant Tech (5504)			
Library Attendant, Assistant	192	263	31+
Secretarial Tech (5005)			
Office Managers	822	1,073	76+
Stenographer, Typist, Secretary	9,473	13,063	1,443+
Office Machine Operator	605	729	64+
File Clerk	343	425	39+
Statistical Clerk	549	749	65+
Clerical Supervisor	443	527	28+
Messengers & Office Helper	142	203	13+
Payroll, Timekeeping Clerk	389	527	48+
Shipping, Receiving Clerk	318	425	28+
Service Workers			
Cosmetology (5006)			
Hairdresser, Cosmetology	377	385	25+
Fire Control Tech (5507)			
Firefighter	733	972	54+
Health Services (5206)			
Health Aide	196	284	32+
Dental Assistant	214	304	36+
Practical Nurse	843	1,316	166+
Nurses Aide, Orderly	1,068	1,600	164+
Home Economics, Early Childhood (5405)			
Child Care Work (exc. Private)	1,285	1,883	214+
Food Service Tech (5404)			
Bartender	1,086	1,438	99+
Baker	240	284	18+
Waiter, Assistant	256	344	21+
Cook	2,696	3,645	320+
Waiter	2,509	2,671	345+
Food Worker, NEC	818	1,053	86+
Police, Law Enforcement, Corrections (5505)			
Police & Detective	1,253	1,843	135+
Crafts, Operatives, & Laborers			
Construction & Metalworking Crafts (5317)			
Asbestos, Insulation Worker	43	61	4+
Carpenter & Apprentice	3,009	3,443	147+
Electrician & Apprentice	1,050	1,215	57+
Glazier	93	142	11+
Bulldozer Operator	836	1,114	82+
Excavating & Grading Machine Operator	2,756	3,726	238+
Fork Lift, Tow Motor Operator	387	486	23+
Painter & Apprentice	523	667	24+
Plumber & Pipefitter	950	1,094	50+
Boilermaker	67	81	7+
Machinist & Apprentice	289	385	30+
Driller, Earth & Water	453	506	16+
Crane, Derrick & Hoist Op.	398	506	26+
Welder & Flamecutter	793	952	42+
Electrical Tech (5310)			
Household Appl. Mech	204	263	14+
Radio, TV Repairer	409	547	31+
Electricial & Electronic Tech	912	972	18+
Telephone Line Installer, Splicer	170	203	9+
Telephone Installer, Repairer	682	871	43+
Electric Power Line Installer, Repr	293	365	17+
Mechanical Tech (5315)			
Auto Body Repair	260	304	13+
Auto Mech & App.	1,939	2,532	138+
Heavy Equipment Mech (incl. Diesel)	2,169	2,714	145+
Aircraft Mechanic	983	1,337	85+
Air Cond. Heating, Ref. Mechanic	427	608	49+
Printing Tech (5009)			
Printing Trade, Creftmaker	144	162	7+

[a] These projections are likely to be underestimations because openings resulting from employees who leave Alaska are not included. Users should add to these projections an additional number of openings based on their knowledge of the number of annual openings deriving from this source. A + is placed on each occupation to reflect this need.

SOURCE: Department of Labor, *Alaska Annual Planning Information FY1979*, May 31, 1978. These occupational projections are derived from the Alaska Department of Labor's in-house econometric model. The increase in employment is estimated on the basis of: (1) openings created by expanding industry, and (2) openings created by replacement needs resulting from death, retirement, disability, and temporary withdrawal from the labor force. In making these projections, increased employment resulting from a possible gasline construction or capital move was not considered.

(Continued from Page 11)

The public institutions have minimal enrollment requirements. A high school diploma is not a prerequisite. Generally, these institutions require only that their students be at least 18 years of age or else have a high school diploma or GED.

Attendance requirements are similarly flexible. Unlike students at private institutions, students need not sign a credit-hour contract. In community college programs, they can enroll for one or more courses without making a long-term commitment of either money or time.

Summary

In sum, the publicly supported sector affords opportunity to students who would otherwise be unable to enroll in a vocational education program. The flexible hours allow many students to continue to work. The minimal entrance requirements allow those who may not have successfully completed high school or who would do poorly on entrance examinations to continue their education. Private schools and apprenticeship programs are much more selective in the students they educate.

The accessibility of public vocational programs, however, to a less select group of students, makes it particularly important that these institutions develop means to actively help those students with job-related goals to find employment. Yet, few public vocational institutions are organized to perform this task. Sources of labor market information are poorly developed, and placement functions are weak. The community colleges may be performing other important functions in their vocational programs, such as career upgrading or teaching practical skills. These other functions, however, are often not official program rationales with an educational approach clearly directed toward them. The type of instruction needed for a course designed to teach people how to work on their cars, for example, is not necessarily the same as the instruction necessary to prepare students to be auto mechanics.

Table 12

Basis for Establishing Vocational Programs in the Public Sector: Administrator Views*

Local labor market demand	56%
Student interest	30
Advisory Council recommendation	8
Did not know	19
Number of programs = 87	

*Percentages do not add up to 100 because more than one reason was given for thirteen programs

SOURCE: "Survey of Alaskan Postsecondary Vocational Institutions" (Fairbanks: Institute of Social and Economic Research, University of Alaska, 1978).

Table 13

New Vocational Education Programs Being Planned by Public Vocational Institutions: 1978[a]

New Program	Number of Institutions Planning New Programs	No. of Alaska Institutions Operating Programs[b]
Automotive	4	5
Building Const. and Maint.	1	5
Cosmetology	1	3
Diesel Technology	1	3
Heavy Equipment	1	2
Land Resource Mgt.	1	1
Piloting	1	12
Practical Nursing	1	2
Secretarial Tech	1	12
Welding	1	6
Bottom Fisheries	1	Possible overlap with on-going training programs
Tourism	1	
Justice	1	
Hotel/Motel Operation	1	
Total Programs Planned =	17	

[a]This listing is an underestimation since it does not include vocational programs that the Job Corps facility will offer.

[b]Includes private and apprenticeship programs.

SOURCE: "Survey of Alaskan Postsecondary Vocational Institutions" (Fairbanks: Institute of Social and Economic Research, University of Alaska, 1978).

The Private Sector

While vocational institutions in the public sector offer many training programs, private schools tend to be small and to concentrate on training in a single field (Table 3). In 1978, private institutions primarily consisted of flight schools (9), hairstyling schools (4), and real estate schools (3). The private sector offered less than 15 percent of the vocational programs in Alaska during FY1978 and enrolled about 16 percent of vocational students. The private sector is also a more unstable industry. For example, 47 percent of the seventeen flight schools listed in

the 1977-78 *Directory of Postsecondary Institutions* were out of business by the summer of 1978.

None of the private schools interviewed were oriented toward serving a target group (Table 5). Only 3 percent of their students were Alaska Natives and another 6 percent, other minorities (Table 6). Several of the institutions were interested in acquiring Comprehensive Employment Training Act (CETA) funds to support more Natives and disadvantaged students at their schools. However, tuition at private schools is high, which makes some agencies reluctant to make financial arrangements with the school. For example, tuition costs at the Anchorage School of Barbering are $1,500 for program completion, while at the Anchorage Business College, program completion costs range from $2,040 to $4,080. Moreover, while some schools offer monthly payment plans, a student must sign a contract for full program costs rather than paying on a semester-by-semester basis.

Compared with the open-enrollment policy of the public schools, many private schools have more stringent screening practices and enrollment requirements. Alaska Business College, for instance, requires applicants to have a high school diploma or GED or else pass an entrance test. The state's three beauty colleges require applicants to have completed at least two years of high school.

Since private schools depend on student tuition for their survival, we cannot dismiss the possibility that they may not have accurately represented their completion and job placement rates. However, the private schools interviewed did appear to be much better linked to the labor market than the public institutions. They showed little interest in better labor market information because they believed they had already established reliable channels of communication with employers. As one commented:

> Students never have any problem getting a job. The school puts a lot of effort into working with employers and into placement.

Private schools reported program completion and job placement rates ranging from 75 percent to 100 percent.[6] "All graduates are working," said one school. "Jobs are waiting for students when they complete the training." These apparently high rates of program completion and job placement may be in large part the result of the selectivity of the schools, their consequently higher prestige and ability to guarantee highly qualified graduates, and the financial commitment required of students. However, it may also be the result of the school's interest in finding students jobs and of the informal system of relationships that the small private school may have developed with employers in their occupational area.

Table 14

Placement Methods of Public Sector Vocational Education Institutions
(percent distributions)

Placement Procedures	
Placement Office	13
Informal Placement by Teachers	60
Other	7
None	20
Total	100
Number = 15	

SOURCE: "Survey of Alaskan Postsecondary Vocational Institutions" (Fairbanks: Institute of Social and Economic Research, University of Alaska, 1978).

Table 15

Location of Alaska's Vocational Education Institutions
(percent distributions)

	Public/ Independent Nonprofit	Private	Apprenticeship	Total
Urban w/central. location	50	94	100	82
Urban w/rural extensions	6			2
Rural w/central. location	19	6		8
Rural w/village extensions	25			8
Total	100	100	100	100
Number =	16	17	15	48

SOURCE: "Survey of Alaskan Postsecondary Vocational Institutions" (Fairbanks: Institute of Social and Economic Research, University of Alaska, 1978); Alaska Commission on Postsecondary Education 1977-78, *Directory of Postsecondary Educational Institutions in Alaska.*

Apprenticeship Programs

Apprenticeship programs, as mechanisms for unions both to train and to restrict the supply of labor, have an organization quite different from other educational institutions. They are essentially "coopera-

[6] Real estate schools are an exception since many students take such training for reasons unrelated to finding employment, such as to speculate on real estate or buy a house.

tive programs" which combine formal classroom training with direct work experience. Students do not pay tuition but receive wages for work performed on the job. Both the prospect of immediate earnings and the high wage rates and prestige of the skilled crafts make apprenticeship programs highly attractive to students. Competition for apprenticeship places is keen.

Of the 157 vocational programs operating in Alaska in FY1978, 11 percent were apprenticeship programs. These programs enrolled approximately 16 percent of Alaska's vocational students.[7]

Apprenticeship programs have much more stringent entrance requirements and general screening processes than the other sectors. Most of the programs require applicants to take the General Aptitude Test Battery (GATB). Others require applicants to take the GATB plus a qualifying exam which tests basic mathematics proficiency. All apprenticeship programs have age requirements. Applicants usually must be between 18 and 30 years old. In addition, they must pass an interview which covers such areas as work attitudes, judgment, and sense of responsibility.

Apprenticeship programs serve a much narrower range of students than the public or private sectors. Students are primarily white males between the ages of twenty and twenty-five (Table 6). However, the efforts of such organizations as CETA and Apprenticeship Outreach to get Natives and other minorities into apprenticeship programs may be bearing fruit. In our interview, 40 percent of the apprenticeship programs reported a target group (Table 5). According to the Bureau of Apprenticeship Training Statistics, Alaska Natives comprised 16 percent of the FY1978 enrollment in apprenticeship programs (Table 6), about their proportion in the general population. Efforts to bring females into apprenticeship programs have been less successful. Only 7 percent of apprentices in 1978 were female.

Apprenticeship programs furnish the best examples of vocational program planning based on labor market demand. The number of new students accepted is based on the number of employed journeymen. When many union members are out of work, as occurred during 1978, few students are trained. Of the thirteen apprenticeship programs examined during the summer of 1978, six were virtually closed due to the high proportion of union members out of work. As one program director explained:

> The work situation looks very poor. We have one hundred apprentices now and only ten are working. We want to be careful about taking more than we can find work for.

The union system of making educational openings almost entirely contingent upon labor market demand prevents fields from becoming excessively saturated with workers. However, it means that training comes to a standstill when the economy takes a downturn. The generation of students who would ordinarily be entering apprenticeship programs at this stage in their lives are denied these career opportunities. While we argue in this study that vocational programs with the goal of job preparation should be more closely geared to the labor market, it would obviously be infeasible to close down educational facilities to this extent each time employment rates dipped. Nonetheless, greater attention to labor market demand would enable public vocational resources to be more accurately channeled into areas of training which provide the greatest opportunity.

PROBLEM AREAS IN VOCATIONAL EDUCATION

Vocational education problems in Alaska occur primarily in the publicly supported institutions. These are institutions that affect the largest number of vocational students. These are also the institutions which enroll that group of Alaskan students who have few of the special qualifications needed for success in the job market. Thus, it is of considerable importance to identify major problem areas and explore means of addressing them.

1. Confusion About the Relevant Goals of Vocational Education in Alaska

Preparation for Jobs in the Community or Outside the Community

Alaska is a very difficult state in which to develop vocational education programs relevant to the labor market and the job needs of the unemployed. First, Alaska has a very small employment base. The entire number of nonagricultural jobs in Alaska in 1979 totaled only about 165,400.[8] Fewer jobs exist in the entire state of Alaska than in the city of Tucson, Arizona. The small number of jobs, particularly

[7] While twenty-four Alaskan apprenticeship programs are listed in the Anchorage Training Information Center's *Apprenticeship Information: A Handbook for Guidance and Employment Counselors*, September, 1977, we included only fifteen programs, essentially those operating in FY1978. However, estimates of the number of programs operating in FY1978 vary because of discrepancies in whether the program was "closed" due to the high unemployment of union workers.

[8] *Alaska Annual Planning Information, FY1979*, p. 10.

in specialized occupational areas such as dental hygiene or computer programming, make it difficult to plan vocational programs which do not quickly saturate the job market.

Second, the largest numbers of jobs available in Alaska are located in Anchorage, while the highest rates of unemployment are found in communities outside the Anchorage area, such as Bethel and Fairbanks. Vocational programs in those economically depressed communities are under special pressure to prepare unemployed residents for jobs, but few regional job openings exist. Moreover, future job developments, such as the gas pipeline or bottom fisheries, tend to be highly uncertain.

Third, the high rate of migration to Alaska during "boom" periods quickly expands the skilled labor supply. Between 1970 and 1977, for example, Alaska's civilian labor force increased by 90 percent, primarily as a result of pipeline construction.[9] Graduates of Alaskan vocational programs will find themselves competing for available jobs with a large pool of migrants, including highly trained workers who cannot find employment and are willing to settle for jobs for which they may be overqualified.

Vocational programs in Alaska are under political pressure to prepare students for jobs in Alaska and often in their local communities. In some training areas, this goal may make sense. For example, teacher aide training for rural residents appears to have high employment potential. Vocational programs are particularly apt to lead to local employment when arrangements are made with employers so that the vocational program serves as a form of preservice or in-service education.

For many communities, however, preparing students for local jobs may be a largely futile enterprise. Planning vocational programs that enable students to migrate from job-scarce to job-plentiful regions of the state and also out of the state may have greater benefit for individual students. However, educators in planning vocational programs rarely take into account the statewide labor markets, much less the national. Community colleges especially have a focus on serving local communities, which restricts their point of view. However, local students may not be nearly as "place-bound" as is commonly assumed. The survey of vocational education students in Fairbanks, for example, showed that only about 40 percent of those students planning to use their training for a job were interested in jobs only in Fairbanks. Of the group, almost 40 percent indicated they could seek employment in Anchorage and about 35 percent said they could move anywhere in Alaska. Many students in community colleges are young single people who travel extensively or are attached to families that may decide to leave Alaska. Indeed, those schools which have attempted to do follow-up studies of program graduates often find the task extremely difficult precisely because of the high rate of student mobility which makes it hard to locate former students.

RECOMMENDATION: Vocational educators should determine the extent to which their students may be interested in employment outside their region. If large numbers of students are mobile, both statewide and national labor market needs should be taken into account in planning vocational programs.

Job Skills Versus Practical Skills

Many vocational programs in Alaska perform functions other than job preparation. Students may take welding courses, for example, not to become welders but to learn how to fix their sleds or snowmachines. In the survey of Fairbanks vocational education students, for example, about 35 percent were enrolled in vocational programs to develop vocational skills and about 30 percent were taking courses to develop useful practical skills. Others were enrolled for such reasons as career upgrading or obtaining a degree.

Vocational programs with practical education goals perform important services. In those rural communities that lack repair facilities, for example, knowing how to repair equipment not only saves money but also makes it possible to reuse rather than abandon equipment. Teaching practical skills is a function of vocational education that is particularly appropriate to Alaska with its small, isolated communities and tradition of individual self-sufficiency. In fact, such educational goals may increase personal well-being far more than vain attempts to train the unemployed for speculative or nonexistent jobs.

The problem lies in the confusion of job skills versus practical skills as program goals. The two types of programs require different program content, different planning methods, and different evaluation criteria.

The primary method of evaluating vocational education programs, for example, is to calculate the proportion of graduates who are employed in jobs relevant to their training. CETA prime sponsors and legislators press vocational educators for follow-up studies on job success. Yet, such a criterion is irrelevant if most students are enrolled to upgrade their job skills or to acquire practical skills.

In sum, at least four different types of vocational programs make sense in Alaska. Figure 1 summar-

[9] *Ibid.*, p. 6.

Figure 1

Goal Alternatives for Alaskan Vocational Programs

	Major Program Rationale	Target Students	Major Planning Methods	Labor Market Relationship	Major Evaluation Criteria
TYPE I JOB PREPARATION FOR THE LOCAL LABOR MARKET	Frequent local job openings; a substantial number of students tied to the community	Unemployed; new job-seekers	Local employer surveys; contacts; student interest	Strong local employer relationships; cooperative education stressed; job development activities	Job placement
TYPE II JOB PREPARATION FOR THE STATEWIDE AND NATIONAL LABOR MARKETS	Few local job openings; substantial number of mobile students	Unemployed: new Job-seekers	Statewide and national information on job shortage and job surplus areas; statewide and national industry contacts; student interest	Contact w/major statewide employers and state and national trade associations; cooperative education stressed through summer/semester programs; job development activities	Job placement
TYPE III CAREER UPGRADING	Potential for increased job skills, earnings and career mobility	Employed community residents	Local employer contacts; occupational mobility analyses; student interest	Strong local employer relationships	Increase student earnings and occupational mobility
TYPE IV PRACTICAL SKILLS FOR PERSONAL USE	Potential for reducing cost of living and providing technical skills important to local life styles	Community residents	Analyses of local life styles and useful practical skills; student interest	Not applicable	Student enrollment

izes these alternatives and their program implications. Each type, however, makes sense in a different set of circumstances. While some programs may be able to combine several of these goals, each emphasis requires a particular set of planning and evaluation methods and support services.

RECOMMENDATION: Vocational educators should determine what types of program goals are appropriate for their communities and student populations. These goals should guide decisions about program content, planning and evaluation methods, and funding priorities.

2. Lack of Information on the Alaska Labor Market

Vocational education programs oriented toward job preparation need to be much better linked to the labor market than is currently the case in many publicly supported vocational education institutions. Figure 2 illustrates the types of relationships that are important to a program seriously concerned with helping students get jobs. One of the main problems of vocational programs is the lack of usable information on local and statewide labor markets. The projections of occupational demand produced by the Alaska Department of Labor appear to be fulfilling the need for Alaska occupational information. However, as described below, these occupational projections in their present form provide little assistance in vocational planning.

Vocational educators emphasized the need for information on the Alaska labor market, particularly at the regional level. As one community college president said:

> Our biggest need is for labor market demand projections through, say, 1982. We get information on current job openings, but this doesn't help in planning new programs or deciding what to do with existing programs.
>
> We also need to know where jobs will occur so we can advise students about possibilities of having to relocate to find employment.

The Alaska occupational employment forecast, which is produced by the Alaska Department of Labor's (ADL) Research and Analysis section through an in-house econometric model, is the best source of information available. These projections are intended "to supply partial answers to the questions of: how many job openings will be available in Alaska from 1978 to 1983; what kind of jobs they will be; and consequently, what training or education will be required of, or beneficial to, future jobseekers?" [10]

[10] Department of Labor, *Alaska Annual Planning Information, FY1979*, 1978, p. 12. The crucial table is "Estimated Employment by Occupation and Growth and Replacement Needs in Alaska," pp. 16-20.

As a basis for vocational planning, however, they have serious weaknesses:

1. The listed occupations do not correspond to the occupational output of many training programs. A number of the occupational categories are too broad or combine skilled and unskilled workers.
2. Little regional information is provided. Experienced observers report major differences in labor market needs in different regions of the state, particularly rural and urban Alaska. [11]
3. Openings which result from jobholders leaving Alaska are not included. Projections of average annual openings are made on the basis of (a) occupational growth and (b) occupational replacement needs which derive from death, retirement, disability, and temporary withdrawal from the labor force. Emigration from a state is not a component of job replacement needs nationally, the basis of this methodology. However, it is likely to be an extremely important source of job openings in Alaska with its high rate of population turnover.

Knowledgeable users often have little confidence in these labor market projections since they do not correspond to their personal experience with the job market. [12] In general, these projections are likely to underestimate average annual job openings.

Most of the problems with ADL's projections, such as the paucity of regional information, are inherent limitations of econometric modeling (the best available method) as a basis for projecting occupational demand. However, vocational educators are given little assistance or guidance in interpreting this information. The most common error, which appears continually in vocational planning documents, is to use *occupational demand figures alone as a basis for determining training needs and to pay no attention to supply—the competition trainees will face in seeking jobs.* Alaska's chronically high level of unemployment creates a large pool of unattached workers

[11] See the comments on occupational shortage and surplus areas from different employment centers, Alaska Department of Labor, *Occupational Supply and Demand*, 1978.

[12] Job openings resulting from turnover, where a jobholder leaves his present job and takes a job in the same field, are also not included in labor market projections since these jobs do not represent new openings. Such job turnover, however, may create an impression of greater demand than is actually present.

Figure 2

A Vocational Education Program Linked to the Labor Market

PROGRAM: FOOD SERVICE

LOCAL MANPOWER INFORMATION

EMPLOYMENT SERVICE(S)

- Provide counselor with names of graduates
- Arrange for ES interviewers to address students on job hunting
- Contact culinary placement officer regularly regarding
  - a. No. openings received
  - b. No. applicants
  - c. Types of skills employers request
- Obtain information on any known shifts in local skill requirements

EMPLOYERS

- Identify relevant employers
- Identify various skill requirements of these employers
- Acquaint employers w/training program & promising students
- Develop cooperative education programs
- Invite employers to take part in mock hiring sessions
- Contact personnel officers & scan newspapers to determine current hiring activities
- Develop Program Advisory Committee

CETA

- Identify local CETA service providers
- Develop channels to receive notice of CETA request for proposals (RFF)
- Submit training proposals as a means of serving such groups as the unemployed
- Refer needy students to CETA - inform them of Ak. State Loan & other aid sources

STATEWIDE & NATIONAL MANPOWER INFORMATION

SIMILAR VOCATIONAL EDUCATION PROGRAMS

- Identify related programs
- Determine the manpower supply being trained statewide
- Share ideas about program strengths & weaknesses

DEPT. OF LABOR RESEARCH & ANALYSIS (R&A)

- Consult R & A to determine labor-market data most useful in program planning
- Use R & A as resource in meeting special data requirements
- Use R & A publications to monitor current supply & demand by occupation
- Use R & A publications to estimate long-range employment projections

NATIONAL OCCUPATIONAL MARKET

- Use U.S. Dept. of Labor publications on job shortage & job surplus areas
- Examine job skill requirements through trade associations & industry contacts

STUDENT BODY INFORMATION AND JOB PLACEMENT SERVICES

- Determine number of individual students in program
- Identify students w/employment-related as opposed to personal-interest goals
- Determine students' specific occupational goals & residence plans
- Acquaint students with labor market situation
- Help develop job opportunities

who are competing with vocational training program graduates for job openings. Immigration also brings a continuous supply of jobseekers to the state who have skills in vocational training areas. For example, 34 percent of the female migrants to Alaska between 1965-70 were clerical workers and 23 percent of the males were craftsworkers.[13]

The projection of occupational supply is a field still in its infancy and reasonable projections of the future supply of labor by occupations cannot be made.[14] However, information on supply and demand in the current job market can be obtained. Vocational programs place trained labor in the job market in a short time span (a few months to 2 years) so information on current job conditions is highly relevant.

The Alaska Department of Labor collects and publishes some information relevant to current job conditions. One source is the previous occupations of the insured unemployed. The other source is a count of applicants and openings in various occupational fields at employment centers.[15]

This information could be presented in a form much more useful to regional vocational planning. For example:

1. Job applicant and insured unemployment information could be broken into occupations relevant to vocational education planning. For example, clerical workers (a vocational program area) are presently combined with sales workers (not a program training area) in descriptions of the previous occupations of unemployed.
2. Information could be given on total *annual* job openings and total *annual* job applicants in an occupational category. It is the ratio of total openings to total applicants that is the critical figure.[16] For purposes of vocational planning, the present series is misleading.
3. Regional breakdowns could be given on the characteristics of the unemployed, job openings, and job applicants.
4. An interpretive analysis of regional surpluses and shortages of occupations as well as the reasons for the situation (such as poor pay and working conditions versus lack of skilled applicants) by the Employment Service staff would be valuable.[17]

To illustrate the problems in attempting to use current Department of Labor information for vocational planning, let us use the clerical field as an example. Information on this occupational area is indeed substantially better than on most others since labor market data specifically breaks out various categories of clerical workers.

Suppose a vocational educator has the following question: On the basis of current and anticipated labor market conditions, should this institution set up a new secretarial program? The occupational employment forecast in *Alaska Annual Planning Information* suggests a healthy future demand for clerical workers:

> More than 3,700 job openings are expected, on the average, for clerical occupations each year through 1983. The stenographer, typist and secretarial occupations can look forward to about 1,440 vacancies each year.[18]

If the vocational educator chanced to turn to a later section of the report dealing with employment service applicants and openings, he would find different statistics which suggest a substantial oversupply of clerical workers:

> The number of applicants for clerical positions, like the number for professional positions, was approximately three times as great as the number of openings received.[19]

This statement may well be an error of interpretation, resulting from failure to recognize the problem of carryover of active applicants from month to month. If the vocational educator made a special request to Research and Analysis for annual information on applicants and openings in the clerical area, he would find yet a different situation, suggesting clerical sup-

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[13] Daniel A. Seiver and John A. Kruse, *Who Migrates to Alaska?* Man in the Arctic Program Working Paper (Fairbanks: University of Alaska, Institute of Social and Economic Research, 1977). More recent information is unavailable.

[14] For a discussion of this problem, see David E. Kidder, *Review and Synthesis of Research on Manpower Forecasting for Vocational-Technical Education* (Columbus: Ohio State University, 1972).

[15] This information is reported in *Alaska Annual Planning Information* and *Alaska Economic Trends*, State of Alaska, Department of Labor.

[16] The Research and Analysis section in the Alaska Department of Labor can provide this information upon individual request (see Table 16). The published data series lists currently active applicants (an overcount since applicants from previous months are counted unless they call to have their names taken off the list), job openings in one month alone, and the percentage of hard-to-fill openings (which may be shortage occupations due to low pay or poor working conditions, not lack of trained labor).

[17] State of Alaska, Department of Labor, *Occupational Supply and Demand* (Juneau, 1978) contains examples of such an analysis, but it is too casually done to be reliable.

[18] *Alaska Annual Planning Information*, p. 13.

[19] *Ibid.*, p. 30.

ply was just about in balance with demand (Table 16). Yet, the sizeable number (11 percent) of unemployment insurance weeks claimed by individuals previously in the clerical and sales fields also raises the possibility of an oversupply of clerical workers.

Table 16

Job Applicants and Job Openings in Certain Occupations Related to Vocational Training: 1977

Types of Jobs	Statewide		Anchorage Only	
	Applicants	Openings	Applicants	Openings
Clerical				
Secretaries	1,176	1,196	418	299
Steno, Typing, Filing & Related	187	178	98	98
Bookkeeping	775	475	333	226
Computer & Account Recording	2,319	1,715	985	830
Food Service				
Waiters, Waitresses & Related	1,513	1,822	620	998
Bartenders	498	93	212	36
Misc. Cooks, Exc. Domestic	541	202	192	53
Kitchen Workers	757	978	320	489
Machine Trades				
Motorized Vehicle & Engine Rep.	1,119	654	423	410
Aircraft Repairing	323	47	194	37
Structural Work				
Excavating, Grading & Related	149	98	43	63
Carpentry	2,200	1,307	735	425
Plumbing, Gas Fitting & Related	483	203	180	89
Misc. Construction	1,631	1,472	409	277
Misc. Structural Work	421	360	177	135

SOURCE: Research and Analysis Section, Alaska Department of Labor, Special Information Request.

If the vocational educator also consulted the general comments on the clerical job situation made by each employment center in 1978, he would find clerical shortages reported in certain areas, such as Bethel and Nome. In other areas, he would find an oversupply of applicants for clerical positions, except for applicants with a high degree of skill and experience.[20] However, these regional interpretations in some instances contradict common experience (such as listing "secretary" as a shortage occupation in 1978 in Fairbanks).

After spending many hours working with Department of Labor staff on how to interpret their labor market data, we finally asked a Department of Labor analyst, "what would you do if you wanted to start a vocational education program with the best prospects of putting people to work?" "Worry a lot," the analyst replied.

RECOMMENDATION: The Alaska Occupational Information Coordinating Committee (AOICC), (an agency set up under the Vocational Education Amendments of 1976 specifically to deal with the problem of making available occupational information for statewide planning), should make the development of useful Alaska labor market information its first priority.

RECOMMENDATION: The Research and Analysis Section of the Alaska Department of Labor should improve the presentation of Alaska labor market information in its current publications. Regional labor market information should also be provided through carefully done descriptive reports from local manpower offices.

While improved labor market information from external sources such as the Department of Labor would be of great value, vocational educators need to develop their own sources of vocational information. Private schools and apprenticeship programs had less need for labor market statistics since they were already in close contact with employers.

Traditionally, vocational educators in the public sector have not been effective in establishing links with employers. Studies of this dilemma suggest three major problems: [21]

1. Vocational institutions have a poor organizational structure on which to relate to industry and build cooperative efforts.
2. Vocational institutions do not provide adequate staff for developing industry-education cooperation.
3. Vocational staff members, who generally come from education rather than industry backgrounds, do not know much about the structure and motivation of business and industry.

Alaska is not an exception to these national problems. Typically, vocational institutions do not delegate to specific staff formal responsibility for keeping in contact with employers, helping students find jobs, or conducting student follow-up studies. These essential activities are left to the discretion of program heads or individual instructors.

A Labor Market Information Advisory Committee

In the absence of published regional labor market information, vocational institutions can develop

[20] *Occupational Supply and Demand*, pp. 13-27.

[21] These observations were made by Samuel Burt based on a national study on industry participation in vocational education for the W.E. Upjohn Institute for Employment Research. Cited in F. Parker Wilbur, "Advisory Committees and the Business Curriculum" (Los Angeles: Los Angeles Technical College).

their own sources. Use of an advisory committee is one such method. However, unless the advisory committee consists of several major employers from each program area in which vocational training is taking place, the committee's knowledge of occupational conditions may be primarily anecdotal.

The Employer Survey

The employer survey is generally a far better approach to developing local labor market information than the advisory committee. Local employers are systematically queried about their current and expected manpower requirements, skill requirements, and ports of job entry. However, this method has its drawbacks. It is costly in staff time. Employers may be inaccurate in projecting their own employment needs and may project a greater number of openings than anticipated to encourage training that ensures them a pool of applicants. But, the local employer survey also has a number of advantages. It can provide good, quick estimates of short-term manpower requirements. Most important, it can help the vocational institutions communicate with local employers. It can help schools become more knowledgeable about employer needs, their curriculum implications, how the job market works, and how they can make their graduates competitive. Where the major vocational program goal is job preparation for the local labor market, local employer surveys are invaluable.

No single method of forecasting manpower requirements will provide vocational educators with "cookbook" information for program planning. Different program goals also require different labor market sources. In general, however, vocational educators need to use a combination of methods:

1. Local employer surveys and opinions of area experts obtained by the vocational institutions.
2. Statewide occupational projections and information on regional and statewide job applicants and job openings published by the Alaska Department of Labor.
3. National occupational projections and information on job applicants and openings published by the U.S. Department of Labor.

RECOMMENDATION: Vocational education institutions should delegate formal responsibility for labor market analysis to a staff member. This staff member should become knowledgeable in how to conduct local employer surveys and how to use and interpret diverse sources of labor market information.

Manpower need is, of course, not the only consideration in planning a vocational program, even when the fundamental goal of the program is job preparation. The Iowa Priority Program suggests the following technique for making decisions about vocational education priorities.[22]

A. Manpower Needs — 30 points
B. Availability of Students — 40 points
   1. Student Interest
   2. Student Need
C. Program Effectiveness—30 points
   1. Attrition Rates
   2. Placement Rates
   3. Cost-Benefit Comparison

Better manpower forecasting alone will not necessarily orient vocational programs to the labor market. Manpower projections are used as justifications for starting a program but rarely for terminating it.[23] Staff and plant are already in place. However, reasonably adequate labor market information is an essential component to vocational education planning and to responsible outside criticism of the system.

3. Lack of Attention to Job Placement and Job Development

Vocational institutions are strategically situated to help residents compete for the limited supply of jobs in many areas of Alaska. According to the institutions surveyed, almost all students were Alaska residents. If job training were more closely linked to job placement strategies, the vocational education system could help give Alaskan residents a competitive advantage in a tight job market. To the extent that Alaskan residents are more stable employees than recent migrants, employers would also benefit from reduced job turnover costs.

However, job placement is not an important activity in most public vocational institutions. As previously discussed, few institutions have placement offices or formally delegate job placement responsibility. While lack of funding is the common explanation for this inattention, money for job placement was the lowest funding priority of all vocational institutions (Table 7). The problem may be as much staff attitude and institutional priorities as inadequate funding. Many vocational educators have little interest in job placement. Student enrollment, not gradua-

[22] *Iowa Priority Program Areas Requiring Specialized Training of Less than Baccalaureate Degree* (Des Moines: Iowa State Department of Public Instruction, 1974). (ED 106 655)

[23] Kay Adams, *National Large Cities Vocational Education Needs Study* (Columbus: Center for Vocational Education, 1977). (ED 141 572)

tion or job placement rates, is the visible indicator of program success.

Job placement must consist of substantially more than posting random job openings or providing a local Employment Service office with a list of graduates. Where job openings are scarce, the heart of job placement is *job development* -that is, capturing for students what jobs are available.

Job development typically consists of a range of activities.[24] For example, at the Alaska Skill Center, it includes:

- Scanning newspapers and contacting personnel officers to determine where hiring is taking place and alerting qualified students to these openings.
- Personally recommending qualified, interested students to potential employers.
- Traveling around the state contacting employers; determining their training needs, hiring patterns, and soliciting from them suggestions for program content.
- Inviting employers to address students and instructors on their needs and requirements and holding mock interviews.

These activities also help orient curriculum to employers' needs. As the Alaska Skill Center pointed out:

> We get comments from employers, '. . . you don't teach your people to use egg pans, you use a grill. Nobody uses grills anymore.' So we went out and bought a dozen egg pans. It's the kind of thing that doesn't make a big splash, but all the little changes add up and make a big difference . . .

RECOMMENDATION: Job placement and job development activities should be an essential component of Alaska vocational education programs which have job preparation goals. Specific vocational education funds should be allocated for placement activities.

Many vocational training institutions, particularly the community colleges, are too small to justify their own job developer. The teaching staff should assume some job development activities since the instructors are the ones most familiar with the occupational field and individual students. However, the activities of local instructors are generally confined to the local community. Job development may require negotiations with outside employers or agencies in the early stages of a proposed activity. For example, it might require convincing an agency to use paraprofessionals trained at the community college in a new program. The need is for a statewide job developer who works with different institutions. Another important statewide vocational education role is the coordination of activities of different vocational institutions. Vocational institutions often plan programs in isolation, duplicate other institutional efforts, and contribute to an oversupply of labor in particular fields.

RECOMMENDATION: The Alaska Department of Education should assign to specific vocational education staff members the role of assisting all public vocational institutions with job development activities and also of coordinating vocational education program planning.

Another effective strategy for helping vocational students capture scarce jobs is cooperative education, which uses employment experience as part of the educational program. It is particularly useful in programs designed to prepare students for the local job market, since the student becomes a known entity, not one of a mass of job applicants. Employers may also count cooperative experience as employment experience, an important advantage in a tight job market where job openings have experience requirements.

On the national level, cooperative programs have been growing rapidly in postsecondary vocational institutions.[25] They have become increasingly prevalent in business and office occupations, trade and industrial programs, and health programs. Typically, the employer provides salary, experience, and skill training, and the vocational institution monitors and gives credit for the work experience. In a national assessment of postsecondary cooperative education from 1975-77, Cohen found:

1. A postsecondary program that provides the student with a cooperative education experience is far more valuable to the student in terms of career selection and preparation than the same program would be without the cooperative educational component.
2. Cooperative education programs are an important source of student financial aid, particularly for low-income and minority students.
3. Cooperative education increases a student's rate of financial return from schooling.

[24] See Robert Gibson and Marianne Mitchell, *Identification of Effective Concepts and Practices in Placement and Follow-up Services and Incorporation, into Pre- and/or In-service Training of Local Personnel to Implement Local Placement and Follow-up Efforts* (Columbus: Center for Vocational Education, 1976) (ED 134 804); and Robert Gibson, *A Guide to Developing School Based Placement and Follow-up Programs* (Bloomington: Indiana University) (ED 134 715). See also references listed in Appendix.

[25] Alan Cohen, Robert Deane, and Steven Frankel, *Cooperative Education A National Assessment* (Silver Springs, Maryland: Applied Management Science, 1977). (ED 148 236)

4. Employers realized substantial financial benefits from cooperative programs since cooperative students performed similar work as regular employees at reduced pay and fringe benefits.
5. The majority of employers indicated that a very important benefit of cooperative participation was that it aided them in finding potential permanent employees.[26]

RECOMMENDATION: Alaska vocational institutions should incorporate cooperative programs as much as possible into their educational programs and use cooperative education as a job placement strategy.

4. Low Numbers of Graduates

The low number of graduates in some vocational programs, particularly in the community colleges, requires investigation. There may be no problem. As administrators suggest, the major cause may be that many students had no intention of completing a program. [27] Perhaps they were interested in acquiring just enough skills to get a job, in upgrading current job skills, or acquiring practical skills. However, this situation may also indicate dissatisfaction with program quality or financial problems which such strategies as cooperative education may help solve. Moreover, students who leave programs at low skill levels may be in a poor long-term labor market position even if they locate an immediate job.

RECOMMENDATION: Vocational educators should calculate completion rates in different program areas, determine the causes of low rates, and inform students about their position in the job market at varying skill levels.

5. Lack of Financial Assistance for Unemployed Non-Native [28] Alaskans in Need of Vocational Training

Unemployed and economically disadvantaged Alaskans often need financial assistance if they are to take advantage of vocational training opportunities. Such financial aid is available for Native Alaskans through such sources as the Bureau of Indian Affairs Employment Assistance Program and the CETA funds of the thirteen Title III Native prime sponsors. However, the largest number of economically disadvantaged and unemployed Alaskans are non-Native (see Table 17). These non-Natives in Alaska are not being equitably served by CETA programs. They have few other sources of financial assistance for job training.

Table 17

Estimate of Alaska's Economically Disadvantaged Population by Ethnic Status: 1978

	Estimated Total Population	Estimated Economically Disadvantaged Population	Est. Nos. CETA Served FY78	Proportion Economically Disadvantaged CETA Served
White	325,282	32,835	3,143	10%
Ak. Native	54,405	26,822	10,831	40
Black	20,067	4,676	487	10
Other	6,913	1,148	222	13
Total	406,667	65,481	14,683	23%

SOURCE: Institute of Social and Economic Research estimates prepared for State Manpower Services Council, 1978, on the basis of the Survey of Income and Education, 1975.

Lack of financial assistance for vocational students was a problem stressed by 50 percent of those vocational institutions that mentioned barriers in the use of their programs (Table 18). As one community college emphasized:

> The biggest problem is students who are recently on their own. They cannot afford tuition and cannot get financial aid because parents still claim them on their income tax.

Vocational students in community colleges have access to six types of financial aid:

Federally Sponsored Sources
1. Supplemental Education Opportunity Grant.
2. National Direct Student Loan.
3. Work-Study.
4. Guaranteed Student Loan.
5. Basic Education Opportunity Grant.

State Sponsored Sources
6. Alaska Student Loan Program.

However, the first three financial assistance programs have very limited funds and are usually out of money for the following school year by early summer. As one financial aids officer explained:

> Financial aid has not been so scarce on Alaskan campuses for many, many years. During the pipeline, more jobs were available and fewer people were in school. We weren't able to utilize our funds so we were cut back. I tried to explain the situation to Region X but they just cut us according to the under-utilization formula.

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[26] *Ibid.*

[27] The student survey developed through this project contains questions on educational plans and can be used to examine student intentions in completing different programs.

[28] Meaning not Eskimo, Aleut, or Athabascan Indian.

Vocational students are eligible for the Alaska Student Loan Program. The Alaska employment forgiveness aspect of this program makes this source especially valuable for students seeking employment. However, the Alaska Student Loan Program depleted its 1979-80 fund allocation in August 1978. An unemployed individual usually needs financial assistance right away and cannot wait to put in an application for the next year's funding cycle.

RECOMMENDATION: The Alaska Commission on Postsecondary Education should set aside a proportion of Alaska State Loan Funds for unemployed, economically disadvantaged Alaskans seeking vocational education. These special funds for the unemployed should be distributed over the course of a year rather than allocated in the summer months.

Unemployed Alaskans in need of vocational training may also have been out of school for a while and know little about funding possibilities. Community colleges refer students to the nearest University of Alaska financial aids office, and these offices may not be equipped to help students in need of vocational training. [29]

RECOMMENDATION: Vocational institutions should inform students directly about available sources of financial aid. Schools should also explore other strategies for helping students acquire funds, for example, by seeking special industry scholarships through advisory councils and using cooperative programs as a financial aid mechanism.

CONCLUSION

The problems in Alaska's vocational education system are not fundamental matters requiring major overhauls of existing programs, large expenditures of new funds, or the creation of new institutions. They are primarily problems in the fine tuning of the system. Many of the recommendations made in this report require more the redirection of current activities than new financial expenditures. They are matters of clearer planning and modest changes in the present efforts of vocational education and manpower personnel. Table 19 (see pages 26 and 27) summarizes these recommendations and relevant action steps. Small changes, however, can make large differences to the success of Alaska's vocational education enterprise.

Table 18

Barriers to Vocational Program Utilization Reported by Postsecondary Vocational Institutions

Insufficient financial aid	50%
Lack of counseling, dormitory, and other support services	21
Better preparation for program	14
Lack of information on program	14
Centralized location	14
Other	14
Number of Institutions[a] = 14	

[a]No barriers were brought up by eighteen of the total number of programs interviewed. However, ten of those were apprenticeship programs.

SOURCE: "Survey of Alaskan Postsecondary Vocational Institutions" (Fairbanks: Institute of Social and Economic Research, University of Alaska, 1978).

[29]The second listed author of this study contacted one University of Alaska financial aid officer, posing as an unemployed person in need of aid and asked:

"Do you have deferred tuition?"

"*Only in certain instances.*"

"What are those instances?"

"*VA, pending loan, or some form of assurance that we will be paid back.*"

"You mean you don't have any routine system for deferred tuition?"

"*What's your circumstance?*"

"I'm unemployed and would like to be able to go to school next semester and I don't have the money to pay tuition right now."

"*Oh, there's really not a whole lot we can do about it.*"

"Ok, thank you."

Table 19

Summary of Recommendations and Estimated Costs

Problem Area	Requires Re-direction of Current Effort	Requires Initial Development Effort (Estimation)	Requires Additional Operating Funds (Estimation)
1. Confusion About the Relevant Goals of Vocational Education in Alaska			
RECOMMENDATION 1: Vocational educators should determine what type of program goals are appropriate for their communities and student populations. These goals should guide decisions about program content, planning and evaluation methods, and funding priorities.	X	Assessment of AK goal alternatives for vocational ed; $25,000	(–)*
2. Lack of Information on the Alaska Labor Market			
RECOMMENDATION 2: The Alaska Occupational Information Coordinating Committee (AOICC), an agency set up under the Vocational Education Amendments of 1976 specifically to deal with the problem of making available occupational information for statewide planning, should make the development of useful Alaska labor market information its first priority.	X	Model local employer survey $40,000	(–)
RECOMMENDATION 3: The Research and Analysis Section of the Alaska Department of Labor should improve the presentation of Alaska labor market information in its current publications. Regional labor market information should also be provided through carefully done descriptive reports from local manpower offices.	X		Staff work Research and Analysis, Dept. of Labor $30,000
RECOMMENDATION 4: Vocational education institutions should delegate formal responsibility for labor market analysis to a staff member. This staff member should become knowledgeable in how to conduct local employer surveys and in how to use and interpret diverse sources of labor market information.	X		Vocational staff development activities $35,000
3. Lack of Attention to Job Placement and Job Development			
RECOMMENDATION 5: Job placement and job development activities should be an essential component of Alaska vocational education programs which have job preparation goals. Specific vocational education funds should be allocated for placement activities.	X		Instruction release time job placement $10,000-$40,000 per voc ed institution;
RECOMMENDATION 6: The Alaska Department of Education should assign to specific vocational education staff the role of assisting all public vocational institutions with job development activities and also of coordinating vocational education program planning.	X		Statewide job developer position $40,000
RECOMMENDATION 7: Alaska vocational institutions should incorporate cooperative programs as much as possible into their educational programs and use cooperative education as a job placement strategy.	X		
4. Low Numbers of Graduates			
RECOMMENDATION 8: Vocational educators should calculate completion rates in different program areas, determine the causes of low rates, and inform students about their position in the job market at varying skill levels.	X	Model internal vocational evaluation system $40,000	(–)

Table 19 (cont.)

Problem Area	Requires Re-direction of Current Effort	Requires Initial Development Effort (Estimation)	Requires Additional Operating Funds (Estimation)
5. Lack of Financial Assistance for Unemployed Non-Native Alaskans in Need of Vocational Training			
RECOMMENDATION 9: The Alaska Commission on Postsecondary Education should set aside a proportion of Alaska State Loan Funds for unemployed, economically disadvantaged Alaskans seeking vocational education. These special funds for the unemployed should be distributed over the course of a year rather than allocated in the summer months.	X		
RECOMMENDATION 10: Vocational institutions should inform students directly about available sources of financial aid. Schools should also explore other strategies for helping students acquire funds, for example, seeking special industry scholarships through advisory councils and using cooperative programs as a financial aid mechanism.	X		

*Dependent upon outcome of development effort.

APPENDIX: Methods

Scope of Study

This study surveyed Alaskan postsecondary institutions offering vocational education programs in 1978. Postsecondary institutions were defined as those serving persons 16 years of age or older who had graduated from or left elementary or secondary school.[1] Vocational education was defined as programs "which are directly related to the preparation of individuals for paid or unpaid employment or for additional preparation for a career requiring other than a baccalaureate or advanced degree."[2] Thus, this study did not include single vocational courses, such as a typing course offered by a University of Alaska extension center. Nor did it include special job training programs funded under short-term grants or training programs offered by agencies, primarily as in-service education. The study focused on established vocational programs offered by postsecondary educational institutions.

High school vocational programs were not examined in detail because the primary function of many programs is practical education, not job preparation.[3] Secondary school vocational programs emphasize such fields as home economics or woodworking.[4] Rural high schools particularly are developing vocational programs in locally relevant practical areas, such as sled building and greenhouse science. High school programs also provide introductory courses in occupational areas, such as auto mechanics or drafting. However, students generally need more advanced occupational training for these skills to help them substantially in the job market.

An important exception is high school business education and office programs where high school

[1]The definitions of "postsecondary" and "vocational education programs" are based on definitions in the *Alaska Five-Year Plan for Vocational Education FY '78-82* (Juneau: Department of Education, 1978)).

[2]*Ibid.*, p. 275. This definition is consistent with the national definition used by the National Center for Education Statistics. In their *Survey of Programs and Enrollments—Postsecondary Schools*, a vocational education program is defined as "a planned sequence of courses leading to a specific occupational skill such as secretarial science, ornamental horticulture, or body and fender repair. Programs which do not lead to careers should be excluded, such as food preparation for housewives, private pilot training, or charm courses.

[3]Job preparation is the assumed goal of vocational education. See above definition. As this study suggests, however, many postsecondary vocational programs also emphasize practical education.

[4]For a detailed summary of secondary school vocational programs, see Gene Walsh, *An Identification of Vocational Education/Training Activity in Alaska for Fiscal Year 1978*, prepared for the Alaska State Advisory Council on Vocational and Career Education and State Manpower Services Council 1978.

graduates can qualify for many clerical positions. In 1978, these programs enrolled almost 9,900 students and accounted for 40 percent of the total secondary school enrollment in vocational education (Table A-1). The prevalence of high school clerical programs, along with the twelve postsecondary secretarial programs operating in Alaska, may be contributing to an oversupply of clerical workers in some areas of Alaska.

Identification of Vocational Postsecondary Schools

Postsecondary institutions offering vocational programs were identified through the Alaska Commission on Postsecondary Education's 1977-78 *Directory of Postsecondary Educational Institutions in Alaska*. This directory includes institutions licensed in the State of Alaska as of August 1977.[5] Of the thirty-nine institutions included in this group, 79 percent were interviewed. In addition, we obtained basic information on programs and enrollments on the flight schools and other private schools not included in the interview study through "Survey of Programs and Enrollments -Postsecondary Schools" data, collected by the Alaska Commission on Postsecondary Education as part of the program of the National Center for Educational Statistics. We obtained information on apprenticeship program enrollments and student characteristics through the Bureau of Apprenticeship Training.

Table A-1

Statewide High School Enrollments in Vocational Education and Work Experience Programs
(First Quarter 1977-78 School Year)

Program Areas	Enrollment	Proportion of Enrollment
Vocational Education		
Business Education & Office	9,900	40%
Industrial Education & Trade and Industry	9,391	38
Home Economics & Consumer & Homemaking	4,367	18
Agriculture	302	1
Vocationally Handicapped	23	(.1)
Special Education Courses	49	(.2)
Other	647	3
TOTAL[a]	24 679	100%
Work Experience		
Cooperative and/or Work-Experience	1,614	43%
Special Vocational Education & Work Study[b]	1 452	38
Rural Student Vocational Participants[c]	704	19
TOTAL	3,770	100%

[a]This is not an unduplicated count as some students may be enrolled in more than one program.

[b]Enrollments as of May 11, 1978.

[c]1977-78 school year totals.

SOURCE: Gene Walsh, *An Identification of Vocational Education/Training Activity in Alaska for Fiscal Year 1978*. Prepared for the Alaska State Advisory Council on Vocational and Career Education and State Manpower Services Council, 1978, pp. 4-5. (Minor changes made in format.)

Interview with Vocational Postsecondary School Administrators

The first section of the interview covered institution-wide issues such as entrance and tuition requirements, enrollment and graduation rates, age, sex, and ethnic characteristics of students, and institutional goals, problems, and information needs. For each vocational program area that the school offered, basic information was collected on numbers and characteristics of students and graduates.

To relate vocational programs to labor market demand, we used the *Dictionary of Occupational Titles* to identify the occupations for which each vocational program prepared students. These occupations were checked for accuracy with each institution.[6]

An interview form was developed for each school, listing its vocational programs, the occupations we had tentatively identified, and other information about the school available from secondary

[5]Of the postsecondary vocational education institutions listed in this directory, our study included all but the flight schools, H & R Block, the Bible colleges, and the Department of Public Safety Training Academy. These schools were excluded because they were seen as having limited impact on supply and demand in Alaska's labor market. The Department of Public Safety Training Academy offers in-service training. The flight schools are involved in training in large part for recreational and private business purposes. H & R Block is supplementary education. The Bible colleges provide training not traditionally subjected to supply and demand analysis.

[6]A separate publication, intended for use by manpower planners and school guidance counselors, lists postsecondary vocational programs and the occupations for which they prepare students. A section defining these occupations is included as well. See Lynn Wright, *Postsecondary Vocational Training in Alaska* (Fairbanks: Institute of Social and Economic Research, 1978).

sources. The interview form was sent to each institution with a letter stating the date on which we would telephone them to update or correct information presently on the forms and to complete the remainder of the survey.

Interviews were conducted primarily with the presidents of the community colleges, the owners of private schools, and the coordinators of apprenticeship programs. In many cases, these administrators had relied on staff to obtain specific information. The interviews ranged from 1 to 3 hours. Telephone calls were repeated as needed to obtain the required data.

Exploratory Study of Fairbanks Vocational Students' Motivations and Goals

As this study proceeded, it became apparent that a major problem area was confusion about the goals of vocational education students. Were students enrolling in the vocational education programs to prepare for the job market or to acquire practical skills? Similarly, there was lack of information on the communities where vocational students planned to look for jobs. Vocational planning was generally based on the needs of the local labor market, whereas students might plan to look for jobs in other communities.

To develop some information on the goals of vocational students that could be used to address such planning issues, we conducted a survey of vocational students in the public sector in Fairbanks. This study included 238 students, a sample of 50 percent of the adult student enrollment at the Hutchison Career Center, and 33 percent of the enrollment at the Tanana Valley Community College. The interview concerned such topics as students' educational and occupational goals, motivations for enrolling in vocational programs, plans to enter the labor market, and problems and needs. This survey was developed for Fairbanks institutions but can be adapted to the needs of other vocational schools. A copy can be obtained from Dr. Judith Kleinfeld, Institute of Social and Economic Research.

Limitations of Study

A major limitation of this study was the poor information available in the community college system, the largest provider of vocational programs. While these institutions have data on the total number of students in the school, they cannot routinely determine the number and characteristics of individual students enrolled in their vocational education programs. In order to arrive at some reasonable estimation of vocational program enrollments, we used estimating techniques. Use of estimating devices, as well as missing information from some institutions, leads to minor discrepancies in different tables.

The use of telephone interviews with administrators, while substantially less costly than personal travel, also limits the amount and quality of information obtained. Most administrators appeared to be open in discussing program problems. However, it was not possible to check their accounts through on-site observations or discussions with teachers and students. Nor was it possible to discuss vocational programs with individual program heads or instructors, whose knowledge is much more detailed than that of administrators.

BOOK REVIEWS

Eskimos of Northwestern Alaska: A Biological Perspective. **Edited by Paul L. Jamison, Stephen L. Zegura, and Frederick A. Milan, Dowden, Hutchinson and Ross, Inc., Stroudsburg, 1978, 319 pp., illustrations, references, index, appendices (no price information given).**

This is an compilation of biological, linguistic, ethnohistorical, anthropometric, nutritional, psychological, health, and demographic research among Eskimos of Wainwright, Barrow, Point Hope, Kaktovik, and Anaktuvuk Pass, during the years 1968 through 1972. The work was done as part of The International Biological Program and includes a chronology of fieldwork.

It would take a lengthy review indeed to summarize the findings of the twenty-two studies presented here by the thirty-eight scholars involved. Even the editors find this task nearly beyond them, although a final chapter attempts to summarize the essentially biological works.

Briefly, the researchers find that while diet has changed, there seems to be little evidence that it is nutritionally inadequate except for iron intake. However, no clinical evidence of *any* problem relating to diet deficiency could be found.

Eskimos do seem to show more rapid bone loss of mineral content than non-Eskimos, to have greater vital capacity (essentially lung capacity), and some degree of lactose intolerance (common among people not traditionally users of dairy products). Eskimo physical growth rates were found to be both slower

than a non-Eskimo control group and to end earlier, though body weight seems higher at all ages. Historically, there seems to have been a substantial increase in size. In addition, there is a cognitive "slump" for Eskimo teenagers, and basic Piagetian* developmental theory seems supported by Eskimo data. Eskimos tend to age (decline physically) more rapidly than non-Eskimo control groups.

This reviewer's greatest familiarity is with acculturation, social and psychological aspects of Eskimo life, demography, and, to a lesser extent, with nutritional studies. Based upon this, I suggest psychological studies in the volume are quite conservative in findings and guarded in implications. The demographic and nutritional work seems to be solid and acceptable, both in its approach and findings, though the demographic work makes use of only the most limited explanatory variables. This is not meant as a criticism, but merely to explicate what seems to be a guiding element of the entire volume. After their data accumulation, compilation, and organization, both researchers and editors appear to be far more comfortable with limited and conservative, rather than with wide-ranging, analysis.

Overall, the book should prove to be clearly useful, not only to those generally or professionally interested in Eskimos but also to those concerned with comparative studies of biology of populations. It is especially useful in outlining a number of biological problems in need of further research.

*A theory stating that perceptual and cognitive abilities occur in expectable sequences and more or less on schedule.

The Far North—2000 Years of American Eskimo and Indian Art, **by Henry B. Collins, Frederica DeLaguna, Edmund Carpenter, and Peter Stone. Indiana University Press, Bloomington, Indiana, 1977, 289 pp., 15 color plates (including frontispiece), 366 black and white plates, maps, references (no index), slick paperback, $14.95, cloth, $22.50.**

One of the most impressive works on the art of the Alaska Native this reviewer has ever seen. Of high scholarly quality, beautifully and clearly illustrated, it is nonetheless organized along lines simple enough to be enjoyable to the amateur.

Narrative information identifies many cultural artifacts of unusual artistic merit and by describing the origin and use of items, it makes the artistic beauty of the objects even more obvious. The work is divided into sections dealing with Eskimos, Athabascan and Tlingit (including Haida) art. Eskimo art is discussed further in the context of archeological findings, and culture sequences over the last two thousand years.

It is easy to make comparisons between the art of these different groups thanks to this interesting organizing scheme, and the narrative helps. Marred only by a tendency toward romanticism in some of the narrative, it is nonetheless a book of wide general appeal and interest.

Arthur E. Hippler

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