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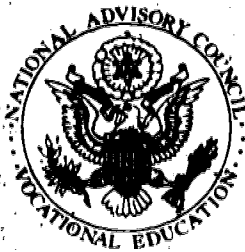
One- to six-page summaries are presented of fifty-six 1977 annual reports of the State Advisory Councils on Vocational Education. Most of the summaries, arranged in alphabetical order, address the effectiveness of vocational education programs, services, and activities in meeting the objectives as set forth in the state plan and recommend changes warranted by the evaluations. Some reports note council activities and special projects or studies commissioned by the councils. Preceding the summaries, two overview sections highlight the topics covered and the recommendations made in all the reports, focusing on the statutory requirements for evaluating the attainment of goals and for recommending changes based on the evaluation. Seven areas which are addressed most frequently in the recommendations are briefly discussed, including the following: funding, coordinating with CETA programs, women/sex equity, and guidance on counseling. (The 1976 report is available as ERIC document ED 149 057.) (EM)

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ED166548

# OVERVIEW



## 1977 REPORTS OF THE STATE ADVISORY COUNCILS ON VOCATIONAL EDUCATION

WASHINGTON D.C.  
NOVEMBER 1978

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

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In addition, the National Advisory Council is mandated to provide technical assistance and leadership to State Advisory Councils on Vocational Education, in order to assist them in carrying out their responsibilities.

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OVERVIEW

1977 REPORTS  
STATE ADVISORY COUNCILS ON VOCATIONAL EDUCATION

TABLE OF CONTENTS

	<u>PAGE</u>
Foreword . . . . .	1
I. Overview Analysis: Evaluation . . . . .	5
II. Overview Analysis: Recommendations . . . . .	17
III. State Summaries	
Alabama . . . . .	35
Alaska . . . . .	41
American Samoa . . . . .	43
Arizona . . . . .	46
Arkansas . . . . .	49
California . . . . .	53
Colorado . . . . .	55
Connecticut . . . . .	57
Delaware . . . . .	60
District of Columbia . . . . .	63
Florida . . . . .	66
Georgia . . . . .	70
Guam . . . . .	71
Hawaii . . . . .	74
Idaho . . . . .	78
Illinois . . . . .	81
Indiana . . . . .	85
Iowa . . . . .	88
Kansas . . . . .	91
Kentucky . . . . .	93
Louisiana . . . . .	96
Maine . . . . .	98
Maryland . . . . .	99
Massachusetts . . . . .	103
Michigan . . . . .	105
Minnesota . . . . .	109
Mississippi . . . . .	112
Missouri . . . . .	114
Montana . . . . .	118
Nebraska . . . . .	121
Nevada . . . . .	123

TABLE OF CONTENTS (cont.)

	<u>PAGE</u>
New Hampshire . . . . .	124
New Jersey . . . . .	127
New Mexico . . . . .	130
New York . . . . .	132
North Carolina . . . . .	135
North Dakota . . . . .	137
Ohio . . . . .	140
Oklahoma . . . . .	142
Oregon . . . . .	145
Pennsylvania . . . . .	148
Puerto Rico . . . . .	150
Rhode Island . . . . .	154
South Carolina . . . . .	159
South Dakota . . . . .	162
Tennessee . . . . .	164
Texas . . . . .	167
Trust Territory . . . . .	169
Utah . . . . .	171
Vermont . . . . .	174
Virgin Islands . . . . .	176
Virginia . . . . .	179
Washington . . . . .	182
West Virginia . . . . .	184
Wisconsin . . . . .	186
Wyoming . . . . .	189

## FOREWORD

The Federal legislation establishing National and State Advisory Councils on Vocational Education directs the State Councils to send copies of their annual evaluation reports to the U.S. Commissioner of Education and to the National Advisory Council.

The National Advisory Council prepares an annual analysis and summary of these reports with a three-fold purpose in mind. The composite which results gives the National Council significant information concerning the progress and problems of vocational education in the fifty-six States and territorial regions; the dissemination of the analysis and summary to the State Councils provides a convenient exchange of ideas; and the availability of the compilation to the general public is of value to those who wish to add some descriptive information to the statistical data available from the U.S. Bureau of Occupational and Adult Education.

John W. Thiele  
Chairman  
National Advisory Council  
on Vocational Education

*I. Overview Analysis  
Evaluation*

7.2

## OVERVIEW ANALYSIS: EVALUATION

Although the rules and regulations for the Education Amendments of 1976, P.L. 94-482 were not in effect during Fiscal 1977, several of the State annual evaluation reports covered, to some extent, each of the six specified topics which are listed below.

### 104.97 Annual Evaluation report\*

The State advisory council shall prepare and submit to the Commissioner and the National Advisory Council on Vocational Education, through the State board, within 90 days after the end of the fiscal year an annual evaluation report under the authority of 104.93(3). This report shall include:

(a) The results of the evaluation by the State advisory council of the effectiveness of programs, services, and activities carried out in the year under review in meeting the program goals set forth in the five-year State plan and the annual program plan;

(b) A review of the program evaluation results developed by the State under the authority of 104.401;

(c) A review of the analysis of the distribution of Federal funds within the State submitted by the State according to the annual program plan and the accountability report;

(d) Recommended changes in programs, services and activities as may be considered necessary by the State advisory council based on the results of its evaluation;

(e) Comments on the reports of the State Manpower Services Council; and

(f) Identification of the vocational education and employment and training needs of the State and the assessment of the extent to which vocational education, employment training, vocational rehabilitation, special education, and other programs assisted under this and related Acts represent a consistent, integrated, and coordinated approach to meeting such needs.

\*Federal Register, Vol. 42, No. 191 - Monday, October 3, 1977



Some other State Advisory Council reports met the mandatory requirements of the rules and regulations in effect for the Vocational Education Amendments of 1968, P.L. 90-576, which are as follows:

#### 102.23 Functions and responsibilities\*

The State advisory council shall --

(d) Prepare and submit through the State board to the Commissioner and to the National Advisory Council an annual evaluation report, accompanied by such additional comments of the State board as the State board deems appropriate, which (1) evaluates the effectiveness of vocational education programs, services, and activities carried out in the year under review in meeting the program objectives set forth in the long-range program plan and the annual program plan required by 102.23 and 102.34, and (2) recommends such changes as may be warranted by the evaluations.

\*Federal Register, Vol. 39, No. 143  
Wednesday, July 24, 1974

It will be noted that (d)(1) of the earlier regulations is practically identical with (a) of the regulations for P.L. 94-482 and that (d)(2) is practically identical with (d).

Some SACVEs gave specific reasons why they were not able to evaluate effectiveness in meeting goals and objectives of the five-year and annual State plan; some made specific recommendations concerning the State Plan and the information on outcomes necessary for the evaluation; some described Council participation in the formulation of the State plan; and some made no mention of the goals, objectives, or outcomes of the State plan in their annual evaluation report.

Table I gives a distribution in general categories of the responses of the SACVEs to the mandate on evaluation.

TABLE I

<u>Response Category</u>	<u>Number of SACVE Reports Making This Response</u>
1. Evaluated effectiveness in meeting State plan goals and objectives	9
2. Gave reasons why this evaluation could not be made	10
3. Made general evaluative statements	8
4. Made specific recommendations concerning State plan and information needed	12
5. Described Council activities related to State plan	10
6. Made no mention of State plan goals, objectives, or outcomes	7
Total	56

A number of Councils include in their annual report an account of their participation on the formulation of State plans; some make specific recommendations concerning the form or content of these plans. With the greater specificity of the 1976 legislation covering Council participation in the development of State plans, it is expected that the SACVEs will be able to be more effective in getting their ideas accepted. Since their active participation is also mandatory in the preparation of the annual State accountability report, many of the current difficulties encountered in the preparation of the eighth annual evaluation reports should disappear.

In the next section illustrative material is given from selected SACVE annual evaluation reports, showing different approaches to meeting the requirement that the report should evaluate the "effectiveness of vocational education programs, services, and activities carried out in the year under review in meeting the program objectives set forth in the long-range program plan and the annual program plan."

Illustrative material of categories of response

Category 1 (Evaluated effectiveness in meeting State plan goals and objectives)

Alabama

The Alabama SACVE report includes a section on Performance Analysis of State's Vocational Education Programs, 1977. Data for 12 State plan objectives are listed for a period of five years. Annual objectives, actual attainment, percent accomplishment, and annual percent change are tabulated as in the examples given below. Evaluative findings and recommendations relate to the data given. The following data are typical.

Objective: increase the number of academic and economic disadvantaged persons enrolled in secondary level preparatory vocational education programs.

Year	<u>Objective</u>		<u>Objective Accomplishment</u>	
	Annual	Actual Attainment	Annual	Percent Annual Change
1973	3,176	17,253	543.2	----
1974	26,103	19,707	75.5	14.2
1975	19,774	17,372	87.8	-13.4
1976	21,087	17,473	82.9	0.6
1977	18,000	15,701	87.2	-11.3

A performance analysis of the State's vocational education program indicates weaknesses in the planning process resulting in the establishment of program objectives inconsistent with resources available.

The State Board of Education should intensify and expand its efforts in interfacing the state and local planning process so as to establish realistic goals and objectives for the State's vocational education program for the most efficient utilization of resources.

## Arizona

The section of the report dealing with evaluation of effectiveness in meeting State plan goals and objectives includes: a listing of the 12 FY 1977 State plan goals; data for 7 of the 105 objectives which were only partially accomplished; and data for 20 objectives which were exceeded. Evaluative comments and recommendations relate to these outcomes. The following examples are taken from the report.

Goal (1): To provide opportunities for students, through local educational agencies, to develop the knowledge, skills, and work attitudes for successful careers.

### Objectives

- 1.1 Total secondary enrollment reached 98,922; 20,643 students or 17% short of the stated objective of 119,565.
- 1.11 376 students from 23 high schools participated in private proprietary educational institutions, which exceeded the objective by one high school and three students.

Goal (4): To improve the professional competency of personnel associated with vocational education.

### Objectives

- 4.3 Approximately 1,444 vocational education personnel were served through workshops and conferences. This more than doubly exceeded the objective of serving a minimum of 700.
- 4.9 Professional development services were provided to (77) Agriculture; (686) Home Economics; (1,952) Office Education; (100 plus) Distributive Education; (402) Technical and Industrial; and (77) Health Occupations teachers. Thus, the objective of service to at least 2,500 vocational education personnel were exceeded by more than 700.

### Evaluative comments:

The Advisory Council believes that although technical accomplishment was attained in regard to the objectives of Goal 9 (improvement of placement and followup of vocational education students),

the objectives under this goal were not sufficient to result in much improvement in the placement of Vocational Education completers consistently recommended by the Council.

However, it is noted that the Annual and 5-Year Guidance Plan in the State Plan for Vocational Education includes "placement" as a priority, and that placement is to be considered as an integral part of total guidance services.

North Dakota

The eighth annual evaluation report of the North Dakota SACVE was prepared by five Council assessment committees, two of which reviewed and analyzed the goals and objectives of the State Plan and evaluated the degree of success in their attainment. The following data illustrate the method used.

Goal (1): Provide vocational education programs for secondary-level students which are realistic in terms of actual and anticipated labor market demands and student interests and aptitudes.

Objectives	1976 Actual	1977 Outcome Sought	1977 Actual	Percent Attainment
1. To increase the total number of secondary students enrolled in regular vocational education programs.	16,192*	17,393	16,524*	95%
a. Comprehensive High School	14,540	15,617	14,771	95%
b. Multi-District Vocational Center	1,652	1,776	1,753	99%
				*Consumer & Homemaking excluded
2. To provide for an increase in the number of secondary students completing vocational programs who are available for employment and placed in the field trained or related.				
a. Completions	4,499	4,723	4,601	97%
b. Available for Employment	1,895	1,985	1,986	100%
c. Placed in Field Trained or Related	1,077	1,322	976	74%

Evaluative comments:

The outcome sought and the degree of attainment have been satisfactory.

The reduced enrollment, particularly distributive education and vocational agriculture, is due in a large measure to lack of staff, facilities and/or relocation of programs.

The vocational education needs of students in small schools remain a challenge. Progress has been made in the establishment of mobile units which are serving some of the small schools.

Category 2 (Gave reasons why this evaluation could not be made)

The following statements are taken from SACVE reports for FY 1977.

- The Council recognizes that information is not available that is necessary for fulfilling its mandate for vocational education evaluation.
- Data relating to several goals and objectives were not available. Many of the outcomes projected under budgeting were written in such a manner as to preclude measurement of accomplishment.
- The Council has been critical of the State Plan because it is a compliance document required by the Federal Government.
- Timely and accurate data concerning achievement of the objectives of the Five-Year and Annual State Plan have not been produced by the Department of Education. In the past basic data has been unavailable, unreliable, or in a form that makes it useless for evaluation.
- A budget figure has been attached to the various objectives in the State Plan. However, no data are available on the actual expenditures or reimbursements. It is therefore impossible to assess the achieving or non-achieving of the objectives. The lack of timely and accurate data continues to plague the planning and evaluation process in vocational education.
- The process of evaluating the rate of achievement of goals and objectives of the State Plan continues to be a difficult and frustrating responsibility. The format utilized in stating the annual goals, objectives, and

outcomes does not easily lend itself to comparative analysis with a means to reach definitive conclusions as to rates of accomplishment or to determine whether goals and objectives have been achieved at all.

- The statistical data outlined in the tables does not, in the opinion of the Council, appropriately or adequately measure the effectiveness of vocational education programs in the State. Rather it would tend to evaluate the effectiveness of the Division of Vocational Education in estimating its budget requirements and the adequacy of its estimates in the areas of enrollment. It is the opinion of the Council that the absence of qualitative data makes it impossible to arrive at any valid conclusion concerning the effectiveness of vocational education in the State as a whole.

### Category 3 (Made general evaluative statements)

The following statements are taken from SACVE eighth annual evaluation reports not represented in Category 1.

- On-site visitation of vocational education programs and other information show the effectiveness of programs in meeting the goals set forth in the State plan.
- There was over-all progress towards achievement of goals as stated in the State plan.
- Where data were available it was found that a good deal of progress was made during FY 77 in meeting the State's long-range goals, priorities, and objectives.

### Discussion of the federal regulations on the SACVE annual evaluation report

While the regulations governing the SACVE annual evaluation report under P.L. 94-482 are more explicit and in greater detail, the essential requirement of evaluation in terms of the attainment of State plan goals and objectives remains the same as in the 1968 legislation.

Many SACVEs continue to experience difficulty in meeting this requirement. Some of these difficulties have their origin in the format of the State plan. Unless the State plan includes goals and objectives for which identifiable outcomes can be projected; and unless specific programs, activities, services, and budget

allocations are indicated for attaining these outcomes evaluation will not be possible. Under the new regulations requiring SACVE participation in at least four meetings on the development and adoption of the State plan the SACVE representative may be able to exert more direct influence (42FR53835). In addition, the more detailed regulations governing the Commissioners's approval of State plans may lend to improvement in their format (42FR53838).

Another problem area encountered by the Councils relates to the availability of information concerning the actual outcomes with respect to the goals and objectives of the State plan. Since SACVE participation is required in at least three meetings devoted to the formulating of the accountability report which contains this information (42FR53837, 42FR53838) it would seem that this essential condition for evaluation would be met. There remain, however, inevitable difficulties arising from timing, as illustrated in the following regulations.

- The annual program plan for fiscal year 1978 is due in the appropriate Regional Office by July 1, 1977 (42FR53837).
- The annual accountability report for fiscal year 1978 is due in the appropriate HEW Regional Office by July 1, 1979 (42FR53837).
- The SACVE annual evaluation report is due 90 days after the end of the fiscal year. For fiscal year 1978, which ends September 30, 1978, this due date is December 30, 1978 (42FR53833).

It will be impossible for the Councils to include any consideration of the FY 1978 accountability reports in their FY 1978 annual evaluation reports. And it will be impossible for them to perform any evaluative functions unless they have access to other data on outcomes.

A possible solution would be to set the due date for the ninth annual evaluation reports at a later time such as October 1, 1979. This would allow utilization of accountability data. The reports received by NACVE for fiscal year 1977 should have reached our office by December 30, 1977. The actual time of arrival extended from June 1977 to August 1978 with the distribution shown in Table II.



TABLE II

SACVE annual reports for FY 1977

<u>Date received</u>	<u>Number of reports</u>
June 1977	1
December 1977	3
January 1978	22
February 1978	9
March 1978	7
April 1978	7
May 1978	3
June 1978	2
August 1978	<u>2</u>
Total	56

It will be remembered that Table I shows that only 9 of the SACVE annual evaluation reports actually evaluated effectiveness in meeting State plan goals and objectives. Absence or inadequacy of data on outcomes undoubtedly was largely responsible. Setting a later due date for the Council report should prove helpful.

There will still remain, however, the inevitable difficulties inherent in any state-wide planning and evaluating process for educational delivery systems which extend over such a wide range of local autonomy. Traditionally, American education is a grass-roots operation. State-wide goals and objectives are not necessarily given high priority by LEAs. This is at once one of the greatest strengths of American education and one of the greatest obstacles in the way of bringing it under uniform regulations. The recent federal legislation has, if anything, strengthened this dominant characteristic by its emphasis on local advisory councils (42FR53833).

## OVERVIEW ANALYSIS: RECOMMENDATIONS

A second mandated function of the annual evaluation report as stated in the 1968 Amendments is to recommend "such changes as may be warranted by the evaluation." This requirement is repeated in the 1976 legislation as stated in the Federal Register, #104.97(d):

Recommended changes in programs, services and activities as may be considered necessary by the State advisory council based on the results of this evaluation.

Although many of the SACVEs were not able to make the evaluation called for in terms of the effectiveness of vocational education programs, services, and activities in meeting the objectives set forth in the State plan, all included recommendations in their annual reports.

Table III gives the distribution of topics covered in these recommendations. This distribution shows continued concern in many of the areas cited in the annual reports for FY 1976, with some changes in emphasis. The number of recommendations increased notably in the following: funding from 34 to 43; coordination with CETA programs from 9 to 22; women/sex equity from 16 to 23; guidance and counseling from 19 to 24; improved access to vocational education programs from 18 to 25.

TABLE III

Topical distribution according to frequency of citation

Topics cited in annual SACVE reports	Number of SACVE Reports making reference to these topics
Funding	43 (34)*
Job Placement	30 (28)
Professional Development	30 (36)
Market and Manpower Data	29 (34)
Disadvantaged and Handicapped	27 (35)
Local Advisory Councils	26 (23)
Access to Vocational Education	25 (18)
Career Education	24 (24)
Guidance and Counseling	24 (19)
Women/Sex Equity	23 (16)
Coordination with CETA	22 (9)
Program Relevance	21 (8)
Public Image of Vocational Education	21 (18)
Articulation/Duplication	18 (16)
Relations with Department of Education	16 (16)
Youth Organizations	12 (14)
Private Trade Schools	7 (8)
Other	61

\* Numbers in parentheses indicate frequency of citation reported in FY 1976 Overview.

Funding

Comments and recommendations related to funding covered the following: general need for increased funding; funding needs for specific programs; improvement in budgetary and funding procedures.

Illustrative comments are given to show the range of interest:

The State Board of Education should seek adequate funding from the State legislature to finance current assessed needs for part-time adult education programs. (Alabama)

SACVE recommends that necessary funds be allocated for the development and implementation of a single, state-wide vocational education evaluation system. (California)

Statewide evaluation procedures should make use of cost-benefit and cost-effectiveness procedures. Questions still exist as to what criteria have been used in distribution of federal vocational education funds to school districts, community colleges, universities, and other agencies. (Florida)

A SACVE sponsored Comprehensive High School Assessment Study shows that the vocational branches of the comprehensive high school system are not adequately funded. (Georgia)

The Council recommends adoption and implementation of a new secondary vocational funding formula in view of the enrollment data that show that 60% of high school students do not go to college. Also, area vocational education schools should have a continuing emergency State training fund to train students for expanding business and industry. (Idaho)

The State Board of Education should seek legislation and gubernatorial approval of a categorical State appropriation for vocational education based on a foundation level of support. (Illinois)

The State Board for Vocational Education should establish more specific and definitive time frames for reporting on expenditures of funds for State plan activities. This information should be incorporated in the annual program plan. (Maryland)

The Council recommends legislation for state funding of job placement services and that the state-aid reimbursement plan for secondary vocational education be on an "added cost" basis so as to provide an incentive to increase enrollments and initiate new programs. (Michigan)

It is noted that the present State plan does not give the funding information needed for the review of analysis required by the 1976 federal legislation. (Minnesota)

It is recommended that a more intensive review of the monetary procedures and practices used in vocational education be given attention in all evaluations conducted by the State Department of Education. (Missouri)

The Council recommends that an equitable formula for fund distribution should reflect the differences in cost-of-living

in various areas of the State. (New York)

There is need of a funding formula to provide for continuing second year support for two-year programs. (Ohio)

Funding should be synchronized with planning to assure availability of funds at start of program. (Pennsylvania)

There is a need to increase funding for adult education which arises from mobility of the labor force, change in occupation, and change in technology. (South Dakota)

It is recommended that the State Board of Education and the Department of Public Instruction study methods of funding to determine if there are alternative ways to the project method of dispensing funds which would provide for the same accountability and impact while improving cost effectiveness and equal opportunity in obtaining funds. (Wisconsin)

#### Coordination with CETA Programs

Almost all SACVE reports mentioned CETA programs. The following are illustrative of specific information or recommendations.

The Council report gives a summary of CETA accomplishments, program scope and future needs. Reference is made to CETA tribal funding. (Arizona)

It is recommended that the State Board of Education take an active role in communication with local districts and local CETA prime sponsors in the area of cooperative education. (Colorado)

A problem of timing is noted in developing CETA plans and coordinating activities with other agencies. (Delaware)

The Council executive director serves as chairman of a special task force on CETA. (Guam)

Area Vocational Technical schools in FY 1977 developed 307 contracts which served 9,180 CETA clients. There were an additional 191 contracts in Chicago serving 2,000 clients. (Illinois)

The Council comments on the annual report (1975-76) of the

Indiana Office of Manpower Development. There is need for improvement in communication, specifically more detail on numbers of persons being served in vocational education by CETA and results in terms of job placement. (Indiana)

It is recommended that the Department of Education consider creation of a special project group to establish improved services and programs for linguistic minority groups using PL 94-482 funds for bilingual programs, CETA, and Youth Education and Training. (Massachusetts)

It is recommended that the State Board of Education:

- initiate intra- and inter-agency action for coordination of the State plan for vocational education with the CETA plan;

- include a summary of the CETA 5% vocational education plan as an appendix to the State plan for vocational education;

- provide opportunity for SACVE and for vocational-technical service to comment on the CETA 5% vocational education plan during its development. (Michigan)

The present relationship between vocational education and CETA is at an all-time high. There are no basic differences to be resolved. There is no deviation from policy for utilization of 5% funds. (Nebraska)

It is recommended that the Council continue to be involved with any activity of the Governor's task force relating to the coordinating of manpower training services and that a State-level body be established with authority to resolve issues and make policy regarding coordination and delivery of manpower training services. (New Jersey)

SACVE recommends that the Division of Vocational Education assist in acquainting LEAs with the opportunities available under CETA. (New Mexico)

The entire report is a recommendation for State-wide policy and planning based on coordination of input from all constituent groups affecting or affected by vocational education. (North Carolina)

Council recommends that the Board of Vocational Technical Education take initiative in supporting cooperative working arrangements with CETA prime sponsors and manpower councils to use existing agencies and facilities for vocational training needs. (Pennsylvania)

SACVE reviewed the annual report of the Tennessee Manpower Services Council and included in its annual report a breakdown of the 5% CETA funds for FY 1976 by prime sponsor participants served, and expenditures. (Tennessee)

Council recommends coordination of vocational education programs for dropouts with CETA. (Trust Territories)

A conference was provided through Manpower Training Services for inservice training of 125 directors, supervisors, counselors, and instructors of CETA programs. (Virginia)

#### Women/Sex Equity

With the enactment of Title IX of P.L. 92-318, prohibition of sex discrimination in institutions of vocational education became effective. P.L. 94-482 includes requirements in State plan provisions for policies and procedures assuring equal access to vocational education programs by students of both sexes and action taken to eliminate any existing sex stereotyping. The SACVE eighth annual reports reflect this new emphasis in the increase of recommendations or evaluative comments on Women and Sex Equity. Illustrative statements follow:

The State Department of Education should develop an affirmative action program to reduce sex stereotyping in vocational education programs. (Alabama)

Research is needed on procedures for elimination of sex stereotyping. Present data are inadequate. (American Samoa)

A full-time specialist has been appointed for the promotion of sex equity in vocational education and a State-wide task force is at work. There are inservice programs in this area for teachers and counselors. (Arizona)

SACVE recommends that the State Department of Education: employ women counselors; place the full-time person assigned to identify and eliminate sex bias at a decision-making administrative level; and check inequities in certification requirements and salaries for sex bias. (Delaware)

The State plan should describe specific activities for compliance with Title IX. Course data by sex should be given covering applications, enrollments, completions, and job placements. (District of Columbia)

The State Board of Education should continue its support of affirmative action hiring practices for the elimination of sex bias. (Illinois)

An increase in female enrollment is noted in vocational agriculture and in technical/industrial programs. (Louisiana)

The membership of the State Advisory Council on Vocational Education is now 25 percent women. At the annual public meeting testimony was received from the Maryland Commission for Women and from the county commissions for women for Anne Arundel and Charles counties. Among specific actions taken was the decision to monitor the elimination of sex-role stereotyping. (Maryland)

Council recommends that the State plan detail what action the Board of Education intends to initiate for the elimination of sex bias and sex stereotyping and that this action be related to specific resources (federal, state, and local) which are to be used. (Massachusetts)

Improved occupational information such as MOIS should be provided to assist women to overcome sex bias and stereotyping. (Michigan)

Stronger action is needed to meet the requirements of the new emphasis on sex equity. There should be adequate staff positions and supportive services, and elimination of all discriminatory material. (Nebraska)

The State Board of Education and the Department of Vocational Education have initiated a comprehensive strategy for eliminating sex bias in non-traditional occupations for both men and women. (New Mexico)

SACVE has published a report on Occupational Status of Women in New York. It covers: work force and occupational education; what has been accomplished in the last few years; what remains to be accomplished; plans in accordance with P.L. 94-482. (New York)

The Division of Educational Equity Services lists nine major objectives taken from the five-year and annual State



plans. A student status report was made for FY 1977. (Oklahoma)

Each educational institution should submit an annual report to the Department of Education indicating the steps taken to eliminate bias. (Pennsylvania)

Council recommends that the State Board of Vocational Education develop and implement a comprehensive program to eliminate sex bias and sex stereotyping indicating specific activities. (South Dakota)

Council recommends: admission of both sexes to all programs within the limitations of classroom space; counseling and curricular adjustments necessary for wider occupational choices for women. (Trust Territory)

SACVE believes that it is in our national interest both economically and socially to end occupational sex role stereotyping, discrimination, and bias. We believe that sex fairness is a fundamental human right and that efforts to end occupational segregation are in keeping with our concept of the American tradition. (Virginia)

From 1976 to 1977 there were gains in enrollment of females and males in non-traditional occupations in all areas except technical education. (West Virginia)

The State Board and the Department of Public Instruction each employ consultants in sex role stereotyping as specified by the State Plan for Vocational Education. (Wisconsin)

#### Guidance and Counseling

The rules and regulations for guidance and counseling funded under P.L. 94-482 are even more detailed than those for earlier federal legislation. The SACVE annual evaluation reports, in their comments and recommendations, indicate continuation of many of the inadequacies in counseling and guidance programs noted in previous reports. There are, however, some significant commendations. The following statements are illustrative:

The State Department of Education should develop a comprehensive listing of professional competencies needed by counselors and encourage State standards for assignment of competencies expressed as duties and responsibilities to appropriate professional personnel in schools. (Alabama)

There is very little emphasis on vocational guidance and counseling especially at the secondary level. There are no rigid certification requirements. Counselors have limited backgrounds in career education and occupational experience. Their time is taken up with discipline problems. (American Samoa)

The emphases stressed in the annual evaluation report include: improving communications among counselors and vocational educators; inservice field assistance to LEAs in placement and followup services; coordinating delivery of guidance and counseling functions between general education and vocational education. (Arizona)

Career guidance, placement, and followup are inadequate in the State education system and nonexistent in the Department of Corrections. The program is low in priority, misunderstood, and under-financed. More qualified women counselors should be employed. Legislation is needed to require one full-time counselor for every 500 students; in correctional institutions one for every 250. (Delaware)

The Widening Horizons program for junior high school students is to be included under the guidance and counseling section of the Child and Youth Study Branch of educational programs and services. One fiscal 1977 emphasis has been on non-traditional careers for women. (District of Columbia)

The Council recommends the provision of high-quality guidance and counseling services for the economically disadvantaged. (Florida)

NAEAF commends the State Board of Education on the continued collection of data and publication of the Iowa Guidance Survey. (Iowa)

It is recommended that the State Board of Education examine its capacity to provide leadership in the vocational guidance area, particularly in light of the new dimensions established in recent federal legislation. (Kansas)

Recommendations include: that guidance counselors and teachers in the elementary, junior high, and senior high be oriented to the world of work; that guidance counselors at all levels be released from non-counseling duties and excessive paperwork; that each area vocational education center have vocational guidance services available on a regular basis, and that craft committees be involved in placement and followup. (Kentucky)

Council recommends that the State Board ensure that all vocational schools have adequate guidance and counseling services with trained personnel and that a State workshop on vocational education be developed for guidance counselors. (Louisiana)

There should be top priority for utilizing secondary and postsecondary federal funds for counseling. There is need for a statewide plan for implementing career guidance and counseling with support staff. There should be special attention given to counseling for sex equity, rehabilitation, juvenile offenders and more emphasis on occupational orientation. (Nebraska)

4 Counseling services need to be expanded in rural high schools. About 64 percent of the students in 12 rural schools have never talked to a counselor about career plans. (Nevada)

It is recommended that: the State set more specific policy directing the activities of counselors towards working with the students' career objectives; that the student-counselor ratio be reduced to a realistic value; that steps be taken to monitor guidance and counseling services to ascertain the time actually devoted to counseling. (New Mexico)

At a 1977 public meeting the Federation of Teachers appealed for stronger measures to provide vocational guidance counselors. Teachers are bearing most of the burden now. (Ohio)

A Mobile Counseling Unit program has been effective in seven counties of the southeastern part of the state. (Oklahoma)

● Certification requirements for vocational guidance counselors should include work experience other than in education, or a specially designed intensive internship study of the offerings and employment opportunities in the vocational-technical area at secondary and postsecondary levels. (South Dakota)

Council reports that five one-day seminars on employment counseling and placement services reached 367 counselors, supervisors, and placement coordinators located in 123 school divisions. Four career guidance and counseling workshops at universities involved one-third of the public school counselors. (Virginia)

There were vocational guidance recruitment projects in five counties in FY 1977. (West Virginia)

## Access -- Program Relevance

High priority is recommended for technical education especially for programs in electronics, energy technology, and marine technology. (Arkansas)

Curriculum design should include a process for the elimination of any outdated programs or services. (Connecticut)

Council reports that LEAs administered training for 35 new or expanding Texas industries at a cost of \$505,184.97. (Texas)

Council recommends that the area of office occupations adapt and supply existing syllabi to meet the needs of a growing number of technically oriented industries in the State. (New Hampshire)

The Council recommends that the Board of Regents support measures to implement the goal of opportunity for 60% of the State's public senior high school students to enroll in vocational education programs leading to employment by 1980. (Rhode Island)

## Professional Development

We recommend that the Board of Vocational Education endorse off-island training for teachers with special needs such as teaching special education students. (Virgin Islands)

Council recommends that the State Department of Education recognize that there is a shortage of professional personnel in vocational education programs and develop and implement recruitment programs to obtain qualified instructors. (Wyoming)

The Council recommends that the superintendent of public instruction and the State Board of Education conduct in cooperation with the Oregon State System of Higher Education, a study of vocational teachers inservice training that: (1) describes the current program; (2) describes the content and strategies desired by practitioners; and (3) describes necessary and sufficient procedures for coordinated delivery of inservice training. (Oregon)

## Other Concerns

The last entry in Table III includes a variety of concerns represented in the recommendations and evaluative statements of the annual reports. Some of these reflect problems unique to a given geographical area or population. Others show increased interest in programs emphasized in the 1976 legislation. The following statements taken from the eighth annual evaluation reports are illustrative:

### Energy Education

Council recommends special additional funding and other resources needed to be able to plan wisely for the impact of the changing energy picture on the world of work and on vocational education. (Ohio)

An evaluation by 3,500 laymen who were members of regional and craft committees included recommendations for mining technology programs. (Kentucky)

One school visited by Council was providing practical instruction in solar heating in conjunction with heating and air conditioning programs. (South Carolina)

### Bilingual Vocational Education

Council recommends development of bilingual curriculum materials in business and office, clerical, and automotive programs. (Arizona)

The State Board of Education should strengthen existing efforts to meet the needs, interests, and abilities of non-English speaking students. (Illinois)

It is recommended that the Division of Vocational Education assess the need to develop bilingual vocational education programs; provide assistance to LEAs to apply for funds for bilingual programs; and develop a long-range plan to meet the needs of students of limited English-speaking ability. (New Mexico)

### Correctional Institutions

SACVE recommends the coordination of vocational education with vocational rehabilitation for the development and funding of programs in correctional institutions. These programs should include on-the-job training and should emphasize the coordination of general education with vocational training. (Colorado)

Council recommends that vocational education programs in correctional institutions qualify for participation in the distribution of State funds. (Indiana)

A special study should be made of the need for vocational education programs in the State prison system. (Arkansas)

Recommendations for vocational education programs in correctional institutions in the State include: incorporation of basic skills as an integral part of vocational education; adoption of the cluster concept for new and existing vocational education programs; strengthening of the incentive system; an effective vocational counseling and placement system; cooperative integration of special education, vocational rehabilitation, adult instruction, and vocational-technical education to fund upgrading of educational environment (physical conditions); more programs to prepare for work associated with home setting upon release. (Maryland)

There are vocational course offerings at five correctional institutions in the State. Council recommends: counseling to determine needs; individual programs integrating academic and vocational training; ongoing evaluation of job placement after release; utilization of existing education agencies wherever possible. (Nebraska)

#### Utilization of Council Members

Council should seek to enhance the effectiveness of its individual members. At present there seems to be only an average level of utilization of the perceptions of individual members. (Alaska)

Council has received orientation on initial developmental stages of process for evaluating secondary vocational education and information about the already completed process for evaluating postsecondary. SACVE expects to be involved actively during the coming year and has engaged in self-improvement activities. (Minnesota)

#### Dropouts

Council recommends an investigation of the reasons for the high incidence of dropouts at the postsecondary level and the use of the results to improve realistic planning. (Puerto Rico)

### Cooperative Education

Council recommends an evaluation of the reasons for the declining enrollment in cooperative education programs; the development of policies and regulations for LEAs in this area; and the provision of teacher education materials for coordinators. (North Dakota)

### Delivery System and Administration

The Council recommends local autonomy for regional vocational-technical schools and agricultural centers to meet mutually approved goals in an overall plan. (Connecticut)

LEAs who do not have a vocational center should designate a staff member to coordinate program planning and evaluation and be responsible for all reporting to the Department of Vocational-Technical Education. (Mississippi)

School board and administrators need assistance from BPE, OPI, and SACVE on ways of making the best use of LEAs. (Montana)

The State Board of Vocational Education should consider vocational education delivery systems other than community-based programs for Hawaii State prisons; it should support legislation for short-term vocational education programs for Hawaii Youth Correctional Facilities. (Hawaii)

### Target Populations

Council recommends the development and implementation of a full-range affirmative action plan through philosophy and policy statements and through the adoption of seven specified State plan goals concerning racial minority groups, females, and physically or mentally handicapped students. (Washington)

### Joint Discussion of Issues

The Council recommends the development by MACVE of a series of position papers devoted to: the governance of vocational education in Maine; the importance of job placement in evaluating the success of vocational programs; the career awareness needs of students; and how to serve effectively the special needs groups through vocational education. These position papers prepared by the Council would be discussed jointly with the State Board of Education. (Maine)

### Career Education

The career education paper adopted by the State Board of Education should be fully implemented. It is the opinion of the Council that vocational education is a major part of career education and that most of the job opportunities are in the area for which vocational education prepares students. (Utah)

### Equipment

The Council recommends that the State Board of Education: effect the development of a strong preventive maintenance program for vocational equipment; design and implement an amortization system for the annual purchase of new and replacement equipment; and place a high priority on allocation of State funds for equipment by the amortization system. (Vermont)



### ***III. State Summaries***

## ALABAMA

The Alabama Advisory Council on Vocational Education, in its eighth annual evaluation report, gives a performance analysis of the State's vocational education programs for Fiscal 1977. This analysis is based on data from the State plans and from reports submitted annually to the U.S. Office of Education. Annual objectives over a five-year span are compared with actual attainment for 12 specific objectives. Nine are related to various categories of student enrollment and three to funding in the following programs: improvement of research, exemplary and curriculum projects; teacher education and other special personnel training activities; and personnel units and related supportive services for vocational guidance and counseling.

The report includes also an inventory by classification code of vocational education and training programs in Alabama in 1977. Information is given on numbers of programs at each educational level; numbers of enrollments and of completions in each program; and numbers of annual job openings. There is a staffing analysis by general program area and level of education and an analysis of allocation and actual expenditure of funds for vocational education and training during FY 1977.

Council findings include the following:

- At least 695 public and private institutions and agencies offered 711 vocational programs in Alabama during 1977.
- The vocational education enrollment during 1977 was 270,529 as contrasted to 203,717 in 1973. The average increase in persons enrolled in the State's program for this period was 6.6 percent annually.
- A performance analysis of the State's vocational education program indicates weaknesses in the planning process resulting in the establishment of program objectives inconsistent with resources available.
- An analysis of the vocational program information available appears to indicate that the current enrollment and persons completing programs annually may exceed the number of job openings for some vocational programs as projected by the Alabama Department of Industrial Relations.
- Full-time student enrollment in vocational education increased by 4 percent in 1977 over 1976.
- Part-time vocational adult enrollment decreased by 21

percent in 1977 over 1976. There appears to be an administrative inconsistency as reflected by the increase in part-time adult vocational instructor units and a decrease in enrollment for the period. Fifty-six percent of the local boards conducted evening classes in vocational education.

- An analysis of the annual funding for 1977 reflects significant differences in the amounts proposed for expenditures in the State plan and funds actually expended by programs.
- Male and female enrollment in vocational education programs continues to compare favorably with the male/female ratio in grades 7-12. However, when occupational programs alone are considered, the ratio weighs heavily in favor of males, as continues to be the case in most program areas.
- An analysis of the employment of students in fields related to vocational education received indicates a general decline for most secondary vocational programs.
- Data supplied do not provide adequate information to explain existing differences (e.g., exploratory programs -- attainment greater than goal 1976-77).

The statements listed below are from the comments of the Alabama SACVE on the report of the State Manpower Services Council:

Each year several hundred youths either drop out of the State's schools before graduating or graduate and enter the work force lacking job skills. Some of these dropouts and graduates find jobs, but many of them flow into the pool of the unemployed and the underemployed.

The annual average public cost for manpower programs far exceeds the per-student cost of other similar educational programs in the State.

The cost is understandable since manpower program expenditures include enrollee allowances and other supportive services which are not normally included in the expenditures of other educational programs.

The point is that most of the persons enrolled in manpower programs either did not have adequate vocational education programs available to them in secondary schools or did not

take advantage of the other opportunities available to them in the State's secondary schools.

The continued allocation of dollars to the problem of the pool rather than to the problem of the flow is wasteful and inefficient. The state and nation will never reduce its pool of unemployed and underemployed persons until greater attention is given to reducing the flow through efficient and coordinated vocational education and training programs.

Vocational education and training is one of the most urgent needs facing the state today. We have seen great progress in this area in recent years, but the full potential is yet to be realized.

Reciprocal comments from the Alabama State Manpower Services Council on the SACVE report include the following:

The State Manpower Services Council is required to comment publicly on the annual evaluation report of the Alabama Advisory Council on Vocational Education, and to include comments received from the Advisory Council concerning the State Manpower Services Council report.

The 1977 annual evaluation report reflects the status of vocational education in Alabama during the past fiscal year. Adequate documentation of the success of vocational educators in Alabama is coupled with an examination of areas requiring improvement. The annual evaluation report appears to be a balanced document useful to practitioners in the manpower and vocational education fields:

Substantial changes in planning format have occurred since the preparation of the FY-77 vocational education plan. The vocational education amendments which require implementation for FY 1978 have strengthened the role of advisory councils at the local level and have urged renewed involvement of the manpower community.

Therefore, a more intensive examination of the vocational education planning and implementation effort will become necessary during the present work year. The State Manpower Services Council has an important role in representing the concerns and views of the prime sponsors and other agencies in the manpower community. The progress made during the past year will become more pronounced during the five year planning cycle of the incoming vocational education plan. This annual evaluation report will

deal primarily with the present status of vocational education as a basis for further improvement.

A significant finding of the Alabama Advisory Council on Vocational Education was that Alabama has one of the better vocational education programs with its network of postsecondary institutions and area vocational centers and its recent thrust to provide comprehensive vocational offerings in high school. They also point out that such a comprehensive system lends itself to duplication in learning experiences and overlap of curricula at all levels. They suggest that the improvement of curriculum articulation practices should be a top priority for the State's vocational education system.

It will be a goal of the State Manpower Services Council to represent to the vocational education community concerns of the broader employment and training area.

Another area of concern amplified by the annual evaluation report reflects the possibility of further coordination in data comparison. Hopefully, such concerns will partially be met through implementation of the State Occupational Information Coordinating Committee.

Specifically, the evaluation report indicated that, although the State Department of Education has adequate program application procedures, the basis on which vocational education courses are added to the curriculum is not always clear. It appears, they report, that little consideration is given by the State Department of Education to manpower demand and supply in the approval of local program applications. This, they suggest, could be partially alleviated by improving the manpower data available to local boards and making better use of that which is available. The selection of vocational programs, they add, is probably based on the joint function of the availability of finances and the interaction between the state-level specialized instructional personnel and local planners rather than realistic manpower demand.

In formulating recommendations for the FY 1977 report, the SACVE indicates that similar or related recommendations have been proposed in former years.

## Recommendations

- The State Board of Education, in cooperation with the State Occupational Information Coordinating Committee, should design, develop and implement a functional manpower demand and supply information system in coordination with the State Manpower Services Council and the State Advisory Council on Vocational Education (1971, 1972, 1976)\*
- The State Board of Education should intensify and expand its efforts in interfacing the state and local planning process so as to establish realistic goals and objectives for the State's vocational education program for the most efficient utilization of resources. (1972)
- The State Board of Education should establish functional program approval and evaluation procedures at the secondary, postsecondary and adult levels based on job opportunities, student interest and aptitude, program cost, and job factors. (1973)
- The State Board of Education should initiate contracts with eligible contractees in response to preprescribed project specifications to insure maximum and efficient utilization of program improvement funds. (1972)
- The State Board of Education should seek adequate funding from the State Legislature to finance current assessed needs for part-time adult vocational education programs. (1971, 1976)
- The State Department of Education should include in its state-wide testing program a standardized vocational interest inventory. The inventory should provide the capability of converting or associating vocational interest areas to vocational instructional programs and occupational titles. (1973)
- The State Department of Education should develop a comprehensive listing of professional competencies needed by counselors and encourage, through leadership activity, state standards for the assignment of competencies, expressed as duties and responsibilities, to the appropriate

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\*Year(s) of similar or related recommendations.

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professional personnel employed in the local schools.  
(1976)

- The State Department of Education should study the declining trend in the employment of students in fields related to the vocational education received. (1971)
- The State Department of Education should make an analysis of the articulation between secondary and postsecondary vocational education programs. (1973)
- The State Department of Education should develop an affirmative action program to reduce sex stereotyping in vocational education programs. (1972)
- The State Department of Education should within a reasonable time, provide a written response to each of these recommendations to the Alabama Advisory Council on Vocational Education.

## ALASKA

The Alaska State Advisory Council on Vocational and Career Education submitted as its eighth annual evaluation report an Evaluation of the Effectiveness of the State Advisory Council on Vocational Education in Terms of Communications and Status of Recommendations Made in Previous Evaluations.

Using a methodology involving personal interviews and questionnaires, the study resulted in the following recommendations.

- The Council should clarify its direction in those areas not dependent on State Board direction.
- The Council should develop greater rapport with the State Board of Education and the Department of Education through increased informal communication and clearer lines of formal communications.
- The Council should seek to enhance the effectiveness of its individual members.
- The Council should emphasize long-range planning.
- The Council should focus its attention on those parts of the vocational education network most receptive and ready to cooperate in improving vocational education.
- The Council should reinforce program strengths.
- The Council should continue to encourage the formation of local advisory councils and to assist in increasing their effectiveness.
- The Council should de-emphasize statistical renderings of future evaluations.
- The Council should avoid over-fragmentation of recommendations.
- The Council should obtain a labor union member.
- The Council should consider the hiring of an executive director only after clarifying its direction and improving its relationship with the Department of Education.
- The Council should direct its secretary to maintain close working ties with Department of Education staff.



The report gives a brief rationale for each recommendation and includes a special tabulation which includes summary information on each of the annual evaluation reports from FY 1973 through FY 1977.

## AMERICAN SAMOA

The eighth annual evaluation report of the American Samoa Advisory Council on Vocational Education begins with an analysis of the Education Amendments of 1976, P.L. 94-482, and provides a commentary on increased emphasis on planning and the expansion of the role of the State Advisory Council.

A statement from the Council Chairman points out inadequacies in vocational education and their relation to inadequacies in academic education and in all education, generally. Attention is directed specifically to academic preparation of the vocational education student; to proper and sufficient counseling and guidance; to the mastery of basic employability skills; to the development of marketable, saleable skills relevant to labor needs; and to the assimilation into the American world of work of American Samoans who are for the most part economically and socially disadvantaged.

A brief description is given of the vocational education delivery system and a tabulation of State plan goals with objectives for FY 1977. Where data were available, the actual outcomes and percent achievement are also given. An analysis follows with a discussion of problems inherent in the State plan:

- 1) The Council finds a lack of continuity of goals and objectives when the long-range goals of FY 77 are compared with those of FY 76. Changing or elimination of goal statements destroys continuity of effort in evaluation and program planning.
- 2) A great concern of the Council is the insufficiency of time and effort devoted to vocational education planning. The State plan was developed very late in the year and without the utilization of reliable, current data.
- 3) The Council believes that career education is not properly addressed in the State plan. At present vocational education programs attract a relatively small number of enrollees. It becomes increasingly important, therefore, that a strong career awareness be incorporated into the instructional system.
- 4) Student input is minimal. None of the activities specified in the State plan is actually directed toward finding out what students themselves see as their most urgent needs.
- 5) Goals and priorities are inappropriately related to

other manpower development. The State plan will never cover total manpower development in American Samoa unless the impact of CETA programs on vocational education is given its proper consideration and definite measures are outlined to make CETA/voc-ed linkage a reality.

Under the heading of "Priorities and Problems" the report gives a summary of a Council survey study of employer and student perspectives on vocational education; a summary of views and concerns expressed at a public hearing sponsored by the Council; a discussion of the problem of Samoan assimilation; and a summary of a report on CETA-supported activities. This section concludes with the following general recommendations:

The Board of Regents and the Board of Higher Education should as soon as possible assign a high priority to the matter of formulating and supporting a territorial-wide policy on vocational education. They should direct their departmental staffs in devising a comprehensive plan for supporting such a policy at all educational levels on a cooperative basis, and should further obtain the necessary legislative support to assure firm implementation of the policy and plan.

It is urged that the Board of Regents and the Board of Higher Education take positive measures to improve the image of vocational education for various individuals such as students, school administrators, and parents.

The Department of Education and the Community College, in cooperation with the Department of Health, should advocate and design vocational training for handicapped students. Recent passage of federal legislation (Public Law 94-142) seeks to change prevalent perceptions of how the handicapped fit into the education picture. Handicapped children now have a right not only to an education, but a program geared to their particular needs and aspirations.

A systematic career education/career guidance program should be made available to all elementary and secondary students. This program should include professional films, books, and tape presentations discussing and analyzing the various job clusters available in today's job market. Counselors need to have adequate information and programs at their disposal to assist students in making logical career and educational decisions.

The Board of Regents and the Board of Higher Education should take a closer look at the Council recommendations submitted in the annual reports of the Council for fiscal years 1975 and 1976. Sufficient consideration resulting in either implementation of or reasons for disregarding said recommendations should be made by the Board or agency to which the particular recommendation is directed.

It is recommended that the Board of Regents and the Board of Higher Education make every effort to seek funds to be allocated to carry out the recommendations contained in this report.

A section on "Selected Areas with Relevance to National Implications" reviews: (1) mainstreaming Samoa's handicapped; (2) need for research leading to procedures and plans to overcome sex stereotyping; (3) career education; (4) need for positive action in guidance, placement, and followup; and (5) need for a basic structure to provide effective articulation.

## ARIZONA

The eighth annual evaluation report of the Arizona State Advisory Council on Vocational-Technical Education includes a review with evaluative comments of the effectiveness of the programs, services, and activities of vocational education in meeting the goals and objectives of the State plan.

The FY 1977 State plan listed 12 goals and 105 objectives. Most of the objectives were either attained or exceeded; seven were partially accomplished; one was not accomplished.

The Council notes that in order for the State plan for FY 1979 to function really as a planning instrument it should be issued to the local agencies by January 1978. With the current timing, it is little more than a federal compliance document.

With regard to objectives on the improvement of placement, and followup activities for vocational education completers, the Council finds that, although the stated objectives were technically achieved, they were placed too low to indicate significant improvement. The values set do not reflect the high priority assigned to placement as an integral part of the total guidance services.

Goal six in the State plan was: to provide for articulation throughout all levels of pre-vocational and vocational levels. The Council finds that the four objectives designed to attain this goal were not fully accomplished; in addition it finds that even if they had been accomplished they would not have been sufficient to reach the goal. The Council recommends that implementation of a State policy on articulation should be assigned top priority.

In addition to evaluation of the effectiveness of vocational education programs in attaining the goals and objectives of the State plan, the report reviews the concerns expressed in its seven previous annual reports and presents tables of comparative data.

The general conclusion arrived at is: although substantial improvement has been made in both process and product since the Vocational Education Amendments of 1968, many areas of expanding need remain. Counseling, placement, and followup services need to be improved and expanded. Adults increasingly need to update old skills and learn new ones. A higher percentage of disadvantaged and handicapped must be brought into training programs. Bilingual programs must be expanded and sex bias and sex stereotyping eliminated. Inservice and preservice training of counselors and teachers must be expanded.

Among the special SACVE projects reviewed is an analysis of vocational education completers' replies to a questionnaire survey administered over the past four years. Published each year under the title "The Product Talks," this followup study shows that the areas of need stressed by completers and further revealed by employment, placement, and salary data must be recognized and addressed by local school boards, the State Board of Education, and the State Department of Education. Specific SACVE recommendations are listed below.

Recommendations resulting from "The Product Talks":

Ensure job-qualification of completers by: developing and expanding on-the-job training programs; allowing more time for skill training; including more practical, hands-on experience and laboratory hours; furnishing an adequate number and greater variety of updated, well-maintained machines, equipment, tools, books, and supplies; and offering a greater variety of jobs and training experiences.

Make certain that vocational training and on-the-job experience are directly related to each person and the specific job or field that the individual plans to enter. Devise schedules that can accommodate working students.

Seek additional funding to provide a wider variety of updated, well-organized courses, including advanced, in-depth courses. Screen program applicants and separate beginning and advanced students.

Recruit highly-qualified professionals to teach programs, and improve salary schedules to attract and retain them. Employ an adequate number of instructors who have time to teach all of their students and to consider and help with individual needs.

Continue and expand student (especially Secondary and Adult) preparation for entrance into the world of work, through teaching about applications, interviews, how to understand and cope with job responsibilities, and human relations on the job.

Raise the level of public awareness and understanding of vocational education through improving and expanding publicity, public relations and counseling. Encourage more females to train for non-traditional occupations.

Establish and expand school placement and followup services to help students and completers find related jobs. Give special assistance to women seeking jobs in non-traditional occupations, and work with employers to hire qualified women.

General recommendations:

The State plan for vocational education should be developed in time for use as a planning instrument by local administrators.

Immediate, specific efforts should be made to improve curriculum articulation practices between the secondary and postsecondary schools.

The continuing shortage of qualified teachers, especially for industrial arts and Indian community programs, should be alleviated. Qualified teachers should be given salary differentials to attract and retain them, through additional funding.

A well-defined, structured program which integrates counseling, guidance and placement services should be established for all vocational education students to increase their personal, academic and career development.

## ARKANSAS

The eighth annual evaluation report of the Arkansas State Advisory Council for Vocational-Technical Education begins with an analysis of the concerns expressed at six regional hearings on vocational-technical education co-sponsored by the Council and the Joint Interim Committee on Education of the General Assembly. These concerns are reflected in the recommendations which follow:

The Council recommends that the State Board for Vocational Education conduct a study designed to identify and eliminate poorly-attended programs of vocational-technical education and to eliminate programs which are of a duplicative nature which compete for the same geographical base. The Council considers eliminating any unneeded or duplicated programs a high priority, in order that new, needed programs can be supplied. This is necessary for the expansion and diversity of the present course offerings.

The Council recommends, based on the study recommended above, that the State Board for Vocational Education aggressively pursue the acquisition of necessary funds to implement, fund, and equip needed new programs of instruction. New programs should be defined by identifiable labor market needs of the community and State of Arkansas. Emphasis should be given to establishing diversity in vocational-technical education programs.

The Council recommends that the State Board for Vocational Education place a high priority on the funding of new vocational-technical programs in new and diverse occupational areas of instruction. Technical education should be a high priority. The Council recommends that the Board, when considering funding new programs, appraise such areas as electronics, health occupations, occupational homemaking, energy technology, marine technology, and similar program areas. By diversifying the total curriculum and broadening its base, we can appeal to a more diverse and representative population group.

The Council recommends that the State Board for Vocational Education work with the Board of Higher Education to conduct an equipment inventory of every adult-postsecondary school, community college, secondary area high school, and regular secondary vocational-technical programs. This inventory should attempt to ascertain precisely what the needs are for new equipment in the State's vocational-technical facilities. Equipment purchases should reflect the changing needs of vocational-technical programs in Arkansas. Once this inventory is complete,



Council recommends that the State Board request from the next session of the General Assembly the funds needed to update vocational-technical training equipment in such schools.

The Council recommends that the State Board for Vocational Education, based on job evaluations of specific course content, develop a salary schedule for instructors in adult-postsecondary vocational-technical schools. This schedule should be commensurate with salary schedules for instructors in vocational-technical programs in the State and community colleges. Some differentiation between skill areas might be justified based on market demands for skills involved.

The Council recommends that the State Board for Vocational Education survey the various vocational-technical instructional areas to determine precisely what spatial requirements are needed to effectively teach those programs. Once the spatial requirements are ascertained on a statewide basis, the Council recommends that the Board develop the necessary budget request for submission to the next session of the Arkansas General Assembly. The Council then recommends that the Board develop a request for expansion of needed facilities with a funding formula designed to assume 85 percent State funding for State institutions. Lastly, the acquisition of new and needed equipment should be 100 percent State-funded at both secondary and postsecondary levels.

In determining the need for additional space the Council recommends that consideration be given to changes in utilization of existing space. The expansion of space for technical education programs should be given priority over space for regular vocational-technical education programs. This does not preclude expansion of space for vocational-technical education, if there is a compelling need.

The Council recommends that the State Board for Vocational Education request a full-time staff person, who devotes his/her time to improving the image of vocational-technical education. This person should, in addition to working with the news media, work with school administrators, teachers, counselors, parent groups, business, industry, and the Arkansas Vocational Association. The primary function should be to distribute information relative to careers services by vocational-

technical education in Arkansas, the opportunities contained therein, and the educational requirements to enter those careers.

The Council recommends that the State Board for Vocational Education establish necessary requirements for certification as a school counselor as follows:

Require all graduating counselors to have a basic knowledge of the major career clusters including:  
a) educational requirements relative to entry in major careers; b) growth factors of the major careers; and c) economic potential inherent in the various career clusters.

Require secondary school counselors to have an understanding of the complex interrelationships between academic education and vocational-technical education, through hands-on and classroom experience.

The Council recommends that the State Board for Vocational Education plan, develop, and fund a summer workshop program for counselors. This workshop program should be designed to give hands-on, classroom, and on-site activities to the counselor participants. The objective of the workshop program should be to provide a link between the classroom and the real business world regarding the complex interrelationship between traditional academic courses and vocational-technical programs. This program could serve as a first step in the elimination of social stereotyping.

The Council recommends that the State Board for Vocational Education conduct a special study to determine the amount and types of vocational-technical programs needed in the prison system of Arkansas.

The Council recommends that the Board request the necessary funds to conduct an evaluation of needs facing vocational-technical education at all educational levels. This request for planning funds should encompass sufficient capability to produce a comprehensive five-year plan designed to accomplish the wide range of needs within vocational and technical education. Planning efforts should include all levels of education, business, and industry.

The remainder of the report is devoted to a discussion of the nine goals of the State plan with projected outcomes for FY 1978 to FY 1982. There is no statement or evaluation of FY 1977 outcomes

in terms of the goals and objectives of the State plan. The Council's findings, obtained at the regional hearings demonstrate that the projected emphasis on FY 78 through FY 82 is insufficient to meet the training needs of the people of Arkansas as expressed in \*

Goal 1: to strengthen, expand, and maintain vocational education programs and services to the extent that all individuals leaving or graduating from education institutions will have had an opportunity to obtain employment skills.

Goal 2 is related to cooperative education. In view of the number of unemployed youth in Arkansas, projected increases for cooperative education from 1978 through 1982 are considered to be too low.

Goal 3 is: to improve and strengthen State and local efforts to plan, administer, supervise, and evaluate vocational education programs, services, and activities to the extent that accountability measures reflect progressive attainment of quality education and training. The report states that planning is one of the weakest aspects in the overall vocational-technical efforts. Council is aware of the constraints within which State staff have to work.

Goal 4 is related to vocational guidance and counseling; goal 5 to methods, techniques and curriculums designed to respond to the requirements of changing technology, new occupations, and needs of students in the transition from school to work; goal 6 to pre-service and inservice training for instruction, administration, and supervision of vocational education; goal 7 to programs for target populations with special needs; goal 8 to programs in adult education; and goal 9 to the elimination of sex discrimination and sex stereotyping.

The discussion is a critique of the goals in the existing State plans, and not an evaluation of the effectiveness of programs, procedures, and activities in the attainment of these goals.

CALIFORNIA

The eighth annual report of the California Advisory Council on Vocational Education (CACVE) contains two recommendations: (1) that the State develop and implement a single statewide evaluation system for vocational education and (2) that the State do a followup study at least once every five years to determine the comparative employment success of vocational and non-vocational students. In the opinion of CACVE, the evaluation systems now in effect for vocational education are not effective at revealing statewide problems or trends. The report identifies the following deficiencies in the present evaluation systems:

They do not address student success.

They do not provide information the State needs to do comprehensive planning and priority-setting.

The data that they do generate are not uniform, reliable, or comparable.

They do not have adequate provision for dissemination to planners and decision-makers.

They do not have provision for employer survey and student followup.

There is unnecessary, expensive duplication of effort.

They burden LEAs with excessive paperwork.

They are not yet properly linked to the California Occupational Information System (COIS).

They do not provide information that is quantifiable and comparable across district lines.

They do not provide CACVE or the State with the baseline data they need to execute their planning and evaluation responsibilities.

According to the report, the single statewide evaluation system should:

be designed and administered jointly by the State Department of Education and the Chancellor's Office of the California Community Colleges;

include the qualitative, quantitative, and cost data necessary for local, regional, and statewide planning,

evaluation, administration, and compliance reporting;

be coordinated with COIS and use data already being collected whenever possible;

disseminate findings to LEAs;

be funded and administered by the State.

The followup study referred to in the second SACVE recommendation should be separated from the regular evaluation system because it would measure the employment success of nonvocational as well as vocational students and because the data it should collect would be more detailed than those collected by the regular system. This study should provide:

data on how well both vocational and nonvocational students identify, develop, and use their occupational talents;

comparative data on the employment success of vocational and nonvocational students;

comparative data on the pursuit of advanced training by vocational and nonvocational students;

changes in the employment status of vocational education completers;

the percentage of vocational education completers and leavers placed in jobs that require skills;

comparative data on student satisfaction with vocational education programs in comparison with other programs;

comparative data on the satisfaction of vocational education completers with their education and the satisfaction of non-vocational students with their education;

comparative cost-benefit analysis of vocational and nonvocational programs.

The report also identifies the data elements that could be collected via the statewide evaluation system and followup study, the kinds of reports that could be made with such data, and hypothetical examples of the kinds of reports that could be produced if the ACVE recommendations were approved and implemented.

## COLORADO

The eighth annual evaluation report of the Colorado Advisory Council for Vocational Education includes the following: the response of the State Board for Community Colleges and Occupational Education to the SACVE recommendations of the 1975 and 1976 annual reports; recommendations for FY 1977 with rationale and suggestions for implementation; identification of issues for further study; summary of testimony presented at Advisory Council public hearings; general information on the Colorado delivery system for vocational education with specific data for typical facilities in a rural setting and in an urban setting. The report concludes with statistical data on student enrollments (1976-77); State, local, and federal expenditures (1973-77); and followup studies on program graduates and on students who left before graduation with marketable skills (1975-1976).

The report quotes the mission statement as expressed in the five-year and annual State plans for vocational education in Colorado:

To ensure that quality occupational programs, projects, and services which are consistent with manpower needs are available to serve all persons who can benefit from the acquisition of knowledge, skills, and attitudes necessary for employment.

The following are the SACVE recommendations for FY 1977:

- that the State Board for Community Colleges and Occupational Education systematically evaluate the overall administration of vocational education in Colorado so that the trend towards shifting the program planning, budgeting, and evaluation responsibilities to building principals and away from qualified local directors of vocational education be recognized and appropriate action taken;
- that the State Board for Community Colleges and Occupational Education take an active role in communicating with local districts and local CEA prime sponsors relating to the purpose and objectives of the various vocational education programs, especially in the area of cooperative education;
- that a concerted effort be made by the State Board for Community Colleges and Occupational Education to communicate with the Department of Corrections and the State Vocational Rehabilitation Agency for the development, coordination, and funding of an expanded program in vocational education for the correctional

institutions in the State. Such programs would be based upon a manpower needs assessment to maximize training for jobs which will exist in the future.

The Council endorses the utilization in the Colorado delivery system for vocational education of the administrative center. This is an organization unit which arranges for contracts between school systems for vocational education programs. The major impact is at the secondary level. A total of 8,511 students are being served by 22 administrative center contract programs. These contracts are between secondary school districts and vocational-technical schools, community and junior colleges, four-year colleges (private), proprietary schools, and other school districts. Benefits also accrue at the postsecondary level. Rural community colleges broaden their vocational curriculum with secondary vocational program contracts. Comparison of expenditures from 1974 to 1977 shows that total expenditures for vocational education in Colorado increased by 14.9 million dollars, from 43 million dollars to 59.9 million dollars. The largest increase was 11 million dollars in local expenditures. At the State level, the increase was 2.7 million dollars and at the federal level, it was less than one million dollars (\$907,000).

The most significant responses in the followup study were those related to the unemployed who were seeking employment. For 1976, six of the seven secondary-level programs showed 5 percent or less unemployment. None of the postsecondary level programs showed more than 3 percent unemployment. These figures contrast sharply with the reported statewide youth unemployment figure, which is 16 percent.

## CONNECTICUT

The eighth annual evaluation report of the Connecticut Advisory Council on Vocational and Career Education begins with an introduction which surveys federal legislation related to vocational education, including the establishment of State Advisory Councils. It is noted that the concept of vocational education as a major mission of the school is becoming an ever-growing reality. The Connecticut Council, reviewing its existence in the eighth year of its history is convinced that both Vocational and Career Education have profited from the dedication of its members and from their wide range of expertise.

A section devoted to "An Historical Perspective" gives in more detail some selected information on membership and activities of the Council over the eight-year period. Developing relations between State agencies and the Council are traced showing evidence of growing independence of the Council and consequent improvement in the ability to function in the mandated areas of evaluation and recommendation. Difficulties resulting from inadequate federal funding for small states were resolved favorably and State funding legislation was promoted. The Connecticut Master Plan for Vocational and Career Education was initiated, achieving a major objective of the State Advisory Council. The Council relates much of its achievement in the past to the ability and experience of its Executive Director, who served for most of these years. Upon his retirement in January 1977, a successor has been appointed whose qualifications were considered with reference to the additional mandates and responsibilities placed upon the Council by the new federal legislation.

The report includes a special statement on vocational and career education of the physically handicapped, emphasizing the necessity for removing all attitudinal and physical barriers.

Other concerns of the Council are reflected in the recommendations which follow:

- The State Board of Education periodically and systematically should review the status of time-line implementation of the recommendations for the Connecticut Master Plan for Vocational and Career Education. Increased emphasis should be placed on those goals which have not been fully achieved. Those areas which require State financial support for implementation should be included in the State Board of Education budget requests. Any goal which requires General Assembly action should receive a high priority status in the State Board legislative program.



- The State Department of Education, working in close cooperation with other agencies, e.g., the State Departments of Labor and Commerce, and in conjunction with business, industry, and labor, should provide a more substantial leadership role. Manpower needs should be identified and educational programs and services designed to meet these needs. This planning process should include a coordinative role to avoid unnecessary duplication.
- The State Board of Education should consider the adoption or strengthening of policy statements and appropriate guidelines in the following areas:
  - the right of each student regardless of sex, handicap, or residence within the State to equal and appropriate opportunities in vocational and career education;
  - a comprehensive definition of "vocational education" giving due recognition to its importance in both the local education agencies and in the regional vocational technical schools and agricultural centers;
  - a comprehensive definition of "career education" which would permeate the entire curriculum and gear all education experiences to preparation for economic independence;
  - a clear definition of the relationship between vocational and career education based upon the definition, policy statement, and guidelines adopted by the State Board of Education.
- The Division of Vocational Education should devise and implement a computer-based system programmed to display the costs of existing programs: (1) by total program costs; (2) by per-student enrolled.
- It is recommended that direct communication be established or strengthened among the local education agencies and the regional vocational-technical schools, agricultural centers, community colleges, state colleges, University of Connecticut, Comprehensive Employment and Training Act prime sponsors, and any institution or provider of vocational and career education services. These linkages should include business, industry, labor, education and the general public.

- Recognition should be given to the unique nature of each regional vocational technical school and agricultural center operating within the community it serves, the student body, and faculty and administrative strengths and weaknesses. Local autonomy must be given to meet mutually approved goals in an overall plan.
- Each regional vocational technical school and agriculture center should solicit and use the advice and cooperation of the administration of each local school system within its service area.
- The State Board of Education should exert whatever leadership and/or influence necessary to assure a responsive funding level to implement vocational and career education programs and services designed to help our major natural resource -- all the people of Connecticut.
- The State Board of Education must provide adequate financial funding for state support for vocational and career education. This funding should be determined by an equitable assessment of community need for such support and the need for trained manpower.
- The State Department of Education personnel, in conjunction with local educators and persons from business, industry and labor, must provide the necessary leadership for the development, design and revision of curriculum information and guidelines to be made available to the local education agencies and regional vocational technical schools and agriculture centers. The curriculum design should include a process for the elimination of any outdated programs or services.

## DELAWARE

The FY 1977 evaluation report of the Delaware Advisory Council on Career and Vocational Education includes the following sections: the State plan; the CETA Plans; local program evaluation; career guidance, placement, and followup; sex bias/stereotyping in vocational education; local advisory committees; vocational youth organizations; vocational education for the handicapped; vocational-occupational teacher training; and legislative priorities. Each section includes a brief discussion followed by a list of specific recommendations.

The SACVE State plan committee was included as an integral part of the planning committee of the Department of Public Instruction. There was opportunity for Council input and criticism at each stage of development of the plan. The Council generally endorses the annual and five-year goals of the State plan.

In implementing the State plan, the Council recommends that the Department of Public Instruction continue to give particular attention and priority to:

- assisting local districts in securing timely financial assistance;
- assisting the local districts with the development of programs of demonstrated need rather than distribution of funds upon population ratios;
- the development of programs that show promise of eliminating sex bias and sex stereotyping;
- increased coordination and cooperation with CETA programs to avoid duplications of effort and cost and to insure that appropriate funding is provided so that programs can become operational within designated time frames;
- intensive coordination with the reorganized school district(s) in New Castle County to provide continuity of services to all students during transition;
- a continuing review and evaluation of the goals, objectives, criteria and budget contained in Part II of the State plan so that progress may be more effectively measured;
- the publication, with the involvement of the State Advisory Council, of a "mini-plan" for vocational education that in brief, readable, presentation affords the schools, other agencies and the citizenry of Delaware an opportunity

to appreciate the goals, objectives, and needs of vocational education in the State;

- make every effort to guarantee the timeliness of the State plan so that the funds associated with the plan will be available as soon in the new fiscal year as possible;
- provision of adequate time to allow for funding, assistance, and direction from the Department of Public Instruction prior to actual evaluation of the program;
- the inclusion of the State Advisory Council as part of the proposal review process.

Although cross-membership representation between SACVE and the State Manpower Services Council provides a mechanism for coordination, the Council finds that there remains a distinct problem of timing in developing CETA plans and coordinating activities among other agencies.

Through a cooperative agreement with the Department of Public Instruction SACVE members accompanied staff members of the Division of Vocational Education on program and school visitations. The Council considers that there is need for improvement in the process of evaluation and recommends that the Department of Public Instruction re-evaluate its leadership role in the State; that it invest in the development of valid and reliable evaluative criteria; and that these criteria be developed in consultation with local administrators, project directors, advisory committee members, and teachers.

The Council finds that career guidance, placement, and followup are inadequate in Delaware and practically non-existent in correctional institutions. Contributing to this condition are: inadequate funding; local assignment of non-counseling responsibilities to counselors; size of student population; inefficient location of counseling facilities; and lack of knowledge or utilization of local advisory committees. In general, the guidance program is low in priority, misunderstood, and under-financed. It would be beneficial in a complete evaluation if the process dwelled more upon the total success of the program rather than on assurances that the districts did what was listed in the performance objectives.

With regard to sex bias/sex stereotyping in vocational education the eighth annual report notes that 24 of the 26 career guidance counselors in Delaware are male; that salary stereotyping exists; and that there are inconsistencies in teacher certification

requirements in various occupational areas. The Council is concerned that the State Board of Education, in designating the job category and description for the person charged with identifying and eliminating sex bias, has placed it on a low, non-decision-making level and has included "other" tasks.

The Delaware Council, in response to its new functions under P.L. 94-482, is in the process of developing a presentation and a materials package for local advisory committees, and has agreed to conduct workshops for local chairmen and members of advisory committees.

Among the recommendations on vocational youth organizations are the following:

- that teacher education institutions of the State require course(s) in the use of vocational student organizations as a method of instruction in vocational education and that the certification division of the State Department of Public Instruction make this a requirement for certification of vocational education teachers.
- that all approved vocational education programs, particularly those of the Juvenile Corrections Division, incorporate leadership development, civic responsibility, and social awareness skills as provided by the existing vocational student organizations.

The Council found in its program visitations that youth activities programs for the handicapped are extremely limited or non-existent. It recommends that the State Advisors of Vocational Student Organizations assist teachers of the handicapped in the development of an appropriate program of organized activities for handicapped students.

## DISTRICT OF COLUMBIA

The 8th annual evaluation report of the District of Columbia Advisory Council on Vocational Education notes that the Office of Instruction and the Division of Planning in the D.C. Public Schools published a one-year Comprehensive Educational Plan in September, 1977. It is expected that the planning process will integrate the State Plan for Vocational Education and the Capital Budget Plan for career centers. The current status is that the phase-in plan for four career centers is still under study within the Division of Career Development Programs. The Career Development Exemplary Project funded under the State Plan for Vocational Education from 1970 to 1976 was discontinued for lack of available funding. The Council believes that career education must be an integral part of the school curriculum at all levels in order for vocational education to succeed.

Since September, 1977, students in the construction cluster at a career center have been engaged in a work-study project for the restoration and renovation of a burned-out residence.

The Council has determined that while the D.C. schools do not have formal policy regarding the establishment and functioning of advisory committees the Administration has initiated steps to develop such committees with technical assistance from Council staff.

The Division of Career Development Programs reports that the FY 1977 basic grant for services to handicapped students was transferred to the Division of Special Education. The Council finds that information given in the FY 1977 Vocational Education Descriptive Report concerning the utilization of these funds requires further clarification.

The FY 1977 Annual Descriptive Report of Program Activities and Accomplishments did not permit a systematic assessment of the FY 1977 State Plan for Vocational Education. It does, however, report continuance of the interdisciplinary cooperative education program, business and office education, consumer and homemaking, occupational home economics, distributive education, health occupations, trade and industrial education, agriculture, and technical education. There is also a placement profile for graduates of six career development centers.

One major goal of the D.C. School System is the implementation of a competency-based curriculum utilizing computer-assisted individualized instruction. Progress towards this goal in FY 1977 is shown in the steady and significant improvement in monthly competency levels in basic skills reported for one career center.

The Council report includes an analysis of the second annual report of the Manpower Services Planning Advisory Council (MSPAC) and makes the following recommendations:

- that the Mayor of the District of Columbia give serious consideration to the need to integrate, and possibly consolidate, all employment and training programs under one single office or department, agency or office, and that it be responsible for assessing the total extent to which employment and training programs and dollars are made available to the District in any given fiscal year; and that the MSPAC, DOM and the OBMS be directed by the Mayor to give high priority to linking the District's Manpower Plan and efforts more closely with the District School System;
- that as a matter of Mayoral priority, the Management Information System should be immediately improved by either:
  - scrapping the existing system and having an outside firm establish a workable MIS;
  - shifting the MIS operation from its present location to a staff location responsible to the Director of the Department of Manpower; or
  - keeping the present system where it is (although the current location is part of the problem) and using monies authorized under CETA to expand existing services through the use of mini-computers or shared-time services.
- that the MSPAC and the DOM should give serious consideration to a policy choice which confronts the prime sponsor; "Is it better to serve fewer persons well or a larger number of persons less well?"
- that the MSPAC and its staff in cooperation with other components of the comprehensive employment and training system develop a multi-year planning process for Comprehensive Plan modification each year, facilitating minimal loss of time in start-up and reducing lag time in completion of plans for each Title for which the District will receive funds;
- that the MSPAC, DOM, CETA subgrantees, and the D.C. Budget Office make more effective affirmative action

efforts to include more women in CETA Title II and VI programs, and more disabled veterans and ex-offenders in all CETA programs.

Other recommendations of the eighth annual evaluation report include the following:

- that the Board of Education establish a formal policy regarding the establishment and operation of occupational and craft advisory committees;
- that DCACVE be provided with more information concerning the manner in which the vocational education funds for the handicapped are coordinated with career development services provided by special education;
- that the Annual Descriptive Report be developed in close consultation with the Division of Special Education or that the Division of Special Education prepare that part of the Annual Descriptive Report for the Division of Career Development Program;
- that DCACVE require accountability from the D.C. Public Schools in regard to Title IX and the provisions in the new Vocational Education legislation relating to sex discrimination and sex role stereotyping;
- that evaluations of all programs conducted or reviewed by DCACVE include analysis of data broken down by gender, to show the participation of male and female students in terms of the number who apply to participate in courses or programs, the number placed, and the kinds of job placements for each;
- that female intensive programs and courses be evaluated from the point of view of their impact on students' lives, including the potential they offer in terms of gainful employment;
- that the Board of Education request a specific plan for all Title IX activities.



## FLORIDA

The eighth annual evaluation report of the Florida State Advisory Council on Vocational and Technical Education begins with a review of some of the exemplary activities of vocational and technical education in Florida during the past year. These include efforts to delete sexist references or illustrations in vocational education materials; progress towards improved articulation between secondary and postsecondary programs by the adoption of a Statewide Course Numbering System (SCNS) which identifies courses that are substantially equivalent in content; increase in educational services to migrant workers and other disadvantaged persons by cooperation between CETA and the Individualized Manpower Training System (IMTS); and work-study cooperation between Central Florida Community College and the Crystal River facility of the Florida Power Corporation for the training of radiological health technicians.

The Council assessment of vocational and technical education programs, services, and activities in FY-77 found that the major unmet needs are as follows:

The geographical mismatch between vocational planning boundaries and urban labor markets is a serious problem.

More detailed, specific statewide data should be gathered and analyzed relating to the needs of disadvantaged and handicapped students served under the State plans for vocational education. These data should also be systematically validated.

The results of a statewide followup survey of school district 1976 completers found that the majority of secondary vocational and technical education students are not finding employment in areas for which they have been trained.

Many public vocational and technical education opportunities in Florida are not available to physically disabled students due to architectural barriers.

Questions still exist as to what criteria have been used in distributing federal vocational funds to school districts, community colleges, and other agencies.

Projected labor supply figures used in the five-year and annual State plans may need to be revised to more accurately reflect "other sector" output, such as training provided by or through CETA prime sponsors, industry training programs, and private vocational and technical schools.

A Council-sponsored study conducted on a sample of South-east Florida public postsecondary vocational and technical programs found that the sampled programs provide more economic benefits to upper socioeconomic individuals than to lower socioeconomic individuals.

The Council includes in the report 12 recommendations for each of which a rationale is given.

The Florida Department of Education should develop and implement procedures designed to systematically determine the accessibility of all educational facilities by the handicapped.

State Board of Education Administrative Rules implementing Senate Bill 29-A of the 1977 Florida legislature should be developed in accordance with requirements expressed in the Section 504 Regulations (P.L. 93-112) issued by the U.S. Department of Health, Education, and Welfare.

State capital outlay budgets developed for education facilities and buildings should contain adequate funding provisions needed to ensure compliance with State and federal requirements relating to program accessibility by the physically disabled.

Procedures used to follow up vocational and technical education students need to be improved by (a) means of carefully designed panel studies and (b) sampling of non-respondants. The data collected through these improved procedures should be used to conduct longitudinal studies of vocational and technical education students.

Criteria in addition to training related job placement should be developed for evaluating the effectiveness of vocational and technical programs.

Quantitative and objective performance measures should be developed for use in statewide evaluation of vocational and technical education; in addition, statewide evaluation procedures should be enlarged upon through the use of such techniques as cost-benefit and cost-effectiveness analyses.

Labor market information developed by the State for use in vocational and technical education planning at the local level should be based on standard metropolitan statistical areas or economic planning regions rather than on coordinating council regions.

Vocational and technical education data collected through the Vocational Management Information System (MIS) should be validated on a systematic basis.

A review of vocational and technical education programs serving the disadvantaged and handicapped should be conducted to determine: (a) the reason for irregular enrollment patterns in these programs and the validity of procedures used in State plans to project target group enrollments; and (b) the reason for the high concentration of black students in "special" vocational courses designed for the mentally retarded.

Financial assistance should be expanded to economically disadvantaged individuals who wish to attend public post-secondary vocational and technical education programs.

A periodic review should be conducted of the impact of vocational and technical education programs on inequality.

Vocational and technical education programs serving economically disadvantaged students should be improved by: (a) expanding promotional and outreach plans designed to increase the demand for postsecondary vocational and technical education among economically disadvantaged individuals; (b) providing high quality counseling and guidance services to the economically disadvantaged; and (c) reviewing occupational program admission standards and criteria to ensure that the standards and criteria are valid and are equitably applied to the economically disadvantaged.

The Council finds that substantial progress was made during FY1977 in meeting the State's long-range goals, priorities, and annual objectives. For several goals and objectives, however, data were not available. Outcomes projected for administration goals and objectives were shown mostly in terms of numbers of state board staff and educational delivery systems and agencies. In general projected outcomes were attained. Many outcomes projected under the State plan section on Vocational Planning and Budgeting were written in such a manner as to preclude measurement of accomplishment. Much of the data needed for evaluation of vocational program and staff development outcomes were not available. Outcomes relating to objectives of special programs serving the disadvantaged, handicapped, CETA, and adult migrant workers were in large measure attained. The report notes that final enrollment and completion data needed for evaluation of outcomes should be available within 90 days of the end of the fiscal year, especially since the development of a computerized Management Information System.

The report states that accurate information was not available with which to measure the extent to which federal vocational act funds have been used to address State plan goals, priorities, and objectives. The Council did, however, make an analysis of the data that were available and arrived at the following conclusions:

Questions still exist as to what criteria have been used in distributing federal funds to school districts, community colleges, universities, and other agencies.

Accurate performance measures relating to vocational and technical programs in Florida public schools need to be developed and implemented as soon as possible. Cost-effectiveness and cost-benefit studies of vocational education done under the auspices of the State Board are no more a reality today than they were seven years ago.

## GEORGIA

The covering letter of the eighth annual evaluation report of the Georgia Advisory Council on Vocational Education states that the report represents the activities of the Council during FY 1977 and documents some major findings and conclusions. It does not include any formal recommendations to the State Board of Education.

In cooperation with the State Board of Education the Council held a series of regional hearings to obtain public opinion on what should be included in the Five Year Plan for Vocational Education. Topics covered included: overall flexibility of the plan; course offerings; guidance counseling and job placement sources; in-service teacher training and utilization of non-degreed teachers for skill training; improvement of accessibility to comprehensive high schools; contracted services of private non-profit institutions; funding for staff of youth clubs; home economics courses for the aged and the handicapped and for both homemakers and wage earners; elimination of sex discrimination and stereotyping.

The report includes information on the early development of computerized system profiles, the outcome of a joint effort of the Council and the State Department of Education to modernize the flow of vocational education information.

The Council lists with comments, issues that will confront the State Board in complying with the vocational education amendments of 1976. These include: State administration of accountability; delegation of responsibility to local recipients; location of the sex bias monitoring office; financial support of local advisory councils; career awareness and skill upgrading programs; and projection of employment needs.

In the area of public information, the Council reports the broadcasting by the Georgia Educational Television network of "You're the Star", a documentary film depicting the various facets of vocational education in Georgia.

The report describes briefly the findings of an assessment of the Comprehensive High School system in Georgia and of an analysis of the pay schedules of vocational graduates by field of training.

The Council urges the adoption of a State Board policy on the establishment of a metric conversion program in vocational education.

The report concludes with a reference to two recommendations of the seventh annual report which continues to represent unresolved issues. The first refers to legal questions involved in the use of Area Boards in the governance and administration of postsecondary schools. The second urges the State Board to re-examine the utilization of private sector resources as a complement to the public vocational education system in Georgia.

## GUAM

The Territory of Guam Advisory Council on Vocational Education includes in its eighth annual evaluation report the following sections: Part I, Background of the Council; Part II, Activities of the Council; and Part III, Evaluation Report of Vocational Education on Guam. Part III was produced under contract with the Council by an external evaluator. The executive summary supplied by the evaluator is given below.

Guam, like many other places, has a vocational education program which is characterized by having in general, good programs, but a shortage of programs that are truly vocational in that they are designed and operate to provide students with entry-level job skills. Congress found this to be the case in many states, resulting in P.L. 94-482, which is much more definitive than previous laws in terms of requiring curriculum to be based on entry-level competencies and to be evaluated on placement and follow-up. This lack is currently more critical on Guam because of the pressure to decrease the dependency on H-2 alien workers and the limited postsecondary programs available.

The evaluator finds that the 1977-78 Territorial Plan for Vocational Education lists objectives and activities designed to alleviate many of the problems or points of concern raised in the evaluation. If followed, therefore, vocational education on Guam should be in a much stronger position a year from now than it is today.

The recommendations are respectfully submitted by the evaluator in the hope that by following them, DOE might bring the plan closer to reality.

The evaluator found that even though the Associate Superintendent's office had made an effort to gather raw manpower needs data and had extensively revised previously used statistical data, that accurate data depicting the manpower needs on Guam still does not exist. Others are looking for this data also.

Some vocational programs on Guam are utilizing Craft or Advisory Committees to help the instructor stay current in the subject and to validate curriculum. Unfortunately, the use of this means or any other to validate curriculum is not widespread. There is a shortage of programs that are really geared to the competencies required on the job.

The Cooperative Education program at Voc-Tech High School is an excellent program which is well thought of in the business community. Unfortunately, it is not utilized by all programs. Consequently, some advanced students are not getting the direct on-the-job experience that they need. If students are involved in C.E.,

there is no Craft/Advisory Committee, and no other visible contact with the job by the instructor and/or students, the evaluator seriously doubts a program's ability to develop job-ready students.

The reduction in the use of the H-2 alien workers requires more than just the correction of the deficiencies outlined to date. Secondary programs cannot be extensive enough for students to become skilled craftsmen and still meet other graduation requirements, and secondary students are not mature enough to handle that level of employment on the average. As stated in the Battelle Report: "Efforts to reduce unemployment should be focused on young adults just entering the labor force. Continued education or specialized training must be available to high school graduates or excessive off-island migration will occur." (Pg. 4-14, Economic Adjustment Program, Office of Economic Adjustment). Postsecondary vocational education is in short supply on Guam, especially in the areas utilizing H-2 alien workers. Private employer groups are contemplating various types of training, and vocational education should actively seek involvement.

A major void seems to exist administratively in that there is no one to work directly with teachers on curriculum. A curriculum specialist position is vacant and attempts to fill it have been unsuccessful to date. The job that needs doing in curriculum improvement and expansion will not be accomplished without strong leadership in this area.

These and other findings of the evaluator have produced the following recommendations:

- All of those interested in a manpower-needs assessment should get together without delay to pool their needs, talents, and resources so that a comprehensive analysis may be done which will meet the specific needs of each organization.
- The evaluator believes that the Advisory or Craft Committee is such a vital element in the curriculum development process at the classroom level that he encourages DOE to use every means at its disposal to increase the number of functioning committees and to require their establishment prior to starting any new program.
- Further, the evaluator recommends that the Advisory Committees and/or other means be used to validate every vocational curriculum against actual job requirements.
- Cooperative Education, as used on Guam, should be an integral part of every vocational program.

- With the increased emphasis on placement in the new law, more effort needs to be directed towards this activity.
- The evaluator recommends that the relatively small amount of federal dollars involved with the two objectives to increase the number of vocational areas available to students and to provide secondary students with entry-level skill training be used as incentives for the truly vocational programs on the island.
- For courses which do not meet the criteria proposed in the preceding item, the evaluator recommends reducing the time of instruction.
- The evaluator again recommends that at least some of the inservice effort be directed toward competency-based instruction.
- The position of Curriculum Coordinator should be filled at the earliest date possible to work directly with teachers on the development, continuity, and improvement of curriculum.
- In terms of curriculum expansion, the area which seems most pressing without a detailed analysis is a food-service curriculum.
- A curriculum supplement which the evaluator did not see, but which has proven beneficial other places is what might be termed a "job seeking" unit.
- There is an apparent need for an expansion of postsecondary vocational education. The evaluator recommends that the link between secondary vocational education, the UOG-CCC, and adult vocational education which has now been established be strengthened, and coordinated planning be a high priority.
- The evaluator believes that a dialogue needs to be established between the administration of vocational education and employers in the construction trades, and other users of H-2 alien labor.



## HAWAII

The annual evaluation report for FY 1977 of the Hawaii State Advisory Council on Vocational Education addresses three topics: vocational education of the handicapped; vocational education for inmates of correctional institutions; and management information. In an appendix, summary data are given from the Annual Descriptive Report of Program Activities for Vocational Education and comparisons shown for outcomes sought and achieved for objectives of the FY 1977 annual plan. The objectives listed refer to enrollments and programs at the secondary, postsecondary, and adult levels for students in the following categories: general, handicapped, and disadvantaged. Also included in the report is a special study, "The Status of Women in Vocational Education: U.S. and Hawaii."

The Department of Education met its FY 1977 objective of job placement for 80 percent of the students in the occupational skills program for the handicapped. It surpassed its objective of serving 86 percent of the identified handicapped in the program for the educable mentally retarded. The occupational skills program met its expansion objective partially by the addition of five out of seven schools. The University of Hawaii community college system increased the enrollment of handicapped students but fell short of its projected FY 1977 objective.

The report analyzes the mandates of the new legislation for the handicapped -- P.L. 94-482, Education Amendments of 1976; P.L. 94-142, Education for All Handicapped Children Act; P.L. 93-112, Rehabilitation Act of 1973 with particular reference to physical accessibility; program accessibility/mainstreaming; statewide and individualized planning; and coordination and cooperation among schools and agencies. Recommendations are formulated for improved and expanded vocational education services for the handicapped.

The section on the availability of vocational education in correctional institutions examines existing programs supported by the Correctional Master Plan and makes recommendations.

The report concludes with the Council's analysis of problems of management information related to the availability of program and fiscal data under the various due dates specified in recent legislation.

### Summary of Recommendations

The availability of vocational education to the handicapped.  
The Council recommends that:

- The State Board for Vocational Education request the

Department of Education to consider inclusion of objectives or program activities in the State Five-Year Vocational Education Plan which will:

Provide vocational education programs to all schools, including special schools for the handicapped.

Meet vocational education needs of all handicapped groups.

- The University of Hawaii utilize more State funds to support handicapped programs and services.

Meeting the mandates of new handicapped legislation. The Council recommends that:

- The State Board for Vocational Education request:

The University of Hawaii and the Department of Education develop standard, system-wide physical specifications and guidelines for admitting the handicapped into programs.

The University of Hawaii and the Department of Education conduct special studies to identify vocational education program areas in which the handicapped have been taught successfully and placed in nonstereotyped jobs with career potential.

The Department of Education permit handicapped students to have access to courses in the Re-structured Vocational Education Program and the Special Education/Vocational Rehabilitation Work-Study Program to the maximum extent possible.

The University of Hawaii and the Department of Education plan a program of in-service education on the teaching of the handicapped for regular classroom instructors.

The University of Hawaii College of Education develop a unit on the teaching of the handicapped as a required part of the curriculum for all pre-service vocational education instructors.

The University of Hawaii and the Department of Education clarify and assess the extent to which

instructors can be personally legally liable for injuries to the handicapped and disseminate the information to all individuals serving the handicapped.

- The State Board for Vocational Education request the Department of Education to develop for its State plans more complete planning statistics on the handicapped.
- The State Board for Vocational Education request the Office of the State Director for Vocational Education to work with the Division of Vocational Rehabilitation to develop better planning statistics on the handicapped.
- The State Board for Vocational Education request the Department of Education to assure that each handicapped student will develop vocational as well as academic objectives in his or her individual education plan (IEPs).
- The State Board for Vocational Education request:
  - The University of Hawaii and the Department of Education, the different administrative levels of each system, and each school (including special schools) within each system to develop a cooperative program of information-sharing regarding their handicapped programs.
  - The University of Hawaii and the Department of Education develop closer cooperative working relationships in serving the handicapped.

The availability of vocational education in correctional institutions. The Council recommends that:

- The State Board for Vocational Education, with the cooperation of the Department of Social Services and Housing, develop a program of public information and education regarding the Correctional Master Plan.
- The State Board for Vocational Education, with the cooperation of the Department of Social Services and Housing, consider vocational education delivery systems other than community-based programs for Hawaii State Prison.

- The State Board for Vocational Education consider supporting legislation that establishes short-term vocational education programs at the Hawaii Youth Correctional Facility.
- The State Board for Vocational Education request the Department of Social Services and Housing to work with the Department of Education in making the Restructured Vocational Education Programs available to inmates of the Hawaii Youth Correctional Facility.

Management information. The Council recommends that:

- The State Board for Vocational Education request the Department of Education, the University of Hawaii, and the Office of the State Director for Vocational Education to retain October 1st as the due date for compiling the information and data on program activities required for the Annual Accountability Report.
- The State Board for Vocational Education request the Office of the Chancellor for Community Colleges to:

Expedite as much as possible the release of information regarding the amount of federal vocational education funds allocated to each community college so that earlier and more effective implementation of programs can be achieved.

Develop procedures that would enable community colleges to implement federally-funded programs and services prior to actual receipt of federal allocations.

## IDAHO

The eighth annual evaluation report of the Idaho Advisory Council on Vocational Education is organized into six parts.

Part I enumerates Council activities during FY 1977. These included public hearings, Council meetings, and cooperation in the production of a film on vocational education in Idaho titled "Idaho -- The Quality of Life." A summary is given of the prevailing opinion expressed at the public hearings.

Backed by a rationale for each, Part II enumerates the following twelve recommendations:

- That the State Board for Vocational Education continue to request increased funding from the Idaho Legislature for Secondary and Postsecondary Vocational Programs and Facilities. It is further recommended that the State Board for Vocational Education request additional federal funding for vocational programs.
- That the State Board for Vocational Education request a continuing emergency vocational training fund of \$100,000 from the Idaho Legislature for FY 1979.
- That the State Board for Vocational Education require a five-year followup study for students at the postsecondary level who have been enrolled in vocational education. This study should include both the students who successfully complete a program and find careers, as well as those who drop out.
- That the division of vocational education become more actively involved in providing training for the handicapped and disadvantaged.
- That the new secondary vocational funding formula, developed by the Vocational Formula Task Force, be accepted and implemented with the necessary funding.
- That written objectives be established for each secondary and postsecondary vocational program. These objectives should be examined by the State Evaluation Team every two years at the postsecondary level and every five years at the secondary level.
- That a task force be organized to study the most feasible delivery system of secondary vocational programs to small rural school districts in Idaho where vocational programs are few or non-existent.

- That the State Board for Vocational Education, through the Division of Vocational Education, compile informative statistics which illustrate enrollments, needs, and results of vocational training. These statistics should be readily understandable and available to legislators and the people of Idaho.
- That a better communication system be implemented between secondary and postsecondary levels of vocational education.
- That the State Board publicize the shortage of vocational teachers at the vocational secondary and postsecondary levels, and aid the vocational teacher training institutions in solving this problem.
- That the State administrator for vocational education be invited to attend all state board meetings for informational purposes and to provide input concerning vocational education.
- That the State Curriculum Committee add at least one new member representing vocational education. It is recommended that the new vocational member be a postsecondary area school director.

Part III indicates the consideration given to the Council's 1976 recommendations.

Part IV states that because this was the first year of operation under the Education Amendments of 1976, the Council could not evaluate the progress in the State plan.

The Council participated in the formulation of the plan and believes that the methods used were adequate. The Council cooperated in the development of an evaluation instrument to be used in the monitoring program.

Part V reviews the policy under the State plan for the distribution of federal funds with particular reference to economically depressed and high unemployment areas; manpower needs; and local education agencies. The Council believes that State plan distribution is in compliance with the law.

Part VI reviews the State plan mechanism for coordinating vocational education programs with those sponsored by CETA. The Council believes that the four-fold approach of coordinated

planning, coordinated decision-making, integrated services, and information sharing is adequate and expects to monitor the implementation.

## ILLINOIS

The Illinois Advisory Council on Adult, Vocational and Technical Education serves also as the State Career Education Council at the request of the State Board of Education.

The eighth annual evaluation report includes the following items of inquiry and discussion: vocational/technical education enrollments; vocational/technical education and the labor market; vocational/technical education funding; and State administration of vocational/technical education. There is also a separate report on career education and on adult education. The response of the State Board of Education to previous recommendations is given with Council reaction to this response.

The Council reports that the FY 1977 State plan follows the format of previous years. The SACVE has been critical of the plan because it is a compliance document and hopes that under the new legislation, P.L. 94-482, it will become a real planning document. Three major goals in the research and development of the FY 1977 State plan called for the funding of a total of eighteen projects. Three of these addressed energy problems: an assessment of the impact of the emerging solar energy industry upon occupational requirements and offerings for present and future vocational programs; an assessment of the employment and training needs for coal mining and gasification occupations; and a demonstration center for land reclamation and mining operations.

From data included in the report, the Council notes that the total program of vocational and technical education has grown in terms of the quality of programs and in the number of persons served. There has been substantial improvement in both process and product. There are, however, many unmet needs which still require considerable effort at improvement. Among these are the need of high school dropouts, graduates, and adults for the development of specific job skills.

A much larger percentage of handicapped and disadvantaged persons need training to prepare them to get a job. Additional funds are needed to provide the facilities, programs, and personnel. Adults increasingly need to either update old skills or learn new ones. Policies and procedures must be established to provide career educational experiences at all levels. Counseling, guidance, placement, and followup services (now available in a limited number of districts) must be improved and expanded.

To meet these needs and others, the Council submits the following recommendations:

- that the State Board of Education support its commitment



to career education with State financial resources, and encourage the Illinois Office of Education to apply for available federal resources for career education also;

- that the State Board of Education, if unable to accept the above recommendation, step forward and announce to the people of Illinois why it is unable to fund career education;
- that the State Board of Education seek legislative and gubernatorial approval of a categorical State appropriation for vocational and technical education based on a foundation level of support;
- that the State Board of Education, if unable to obtain the requisite support for the above recommendation, actively support an increased State appropriation for vocational and technical education;
- that the State Board of Education seek additional state funds earmarked for upgrading vocational and technical education equipment at all levels;
- that the State Board of Education become further involved in developing State policy in vocational and technical education by regularly discussing such policies as agenda topics in scheduled meetings and prepare a document detailing Board policy relative to vocational and technical education;
- that the State Board of Education and the Illinois Community College Board require local educational agencies to furnish a timetable for the removal of architectural barriers so the handicapped individuals can have equal access to all educational programs, especially in those districts seeking vocational and technical education program approval and reimbursement;
- that the State Board of Education continue to encourage the Department of Adult, Vocational and Technical Education to work with the Division of Vocational Rehabilitation, the Bureau of the Budget, the Governor's Office of Manpower and Human Development and the Illinois Job Service in developing uniform occupational information to be used by all agencies active in employment and training programs.

- that the State Board of Education, the Illinois Community College Board, and the Board of Higher Education, and their representative staffs, in cooperation with local educational agencies prepare a Master Plan for programs and facilities for secondary and postsecondary vocational education for appropriate articulation;
- that the State Board of Education recognize the effectiveness of cooperative education and take appropriate action to expand and upgrade such programs;
- that the State Board of Education in the State plan for vocational education recognize that approved private secondary and postsecondary programs provide vocational and technical education for Illinois citizens, and specify the extent to which these institutions are contributing to the attainment of the State plan objectives;
- that the State Board of Education seek legislative approval to bring the School Code of Illinois into conformance with Article X of the Illinois Constitution;
- that the State Board of Education seek legislative and gubernatorial approval of a categorical State appropriation for adult education based on a foundation level of support;
- that the State Board of Education, if unable to obtain the requisite support for the above recommendation, actively support an increased State appropriation for adult education;
- that the State Board of Education, and the Illinois Community College Board, continue to encourage all districts to maintain, and, to the extent possible, expand programs to assist adults in life-long learning experiences;
- that the State Board of Education support the regional adult education service centers and the bilingual adult education service center with State financial resources;
- that the State Board of Education develop guidelines and criteria to ensure the operational coordination

of adult, career, vocational and technical education;

- that the State Board of Education strengthen efforts to meet the needs, interests and abilities of non-English speaking students and adults;
- that the State Board of Education continue support for affirmative action hiring practices in the Illinois Office of Education;
- that the State Board of Education in conjunction with appropriate State and local agencies develop a timetable for the enforcement of the life safety code;
- that the State Board of Education, and the Illinois Community College Board, instruct their respective staffs to cooperate with all appropriate agencies in establishing an efficient system for providing student-oriented services of job placement and labor market information to all students;
- that the State Board of Education urge the Governor to encourage the directors of major social departments and offices to cooperate and work more closely with the Illinois Office of Education in the development of their plans and programs;
- that the State Board of Education instruct the Illinois Office of Education to work closely with appropriate State agencies administering programs, so that their respective State plans contain strategies and mechanisms for coordination;
- that the State Board of Education ensure that all appropriate units within the Illinois Office of Education are aware of programs; e.g., GETA, WIN, Urban League, Operation PUSH, vocational rehabilitation, Opportunities Industrialization Centers (OIC), Illinois Commission on Status of Women, etc., in order to provide assistance to local educational agencies which are, in some instances, required to coordinate educational programs with such programs.

## INDIANA

The Indiana State Advisory Council on Vocational Education, in its eighth annual evaluation report, encourages the State Board to take additional steps toward implementing long-range comprehensive planning action. The goals sought in this planning action should be: (a) greater student/program articulation between secondary and secondary adult vocational offerings; (b) completion of the area vocational school system; and (c) the widest use of all available resources.

The Council considers that one of its most important activities of the year was its involvement in the development and writing of a new State plan. Council input stressed the following:

- development of the area vocational school concept and vocational program to the extent that each student in the secondary system has an offering of five of the recognized vocational program areas;

- expansion of regional and/or local general advisory committees to identify needs and assess the delivery system for vocational education and implementation of funding of new or expanded programs;

- continuation of the consortium of the four State universities in areas of professional development;

- development of the five-year program evaluation with a focus on outcomes of the programs rather than administrative compliance (the process to include both components of self-study and verification by visiting teams of persons from the world of work);

- emphasis in vocational guidance and counseling should be placed on placement and followup which should be a function of the same individual who counsels students upon entering the vocational program.

Other major activities included Council meetings scheduled in different parts of the State which were open to the public, public hearings, and Council committee activities.

The evaluation committee assisted, monitored, and advised the State Board staff on the development of the five-year evaluation procedure as required by the State plan; updated the labor supply/demand report for 1977; and contracted with Purdue University for a vocational facilities study,

The public hearing and annual report committee formulated the

outline and major topics for the annual report; and arranged for two public hearings. These hearings addressed the topics of public school finance for vocational education and performance-based vocational education.

The public information and legislation committee coordinated the distribution of informational posters; the production of a vocational education film; and the production of TV spot public service announcements.

The State plan committee met with the State plan staff during the development of the new five-year and annual State plans according to the regulations of P.L. 94-482.

The eighth annual report includes the following five recommendations with a detailed rationale for each. The State Advisory Council recommends:

- that public school funding should --
  - support the weighted factors for distribution of funds,
  - fund the weighted factors for special programs at 100 percent,
  - eliminate the funding maximum and allow the Strayer-Haig formula to function,
  - maintain the grandfather clause for one or two years to assist in the transition to the fully-funded, weighted formula,
  - make provisions for adjustments in teacher ratio computations for sending school systems having higher or lower teacher ratios than the target area vocational LEA, and compute teacher ratios on current factors,
  - fund transportation formula at 100 percent based on the ADM of the current school year;
- that the State Board of Vocational and Technical Education and the Division of Vocational Education in the Department of Public Instruction encourage LEAs to expand provisions/opportunities of vocational education programs by enrolling students in the 9th and 10th grades;

- that vocational programs in correctional institutions, approved and funded by the State Board of Vocational and Technical Education, have functioning advisory committees for the total vocational education program in corrections and for each program or craft area;
- that the secondary vocational education programs provided in correctional institutions qualify to participate in the distribution of State funds;
- that the State Board of Vocational and Technical Education develop and implement a system for long-range planning for the purposes of:

gathering data and ideas from a wide variety of sources in the educational system, industry, business, labor and community organizations for developing long-range plans for vocational education; and

assess and identify the amount of support that vocational education may expect in future planning and implementation of activities designed to best serve the needs of the student and the community.

The results of the system will be utilized in the State planning, evaluation and accountability process.

The report includes tables of data showing enrollment trends by educational level and by instructional program. There is also a Council statement on its review of the 1975-76 Annual Report from the Indiana Office of Manpower Development.

## IOWA

The Iowa SACVE, in its eighth annual evaluation report, has chosen to examine the jointly administered secondary vocational programs in Iowa. The reasons given for this choice are: (1) these programs are unique and recent to Iowa, and no study has been made of them since their inception in 1974; (2) the types of programs, students, facilities, and method of finance under joint administration closely replicate the overall secondary system; (3) the problems posed in this report must necessarily probe the involvement of merged area schools in providing vocational programs to secondary students; (4) the critical financial situation of local school districts affects both local school involvement in joint programs and participation in secondary vocational programs in general.

The data available to the Council were limited to the joint programs of local schools with merged area schools. Two major methods of gathering information were field visits by Council members and staff and related research by Council staff. Field visits which included small group discussions with students, instructors, administrators, superintendents and school board members; and evening public meetings were held in five merged areas. A discussion guide was mailed to participants in advance of each meeting. The discussion guides for the public meetings included: local and State planning for vocational education; pending State legislation; and new federal legislation.

The report develops a philosophical, legal, and historical perspective for jointly administered programs and describes their status for the years 1974-1976. Tables of data from the Department of Public Instruction compare numbers of individually and jointly administered secondary vocational programs by local schools, school district area schools, and by area community colleges. There is also a breakdown by type of program: exploratory; preparatory wage earning; and preparatory home economics. Additional tables give enrollments in each category. The data support the conclusion that the growth of jointly administered vocational programs in only three years cannot be matched by any other kind of secondary educational program in the State.

In a chapter on local, area, and State planning, the Council notes a previously expressed need for a master plan which would provide students in both rural and urban centers an opportunity to enroll in the vocational program of their choice. A model is presented, based on a clustering of high schools in geographic units within each merged area, which would offer five different programs to secondary students. The report states that this model was discussed in each of the five field visits of the Council. The opinion is expressed that the Iowa State Plan for Vocational Education: Fiscal Years 1978-1982 appears to have been developed to comply with federal legislation. The Council finds that it has met these

requirements but that its effectiveness as a management tool has been restricted by funding policies, State appropriations, and State laws. Program goals are defined at the State level. It is difficult to determine the degree of implementation at the local level. State legislation does not require specific planning at the local level. Local agencies enjoy a high degree of autonomy through local taxes and general State aid. It can happen that local administrators do not have an adequate conception of where their programs fit into a State-wide plan. The State agency has supplied planning data gathered at the State level and planning guidelines for vocational and career education. Unfortunately, local schools have not used these resources on a regular, coordinated basis.

The Iowa SACVE believes that the professionals in vocational education at all levels are doing a commendable job in working towards meeting the vocational education needs of the State. In particular, the Council cites for specific commendation:

- growth in jointly administered programs
- cooperative attitude
- computerized data file
- Cycle II interface of CENIS (Career Education Needs Information System)
- Iowa guidance surveys
- five-year State plan for vocational education -- improvement in format and content.

The report includes a section on the status and issues of State and local funding at the secondary level, especially as they affect the jointly administered funding. It finds that State law governing funding on new programs in successive years results in severe inequities, especially after the federal monies which provided the initial stimulus are withdrawn. Proposals for change which were submitted in testimony before the State legislature subcommittee are included in the report. Observations from the Council field visits are also listed. The Council position is that the State funding policy must in some manner influence vocational programming in accordance with the goals of the State plan.

The final chapter of the report summarizes the observations of participants in the discussions on the five field visits on the following topics as they relate to jointly administered programs:



counselors and counseling; instructors and instruction; students; facilities, equipment and instructional materials; program advisory committees; and career education.

## KANSAS

The Kansas Advisory Council for Vocational Education states that its FY 1977 annual evaluation report is derived from interviews with key administrative personnel in vocational education, from comments submitted at its annual public meeting, and from selected documents provided by the State Department of Education.

The establishment of a State policy on vocational education, which was identified as a top priority need in the Council's FY 1976 report, is repeated as the first recommendation of the FY 1977 report. It is noted that out of twenty recommendations of previous reports, there is only one on which activity was completed and only two on which there has been substantial activity.

The report includes data showing the accessibility of vocational education programs by unified school district and by area vocational-technical schools. Enrollment data are given comparing vocational education senior enrollment with senior enrollment in unified school districts.

Out of 35,000 seniors in Kansas secondary schools, 8,100 are enrolled in vocational education. The majority of secondary vocational education programs are in production agriculture.

The report concludes with six recommendations, each supported by a rationale statement; and a summary of comments from the Council's annual public meeting.

### Recommendations:

- that the State Board of Education, in concert with other vocational and planning agencies, establish policy for vocational education;
- that the State Board of Education carefully study the professional development program for vocational teaching personnel in order to facilitate a coordinated approach among all institutions offering courses for that purpose;
- that the State Board of Education evaluate current State staffing patterns, both qualitatively and quantitatively, in vocational education to determine their effectiveness in yielding needed services to local institutions and personnel providing vocational instruction;
- that the State Board of Education actively promote development or establishment of programs on a priority

basis in areas where studies show a vital need;

- that the State Board of Education examine its capacity to provide leadership in the vocational guidance area, particularly in light of the new dimensions established in recent federal legislation;
- that the State Board of Education take a leadership role in identifying instructional areas wherein personnel shortages exist, and should furthermore investigate recruitment programs to attract students into the teaching profession in areas of capital shortage.

## KENTUCKY

The Kentucky State Advisory Council on Vocational Education calls its eighth annual evaluation report, "The Layman's View of Vocational Education." The laymen involved were an estimated 3,500 non-educators who comprise the state's regional and craft committees. The evaluation instrument was the Council-developed Kentucky Advisory Committee Evaluation System (KACES). The 575 secondary and postsecondary programs evaluated were in state schools and area centers and did not include programs in local high schools or in community colleges, technical institutes, or proprietary schools. Evaluation concentrated on effectiveness of the programs in the areas of relevancy of content, job entry skills, and employability of students.

On a need for improvement scale of 1 to 10, the KACES evaluation process resulted in the Kentucky Vocational Education Profile of Needs with values ranging from 1.17 for the area of greatest need for improvement, (Reading, Communications, and Math Skills) to 2.56, the area showing least need for improvement (Equal Education Opportunities).

The report also includes a breakdown into separate tables of data for each of the 15 areas of evaluation with average ratings for each of the 15 regional reports.

In the analysis of the data, regional comments and recommendations are listed for each evaluation area with an overall recommendation of the State Advisory Council.

In addition to the KACES program evaluation, the eighth annual report includes an analysis of vocational enrollment data with reference to goals of the State plan; a brief section on expenditures at the local, state, and federal levels; activities of state and regional advisory committees; response to previous recommendations of the Council; and recommendations for the coming year.

The report states that while analysis of enrollment data indicates overall progress toward achievement of goals as listed in the State plan the Advisory Council is of the opinion that a large segment of Kentucky's population is still not being served to the extent that it should be. The current rate of high school drop-out continues to be high and only 8 percent of vocational enrollees are postsecondary students. In FY 77 a decrease was noted in distributive education enrollments although the State plan projects "a great need for vocational programs in this area." There has also been an apparent lessening of effort in the area of cooperative education, attributable in this case to lack of funds. There was an overall support of vocational education at the state and local level. The ratio of state/local expenditures to federal increased

from \$4.00 state/local to \$1.00 federal to \$4.50 state/local to every \$1.00 federal.

For the coming fiscal year the Council recommends:

- that vocational education continue to teach the 3-R skills only as they relate to the individual vocational program;
- that guidance counselors and teachers in the elementary, junior and senior high schools be oriented to the world of work;
- that guidance counselors at all levels be released from the many extra duties and excessive paperwork that detract from their principal intended function, that of counseling;
- that each area vocational education center in the State have vocational guidance services available on a regular basis;
- that there be an increase in the funding level for post-secondary and adult programs;
- that salaries of vocational personnel be increased well beyond the normal annual increment so as to become comparable with those paid in business, industry, and local school districts;
- that the hourly rate of pay for teachers of adult courses be increased from the current \$6.50 to not less than that received in business and industry;
- that career exploration opportunities for students be increased;
- that greater emphasis be placed on cooperative vocational education in all programs in which this valuable educational tool can be used;
- that each instructional program curriculum be revised to include instruction in job interviews, work habits and attitudes, how to fill out job applications, personal development, interpersonal relations with supervisors, co-workers, customers, and the general public, the economics of industry, and other topics that will enable a person to get, keep, and succeed at a job;

- that accountability be built into each program, and cooperating and coordinating agreements with existing agencies with placement potential be developed;
- that equipment in vocational schools be updated to industrial standards.

## LOUISIANA

The eighth annual evaluation report of the Louisiana State Advisory Council for Vocational-Education is organized around a summary of State plan activities for 1977.

For each subject matter area the summary includes a narrative section which gives the overall goal of the program with relevant enrollment data for FY 1975 and FY 1977. This is followed by a detailed breakdown into State plan objectives with the activities designed to accomplish them. For each activity there is an indication of current status of progress toward completion. A third section gives Council indications of continuing program needs and other comments.

A similar analysis is included for State plan objectives in each of the following: disadvantaged and handicapped; vocational guidance and counseling; vocational rehabilitation program; research coordinating unit; adult vocational education; proprietary schools; exemplary programs and projects; vocational technical education consortium of States (V-TECS); and manpower (CETA).

In addition to an analysis of vocational health education according to State plan objectives and activities, the eighth annual report includes the results of a special survey of health education programs in Louisiana, obtained by a survey instrument developed by the staff of SACVE and mailed to 157 hospitals and 215 nursing homes throughout the State. Information was obtained concerning: employment needs in 20 categories; the extent to which employees trained in Louisiana vocational-technical schools exhibit necessary skills and good work habits in their respective areas; additional skills and training needed in vocational health occupation programs.

The report concludes with the following Council recommendations:

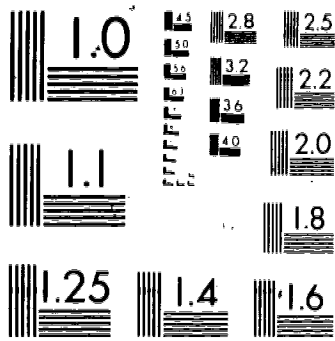
- that there needs to be developed in Louisiana a positive image for vocational education. It seems there exists a general misunderstanding and unawareness of vocational education and its programs;
- that the State Board of Elementary and Secondary Education ensure that all vocational-technical schools have adequate guidance and counseling services, with persons trained in the field of guidance and counseling handling those responsibilities;
- that a State workshop on vocational education be developed for all guidance counselors in the State of Louisiana;
- that it is imperative that programs be developed for the handicapped at the postsecondary level;

- that a review of the health occupations programs be undertaken to determine the need for more funding for additional programs;
- that there may be a need for additional personnel to carry out the supervisory and evaluation functions in the Division of Vocational Education, State Department of Education. A determination should be made of the tasks necessary to carry out the objective of the Division and each vocational section and the possible personnel needed to see what additional staff are needed to carry out the objectives of the State plan for vocational education;

that the State Department of Education develop and implement in conjunction with the new NOIC/SOIC (National and State Occupational Information Centers) a Management Information system (MIS) for all of vocational education.

Appendix includes additional data on enrollment, completion, and placement. There is also a breakdown of funding by Federal, State and local level for Louisiana and a comparison with similar data for four other southern states.





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NATIONAL BUREAU OF STANDARDS 1963-A

## MAINE.

The eighth annual evaluation report of the Maine Advisory Council on Vocational Education includes the following sections: 1977-A Year of Challenge and Opportunity for MACVE; Responses of the State Board of Education to the Recommendations of MACVE's 1976 Annual Report; Progress Report from the State Board of Education on the Implication of the Recommendations of MACVE's 1978 Annual Report; and Recommendation to the State Board of Education. Appendices give tabulations of data on total funding; federal funding; vocational education enrollments by level and by program area; and geographical location of Maine's vocational schools.

Section I charts the Council's responsibilities under the 1976 Vocational Education Amendments and compares them with requirements of the 1968 legislation. MACVE's activities during FY 1977 are then listed.

In Section II the response of the State Board of Education to each of the Council's 1976 recommendations is given. Responses are favorable except for recommendation four which called for greater fiscal flexibility for postsecondary Vocational-Technical Institutes. It is noted that while the State Board favored this recommendation the necessary legislation failed to pass.

In Section III the review of the 1975 recommendations shows two met, four partially met, and one not met.

Section IV develops a rationale for the following single recommendation of the 1977 report.

### Recommendation

The State Board of Education should agree to pursue with MACVE a discussion of some of the critical issues in Maine vocational education. The vehicle for initiating this discussion will be a series of position papers on the issues developed by MACVE through a subcommittee process, a process in which Board members are invited to participate on an ex officio basis. Position papers will first be presented to the full Council and then transmitted to the Board at certain intervals with the stipulation that a joint meeting between the two bodies will be scheduled to deal with each paper. Issues to be pursued are:

- the governance of vocational education in Maine
- the importance of job placement in evaluating the success of vocational programs;
- the career awareness needs of students; and
- how to effectively serve special needs groups through vocational education.

## MARYLAND

The eighth annual report of the Maryland SACVE was prepared by the Council's State Plan/Evaluation Committee in accordance with the requirements of Public Law 90-576. The scope, however, was expanded to address some of the new responsibilities assigned to the Council under P.L. 94-482 which became effective October 1, 1977.

Part I includes a summary of the status of council recommendations from prior (1-7) annual reports; a more detailed consideration of the status of Council recommendations contained in the seventh annual report; an account of the action taken on views expressed at the annual public meeting held March 15, 1977; and a detailed statement of the new Council recommendations of the eighth annual report with the rationale for each recommendation.

The tabulation of the current status of 47 previous recommendations shows that action has been completed on 19 percent; substantial action has been taken on 21 percent; action has been initiated on 34 percent; and no action has been taken on 26 percent.

The analysis of the status of Council recommendations included in the seventh annual report relates each recommendation to objectives and activities listed in the State annual program plan for FY 1978 or to the five-year plan for 1978-1982.

Testimony presented at the annual public meeting sponsored by the Council included recommendations for specific action by various agencies. Responses to these recommendations so far have included preparation of a master plan for corrections education by the Maryland Educational Coordinating Council on Correctional Institutions; involvement of Local Advisory Councils in local parent awareness programs concerning offerings in vocational education; endorsement by SACVE of the establishment of skills centers in Baltimore City; increased representation of women serving on the Council, including the executive director of the Maryland Commission for Women; monitoring by SACVE of the extent of elimination of sex bias and sex stereotyping; and support of the establishment of a single State federation for all vocational youth organizations.

The recommendations of the eighth annual report are as follows:

- that the State Manpower Services Council prepare a State Comprehensive Plan;
- that the State Board of Vocational Education initiate a study to determine the extent to which vocational-technical education programs are available to students desiring to enroll in such programs;

- that in-county tuition rates be available to students in one county who wish to go to another county to take vocational-technical education programs not offered by their local community college;
- that the State Board of Vocational Education establish more definitive and specific time frames for reporting on the status of completion and expenditure of funds for State plan activities;
- that vocational education programs for correctional institutions --
  - incorporate training in basic skills
  - be organized according to a cluster concept
  - strengthen the incentive system
  - include educational counseling and placement services after release
  - show active and continuing cooperative integration of all State education agencies
  - show upgrading of educational environment
  - show a variety of offerings which would prepare for work associated with their home setting upon release.

Each recommendation is accompanied by a brief rationale statement.

Part II of the eighth annual evaluation report gives an analysis of the results and benefits of State plan activities as given in an Annotated Summary of the Results and Benefits of FY 1977 State Plan Activities received by the Maryland SACVE from the State Department of Education, Division of Vocational-Technical Education on November 10, 1977. The SACVE analysis shows the following:

Complete information on actual expenditures of FY 1977 funds was not available. Fiscal year 1975 is the most recent year for which a final report is available. Final reports for FY 1976 and FY 1977 will not be available until January 1, 1978 and January, 1979 respectively.

Allocations of FY 1977 funds by formula and State plan activities meet set-aside minimums.

SDE/DVTE headquarters administration of programs and services received 9.5 percent of \$9,444,759 of Federal vocational education funds.

Federal funds amounting to \$478,517 were reallocated from 87 planned

activities. This included total funds for 42 activities and partial funds for 45 activities. Purposes for which reallocated funds were used were not identified.

SACVE did not receive copies of any amendments made to activities listed in the State plan.

Actual costs of four CETA activities exceeded estimated costs by \$1,004,195. Carryover funds were used to partially fund these activities.

Of the 211 activities listed in the State plan, 76 percent were completed. The breakdown by priorities is as follows:

Priority 1: Curriculum and Program Development, 41 activities planned, 88 percent completed

Priority 2: Personnel Development, 52 activities planned, 58 percent completed

Priority 3: Vocational Guidance, Placement, and Followup, 1 activity planned, 100 percent completed

Priority 4: Special Needs, 40 activities planned, 88 percent completed

Priority 5: Local Community Resources, 8 activities planned, 50 percent completed

Priority 6: Youth/Adult Development, 4 activities planned, 100 percent completed

Priority 7: Ancillary Services, 65 activities planned, 77 percent completed.

Part III summarized data on enrollment trends, by educational level, by program, and by sex.

Although total public school enrollment for grades 7 through 12 decreased by 1.4 percent during FY 1977, secondary vocational education enrollment in occupational programs (excludes consumer homemaking) increased by 9.3 percent. Consumer homemaking enrollment increased by 4 percent. Postsecondary including community college occupational enrollment increased by 12.1 percent. Adult occupational enrollment decreased by 2.8 percent.

Distribution by sex shows total female enrollment at all levels was 62.5 percent. By program the percentage female enrollment in

FY 1977 was as follows: agriculture, 33 percent; distributive education, 50 percent; health, 81.4 percent; consumer and home-making, occupational, 74.2 percent; consumer and homemaking, 77.9 percent; business education, 77 percent; technical, 32.4 percent; trades and industry, 17.9 percent; special, 45 percent.

Part IV covers projected Council concerns for the coming year.

Part V includes appendices covering: (A) The State Advisory Council Position on Program Evaluation; and (B) the Agencies and Groups represented at the Annual Public Meeting. Appendix A includes the role and scope of both State and Local Advisory Council evaluations as they relate to SDE/DVTE and third party evaluations.

## MASSACUSETTS

The eighth annual evaluation report of the Massachusetts Advisory Council on Vocational-Technical Education reviews enrollments, program changes, and expenditures for the period FY 70-76 and includes data for FY 77 whenever possible. The intent is to show the positive impact of P.L. 90-576. The data show a 75.6 percent increase in total enrollment and a more than 100 percent increase in total expenditures with a ratio showing current expenditures of almost \$20.00 of State/Local funds for every dollar of Federal funding. Within the total enrollment figures it is noted that enrollment of the disadvantaged has increased by 359 percent and of the handicapped by 242 percent. Within programs, male and female enrollment still reflect stereotyped patterns.

The report reflects the Council's concern for quality assessment of services, programs, and activities. The Council believes that the question of the identification and assessment of quality should be subjected to greater scrutiny.

Other major concerns of the Council are: vocational education in urban areas, and particularly in Boston; the special needs of linguistic minority students and the inadequacy of teacher training programs in this area; similar needs of students of ethnic minority background; and elimination of sex bias and sex stereotyping.

In addition the report calls for continued attention to meeting the requirements of students with special education needs, and for legislative reform to bring the State's statutes into line with Federal legislation on vocational education.

The report notes the continued emphasis on planning and evaluation in the new Federal legislation, P.L. 94-482, with reinforcement of the role of the State Advisory Council in the development of the five-year and annual State plans. The Council's position is that the State plan for vocational education should be part of a total plan for public education and should reflect the larger social and economic policy context within which occupational education must operate.

Referring to the Youth Employment Demonstration Projects Act of 1977 the report states that the State Advisory Council will focus its efforts and resources on helping to define and describe the contributions which Massachusetts schools can make to the CETA youth effort.

In a detailed analysis of the new federal legislation on vocational education, P.L. 94-482, the report includes some observations on the State plan for FY 78. Chief among these is the State Advisory Council expectation that the Division of Occupational Education

will be able to produce timely and accurate data concerning achievement of the objectives specified in the five-year and annual State plans. In the past, basic data on such things as enrollments, expenditures, and completers has been unavailable, unreliable, or in a form that makes it useless for evaluation purposes. Since the new law is quite prescriptive with respect to accountability the Division's responsibilities in the area of data gathering, analysis, and dissemination have been increased.

An appendix to the report shows a copy of the DATA Interview Guide used by members of the State Advisory Council Cost and Access Committee in their visits to five selected occupational programs. The report includes a brief description of each program and lists Council observations and conclusions.

Based on the findings and observations of its eighth annual report, the Council recommends that:

- the Board of Education dramatically increase the level of Federal funds provided specifically to Boston for FY 78, and increase aid to urban areas in general;
- the Boston School Committee and the Boston School Department provide matching funds on an increasing basis over the next three years to improve the quantity and quality of vocational programs;
- particular attention be paid by the Board of Education and the Boston School Committee to the special needs of unserved and underserved groups: linguistic and ethnic minorities, the disadvantaged and those with handicaps;
- The Division of Occupational Education implement, as soon as possible, its plan for hiring two staff members familiar with linguistic minority concerns;
- The Board of Education and the Department of Education consider the creation of a special project group (similar to the Alpha Group focusing on handicapped programs) to establish improved services and programs for linguistic minorities with P.L. 94-482 and other Federal funds, including CETA and Youth Employment and Training funds; and
- The Board of Education develop effective certification procedures for linguistic minority vocational education personnel and work with the training institutions to insure adequate instructional programs.



## MICHIGAN

The topics addressed by the Michigan State Advisory Council for Vocational Education in its eighth annual evaluation report are organized under three headings: background; problems and priorities; and the previous years.

In the section on background the report covers the goals of the Michigan Department of Education; Michigan's delivery system for vocational education; and the Department of Education's allocation and use of resources. The major goals of Michigan's vocational-technical programs relate to the complementary needs of the individual and needs of a highly industrialized state. Among the components of the Michigan delivery system, the report gives a brief statement concerning vocational skill preparation; secondary area vocational programs; programs for the disadvantaged and handicapped; occupational guidance; consumer and homemaking education; placement services; and followup surveys. Recognizing that vocational education programs are more expensive than nonvocational programs, State aid reimbursement provides funds for secondary vocational education on "added cost" basis. Annual and long-range planning is done cooperatively through 53 Career Planning Districts (CEPD) that have been created across the State. The report states that these planning districts using CEPD councils have cooperatively produced a planning and evaluation model which assesses the effectiveness of the state's vocational education delivery system. The financial data included in the report give an estimated allocation of funds for FY 1978 with a breakdown of expenditures of 1976 funds and of 1977 budgeted funds.

The second section of the report includes priorities of the Michigan SACVE for 1976-1977; procedures and outcomes of a public hearing conducted by the Council in Detroit; Council research projects; and Council recommendations. Comments and suggestions of the public hearing are summarized by categories and a copy of the Detroit Public Hearing Opinionnaire with percentage responses is included. The Council states that it has contracted for a study to assess the quality of the State's vocational education delivery system as perceived by the graduating classes of two years of vocational education students, their employers, and their instructors. Findings and recommendations related to this study will appear in the Council's ninth annual report. The Professional Development Committee of the Council has completed a survey of vocational education directors in the State of Michigan with reference to the status of persons in their districts who are teaching under annual authorization. Analysis of information is in progress and results will be included in the ninth annual report. The Council has made a survey of persons interested in vocational education in Michigan with reference to a list of 15 proposed issues/priorities. Results of this survey are included in the eighth annual report, showing percent agreement/

disagreement on a scale of five with a resulting determination of rank according to mean value.

This section of the report concludes with 13 Council recommendations. Six refer to vocational education in Detroit. Six refer to the State plan and of these, three refer to the CETA 5 percent vocational education funds. One advocates state legislation with adequate funding for public school placement services.

The third section gives responses to the Council recommendations of the seventh annual evaluation report and summarizes the Public Hearing Opinionnaires for 1972-77.

The Council recommends in its Fiscal 1977 report that:

- the State Board of Education direct the Vocational-Technical Education Service to explore with the Detroit Board of Education the development and funding of in-service activities in program development, human relations, and school opening orientation for area center staff;
- the State Board of Education direct the Vocational-Technical Education Service to explore with the Detroit Board of Education and other Boards of Education the possibilities of including Detroit students in nearby area vocational centers on a shared-time basis until the opening of the Detroit Public School area vocational centers;
- the State Board of Education direct the Michigan Department of Education to explore with the Detroit Board of Education methods of improving vocational guidance services, eliminating sex stereotyping in vocational education, and improving placement and followup activities.
- the State Board of Education direct the Vocational-Technical Education Service to review the development of the State plan for vocational education with consideration for --
  - describing measurable outcomes for goals and objectives
  - including provisions for operating vocational education programs for low demand operations

- clarifying the theory of career development in the discussion of the implementation of a career development system
- describing specifically how secondary/postsecondary articulation should be implemented;
- the State Board of Education strongly encourage the Detroit Board of Education to develop admission policies for the area vocational centers which will promote maximum use of all facilities in the centers, including the acceptance of non-resident students on a space-available basis;
- the State Board of Education strongly encourage the Detroit Board of Education to continue the involvement of citizens in the development of the area vocational centers and to use representatives of business and industry and labor as fully as possible;
- the State Board of Education strongly encourage the passage of state legislation with adequate funding creating public school placement services;
- the State Board of Education strongly encourage the Detroit Board of Education to widely publicize its activities in the development of the area vocational centers, including the admission policies, transportation arrangements, programs available, and the programs available in the comprehensive high schools;
- the State Board of Education initiate intra- and inter-agency action to insure by Fiscal Year 1977-78, the coordination and integration of the State Plan for Vocational Education and the CETA Vocational Education Plan in order to maximize the effective use of the training dollars;
- the State Board of Education direct the Vocational-Technical Education Service to provide an annual session for the purpose of familiarizing vocational administrators with the State plan for vocational education;
- the State Board of Education include a summary of the CETA 5% Vocational Education Plan as an appendix of the State plan for vocational education;
- the State Board of Education include an annual listing

of the operating Area Vocational Centers in the State plan for vocational education;

- the State Board of Education provide, through the Adult and Continuing Education Service, the opportunity for the State Advisory Council for Vocational Education and the Vocational-Technical Education Service to comment on the CETA 5% Vocational Education State plan during the development of that plan.

## MINNESOTA

The Minnesota State Advisory Council for Vocational Education states that its eighth annual report has been prepared in compliance with P.L. 94-482, The Education Amendments of 1976.

The introductory section of the report describes the Minnesota delivery system for vocational education; lists the vocational education goals for Fiscal Year '77 as stated in the Minnesota State Plan for Vocational Education; and concludes with the MSACVE comments on the state goals. The goals listed are grouped according to educational levels, as follows: elementary, secondary, postsecondary, adult, and multi-level.

The Council report states that the process of evaluating the rate of achievement of goals and objectives of the State plan continues in 1977 to be a difficult and frustrating responsibility. The process and format utilized in stating the annual goals, objectives, and outcomes, does not easily lend itself to a comparative analysis with a means to reach definitive conclusions as to rates of accomplishment or to determine whether the goals and objectives have been achieved at all.

Most of the 1977 goals and objectives were very general statements of admirable intent that do not include any quantifiable elements in terms of anticipated deadline dates or numbers of target populations. Of those goals for which measurable outcomes were specified, the Council determined that approximately 43 percent were partially accomplished. For the remaining 30 percent, the Council was unable to determine any definite rate of achievement or whether they were accomplished at all.

Objectives not fully accomplished at the secondary level pertained predominately to the development and implementation of plans to provide students with a variety of vocational and career exploration options and to make them accessible to a wider range of students, including support services for handicapped students. Although several objectives were not met, significant progress has been made in this area. Apparently, the intended outcomes, as stated, were unrealistic, as it was noted that future projections for these same objectives have been adjusted downward in more recent State plans.

At the postsecondary level, unmet objectives were similar to those at the secondary level, increasing the number of vocational programs in each area vocational-technical institute, and providing each institute with a comprehensive support service program for handicapped and disadvantaged students. The Council feels that the latter is especially important and hopes that within the next fiscal year, the related objectives will arrive at a 100% achievement rate.

Unmet goals at the adult level were those corresponding to providing adult business management education programs for the self-employed, evaluating the effectiveness of adult education programs, strengthening the preparation of adult agriculture teachers, and providing vocational skills training to disadvantaged and handicapped adults, especially to those who are unable to participate in regular programs because of the severity of their disability.

Multi-level objectives which were not fully accomplished related to the dissemination of curriculum and instructional materials to teachers, support of research projects designed to upgrade the quality of the State's overall vocational program, and the development and analysis of innovative educational practices having the potential of enhancing the State's career education program. However, the Council feels that the most significant area of unmet goals at the multi-level are those having to do with the coordination of CETA and vocational education or, more specifically, providing personalized services to CETA clients in vocational programs and developing local level agreements with CETA prime sponsors. This is an area which has tremendous potential in terms of utilizing available resources to their fullest capacity in providing extensive, unduplicated training sources to the needy population which exists.

To summarize, although a number of goals and objectives were not fully achieved, significant progress was made during FY 1977. Based on past experience, the State should develop realistic goals and objectives which can feasibly be attained within the prescribed period of time. While it is admirable to set high goals, readjusting outcomes annually does not provide for accurate long-term planning and original intentions are subverted or lost in the process. With the initiation and utilization of the 5-year state plan, the intent of long-term goals should be better preserved if there is full attainment of annual, closely defined, and measurable objectives.

Section two of the eighth annual report covers the major Council priorities for FY 1977. The primary focus was a program of self-development and education of vocational education issues and related legislative activities. The Council initiated a concerted effort to expand its knowledge of issues and organizations related to vocational education. The report describes channels of communication developed with 15 organizations representing a variety of interests and ranging from the State Legislature and the U.S. Congress through the Minnesota Ad Hoc Task Force on Vocational Education Evaluations.

The Council makes recommendations in three areas and includes a detailed rationale in each area.

The Minnesota State Advisory Council strongly recommends that the State Board of Education give high priority to the revision of the entire planning process leading to the development of the Minnesota State plan for Vocational-Technical Education, with the overall objective of making the new State plan an exemplary planning document with true inputs from local level sources and formal assessments of needs; with a new, understandable, and easy-to-follow format; and with statements of goals and objectives in measurable terms which can be clearly evaluated for progress and achievement.

The MSACVE recommends to the State Board of Education, the Governor's Manpower Office, the Governor's Council on Employment and Training, and the ten CETA prime sponsors that an intensified effort be made to coordinate CETA programs with vocational education programs for the purpose of utilizing existing resources to their fullest capacity, avoiding duplication, preventing inappropriate usage of funds, and reaching the largest possible population in need of a comprehensive, effective delivery system for employment training.

The MSACVE recommends to the State Board of Education that a joint effort be launched with the Advisory Council to encourage the Minnesota State Legislature to reconsider its position on the issue of requiring all students in area vocational-technical institutes to pay tuition or, if this is unsuccessful, to at least establish a comprehensive student financial aid program providing for 100% tuition subsidy when necessary.

## MISSISSIPPI

The eighth annual report of the Mississippi Advisory Council on Vocational Education consists of a narrative account of the current state of vocational education according to the divisions of the federally funded programs. Information is given on enrollments by educational level and by instructional program. Activities are listed concerning programs for the disadvantaged and for the handicapped; for teacher education according to service area; for special programs including research; for exemplary programs; for consumer home economics; and for cooperative and work-study programs.

The report then considers certain questions concerning the State's goals: (a) were they valid in terms of student needs and employment opportunities; (b) were they sufficiently comprehensive in terms of specific population groups; (c) were they related appropriately to other manpower developments in the State? The report states that a need continues to exist for teachers and guidance counselors to assist students to find employment in the fields for which they received training. It is also stated that enrollment trends for various program services reflect adjustments made in vocational education programming to meet the needs of the people in Mississippi. Tables of data are given for vocational education enrollments by educational level and by instructional program, with completions and job placements.

The final section of the report considers questions related to the effectiveness with which people and their needs are served. The Council concludes: that adequate data were available for good planning; that continued cooperative efforts are necessary between the Division of Vocational Education and the Governor's Office of Education and Training; and that current efforts toward articulating, broadening, and improving curricula should continue.

The nine recommendations of the State Advisory Council are listed as given in the FY 1976 annual report, with the response of the Division of Vocational-Technical Education.

The Council recommendations of the eighth annual report are as follows:

- that continued encouragement be given to local educational agencies to involve instructors more closely in budget preparation and that categorical budgets be developed for each department and program, and be disseminated to the individual instructor;
- that encouragement be given all local educational agencies that do not have a vocational center, to designate a staff member to coordinate program planning and



evaluation, as well as coordinate all reporting to the Division of Vocational-Technical Education;

- that continued emphasis be placed on youth organizations, stressing this activity as an active and integral part of each vocational program throughout the state;
- that an all-out effort be made to make each local educational agency aware of the fact that general advisory and craft committees must be established, functional and utilized;
- that greater emphasis be placed on encouraging local educational agencies to establish a long-range budgetary procedure for the procurement and upgrading of essential small tools and equipment in all vocational programs;
- that continued emphasis be placed on articulation and coordination of vocational education between secondary and postsecondary schools;
- that each supervisor via conferences, workshops, and/or visits with their respective instructors, stress the importance of well planned, well organized, lesson planning for each of their areas;
- that consideration be given to insisting that vocational teachers and vocational guidance personnel continue their coordinated efforts in assisting students in finding employment in fields for which they received training;
- that consideration be given to encouraging all local educational agencies offering vocational-technical education to develop and/or expand faculty in-service training so that new, as well as old, faculty members can engage in a continuous process of upgrading and understanding of the educational process;
- that more emphasis be placed on the significance of a well planned, well organized public relations program by local educational agencies.

## MISSOURI

The following summary is taken from the eighth annual evaluation report of the Missouri Advisory Council on Vocational Education.

Missouri still faces some problems in the collection, analysis and use of the data in the overall management information system employed in vocational education. While some positive change has taken place, it appears that there is a long way to go before the system becomes fully operational. It is important to note that some local district data is not in the system because of late reporting and errors in reporting on which a validity check was either not run or not followed up. An attempt was made to be somewhat more responsive to the information needs of at least one user -- the Council -- during the past year. Much work needs to be done to make this a useful system, dynamic in nature, rather than just a data collection agency for Federal and State reports.

The new law (P.L. 94-482) passed by the 94th Congress which extends and revises the Vocational Education Act of 1963, gives as its purpose:

"Sec. 101. It is the purpose of this part to assist States in improving planning in the use of all resources available to them for vocational education and manpower training by involving a wide range of agencies and individuals concerned with education and training within the State in the development of the vocational education plans."

In short the emphasis has been placed on planning. The basic problem with planning goes back to data and information. Good planning must begin with the establishment of goals and objectives based upon accurate data and information. Timing is very critical in planning and this dictates that the analysis of data must proceed on an orderly schedule. The State plan again appears as only an administrative document rather than a useful tool in aiding local planners to gain information useful in assisting manpower needs, vocational education needs, relative costs and excess costs for planning programs for the coming year. The time is not synchronized with the needs of users generally.

The process of evaluation of local vocational education programs by the State Department of Elementary and Secondary Education appears to be working. Some phases of the evaluation need to be strengthened but the overall impact appears good. The evaluation at the comprehensive high school is not as thorough or complete as that at the Area Vocational Schools, but is functional and useful. The impact of the evaluations could be maximized if all reports were synthesized in some annual report at the State level. Presently,

each individual institution evaluated is supplied with a copy of the final report and given an appropriate period of time to respond to the recommendations for improvement. Following this, a year for implementing the changes is established after which time an interview is scheduled between the administrators of the area school and the State staff evaluators to check on the progress. It is now time, once again, to evaluate the evaluation process so that continued good programming can and will result, and more Missouri students will be better served in vocational education.

A closer look at what Missouri employers perceive about the vocational education system in the State was taken. This was using the data supplied by the study conducted by the Governor's Conference on Education, the vocational education portion. Vocational education appears to be progressing well in the eyes of the people who are putting the graduates to work. The method of cooperative education was encouraged by many employers surveyed.

Looking at urban needs in vocational education, especially in the two largest cities in the State, provided an insight into many facets of the programs which were working well and those which need attention. Many agencies have a great use for labor market information and attempt to get this on their own. This should become a coordinated effort to insure consistency and avoid duplication. A need for more programming became evident as the study concluded because of the interests and needs of citizens in these areas.

Also coming out of the committee from the Governor's Conference was the idea for requesting a change in the law creating special school districts. The change requested could allow voters to decide on the type of services they desire to include in a special district, for the handicapped, for vocational-technical instructions, or for both.

Local advisory committees in vocational education were again scrutinized in a special study completed at the University of Missouri. This updates previous studies and findings relative to the structure, function and use of these groups at the local level.

There is a difference in the perception of administrators and lay members of local vocational advisory committees as to their effectiveness. The area school committee and the comprehensive high school committee are more nearly alike in their "perceived effectiveness" than was the group from the community/junior colleges. No real evaluation model for measuring the effectiveness exists at the present time. Perceptions are important but do not give the whole story.

Public hearings were held jointly with the State Department of Elementary and Secondary Education in eight locations across the State during the past year. Many different ideas were expressed and reported. These are on file in the Council office and were considered by the Council at various meetings throughout the year. The results have been categorized and the expressions recorded in a brief report.

This report also deals with a look at vocational education in the comprehensive high schools across the State. This study was undertaken to gain data and analyze it to determine the percentage of vocational enrollment by grade, by sex, by program, and to look at the reimbursement for these programs. The participation at Area Vocational Schools was also determined.

The Council recommends that:

- a more intensive review of the monetary procedures and practices used in vocational education be given attention in all evaluations conducted by the State Department of Elementary and Secondary Education;
- the State Department of Elementary and Secondary Education evaluation of vocational education programs should address itself to the total vocational program offerings in the schools and check the congruence between State goals and objectives and institutional goals and objectives;
- the State Department of Elementary and Secondary Education provide incentives to encourage more direct contact between vocational schools and employers;
- the method of cooperative education be extended to at least 3500 more students during the school year 1978-79 than during 1977-78;
- an intensive coordinated labor market survey be conducted by agencies involved in training vocational graduates for placement in the two largest urban areas of the State;
- Vocational programs in the urban areas be extended to more adequately provide for the needs and interests of urban residents and that these expansions reflect labor market needs;
- the State Department of Elementary and Secondary Education

develop a model for evaluating the effectiveness of local vocational advisory committees;

- the State Department of Elementary and Secondary Education require a count of slots available and applicants for each slot in all programs of vocational education in a reimbursed program;
- legislation be enacted which would permit school districts to provide for the establishment of either a special school district for education of the handicapped, or a vocational-technical education district, or a district for both types of education depending upon the preference of the voters;
- the entire Missouri Occupational Training Information System be re-evaluated as to the usefulness and advisability of continuance as it presently exists and that a report be given on this by the time the State Plan for Vocational Education is sent in for approval to both the State Board of Education and the State Advisory Council on Vocational Education.

## MONTANA

The Montana State Advisory Council on Vocational Education devotes its eighth annual evaluation report to the results of a survey of local advisory councils.

A questionnaire was sent to 367 local advisory council members, 256 school board members, and 42 school administrators. The questionnaire consisted of 29 statements about the characteristics, the activities, and the environment of local advisory councils. The response rate was 57 percent for administrators, 18 percent for school board members, and 3 percent for local advisory council members.

An analysis of the responses of the three groups surveyed in the questionnaire resulted in the following conclusions and recommendations.

### Conclusions and Recommendations

Evidence from this survey indicates that a substantial number of the members of vocational education advisory committees in the State may be unsure or uninformed about what is expected of such committees and how they can operate most effectively. There is also evidence that there may be a fairly wide variation in the degree to which advisory committees are utilized by those who appoint them, and the extent to which the knowledge and experience represented by their membership is brought to bear on the problems of vocational education. This indicates a need for bringing up the level of the less effective committees to that of the ones operating most successfully. Assistance might be provided by the Board of Public Education, the Office of Public Instruction, the State Vocational Education Advisory Council, or all three, in the form of suggestions and guidelines for the committees based on successful experiences of others. It could also take the form of assistance to school boards and administrators on ways of making the best use of advisory committees in planning and carrying on their vocational education programs.

It was pointed out that on a number of statements in this survey, discrepancies appeared between the responses of committee members and administrators and board members. In some cases, this indicates differences of opinions which might be resolved by better communication between the groups. In other cases, however, the differences were in knowledge of matters of fact, some of which had to do with activities of the advisory committees. In cases where administrators and boards of education are not well informed about what their advisory committees are doing, then perhaps time should be allotted more frequently for advisory committees to report to school boards.

There was a substantial difference between what the respondents regarded as important or desirable, and what they reported actually happens. It is not enough to merely point out the obvious and urge them to do better. It may be that the gap between "what is" and what is felt "should be" can be narrowed by first calling attention to the discrepancy and learning the causes; and second, by sharing of suggestions on how effective advisory committees are operating and the factors that make them successful.

It has been suggested that indications from this survey as well as other evidence leads us to believe that some advisory committees are being all but ignored once they have been created. Even in the relatively small sample reached by this survey, there were those who spoke of committees that seldom met, of advisory councils with no advice asked or given and council members unaware of their appointment. As specified in P.L. 94-482, the membership of local advisory councils is designed to include a range of familiarity and experience in the "world of work" found in only rare occasions in administrative staffs and district school boards. It is hardly necessary to point out that when advisory councils are not utilized to their full potential, there is great loss of the benefits of experience and expertise. The report concludes with suggestions for implementing the recommendations:

- Provide workshops for teaching administrators, teachers, board and committee members the skills needed to develop and utilize advisory committees.
- Conduct training for consultants in the Office of Public instruction for the development of skills to assist schools and communities in establishing functional advisory committees.
- Develop guidelines and handbooks for use by administrators, teachers, board and committee members on the day-to-day function of the advisory committee.
- Utilize the Office of Public Instruction publications such as "Montana Schools" and "Briefs" to carry ideas, suggestions, and other information on advisory committees.
- Involve other organizations through their newsletters to carry the story about the advisory committees. Such groups would include the Chamber of Commerce, labor unions, business associations, farm organizations, education associations, and parent-student groups.

- Include local advisory committee members in the annual on-site evaluations of vocational education programs.
- Utilize the expertise of the existing Area Employment and Training Advisory Boards operating under CETA (Comprehensive Employment and Training Act).
- Recognize committee members with appropriate certificates when appointed and at termination of their service to the school.



## NEBRASKA

The Nebraska State Advisory Council for Vocational Education in its eighth annual evaluation report notes the following critical problems faced by the state: the disproportionately heavy demands on local education agencies in financing vocational education; the shortage of vocational teachers; the increasing frustration with the new reporting requirements and data demands of Federal legislation including added responsibilities for evaluation. The advisory council is also mandated to promote the establishment of local advisory councils and to provide technical assistance.

The second section of the report, "Vocational Priorities and Problems," gives a brief review of each topic and includes recommendations for action. A tabulation is given of vocational course offerings in five correctional institutions with recommendations emphasizing the determination of individual needs and the adaptation of programs to meet these needs, utilizing existing educational agencies wherever possible. Funding should be provided from both State and Federal resources.

The new legislation includes a much stronger mandate for local advisory councils for vocational education. Council recommendations are directed towards procedures for technical assistance; emphasis in vocational teacher training institutions on competencies related to utilization of advisory councils; and male/female membership which reflects the composition of the labor force.

Recommendations for improvement in programs for vocational adult programs include: emphasis in teacher training institutions on competencies needed in teaching adults; utilization without unnecessary duplication of existing secondary and postsecondary vocational education programs; and development of vocational adult programs in correctional institutions.

The general program for state aid to secondary education should be re-examined and changes made to provide incentives for the expansion of vocational program offerings and to relieve the disproportionately heavy load now borne by local property taxes.

Vocational counseling, which has been the subject of recommendations in several previous reports is again addressed. The Council recommends top priority for full utilization of Federal incentive funds to develop counseling services which meet student needs in understanding of work patterns, initial job entry procedures, and job advancement.

Section Three addresses the problem of vocational sex bias and sex stereotyping and makes recommendations for sex equity in promotional literature, and in program enrollment and procedures.

This section also includes recommendations for improvement of linkage between vocational education and CETA, and for reducing youth unemployment.

Section Four includes the constructive reactions of the State Board for Vocational Education to seven previous recommendations of the Council. These include: providing vocational programs on an inter-district basis; providing vocational programs for secondary students through technical community colleges; increased participation in vocational student organizations; improved communication between vocational education and CETA; improving the vocational planning process; criteria for approval of postsecondary vocational instructors; and annual systematic development of vocational curricula materials.

The development procedures of the FY 1978 State plan included three state public hearings and four meetings of the ten-person State Plan Committee, one of which was a full-day joint meeting with the Nebraska State Advisory Council on Vocational Education. The outcome was an increase in the value of the State plan as a true planning document.

The report includes as appendix material a comparison of vocational education enrollments from 1972 to 1975 and a breakdown of expenditures for FY 1976 by educational level, by section of the vocational education legislation, and by source-- Federal/State/local. There is also a breakdown of FY 1976 CETA five-percent funds by program and prime sponsor area.

## NEVADA

The Nevada State Advisory Council for Vocational-Technical Education submitted an executive summary of its eighth annual evaluation report. The complete report is on file with the State Board of Education.

According to the executive summary, the eighth annual evaluation report deals with an assessment of 12 representative rural high schools representing ten school districts and four enrollment categories. The assessment is based on questionnaires completed by school administrators, teachers, students, and parents.

Principals report that office occupations, home economics, and agriculture are the most commonly offered courses and that lack of facilities, money, and equipment are the major problems in maintaining vocational education programs.

Of the 57 vocational teachers reporting, 3 used local vocational advisory councils extensively; seven seldom used them; and 43 either did not use them or did not respond to the question.

Generally, teachers favored improved communication between the Council and the schools; stressed the need for improving and upgrading of teacher certification and inservice training; and inadequacy of materials and equipment.

Student responses were directed towards better preparation for employment after high school. The students indicated major needs for the following: more courses and classes; more materials, equipment, and facilities, including updating of some; more on-the-job training and work study programs; more realistic class work on "What to do when I leave school;" more career information; more vocational, academic, and personal counseling.

Questionnaires from parents indicated that a bare majority thought the schools were doing a good job in preparing their children for citizenship and higher education; less than half felt the schools are doing a good job in preparing students to enter the world of work.

A listing of occupational course offerings at the four campus sites of the Nevada Community College Division concludes the report summary.

## NEW HAMPSHIRE

The eighth annual evaluation report of the New Hampshire Advisory Council for Vocational-Technical Education includes: general comments; recommendations and comments for 1977; and review of 1976 recommendations.

### General Comments

The Advisory Council is concerned about the instability in the staffing of personnel in the Division of Vocational-Technical Education. We should like to commend the dedicated, long-time members of the staff who have kept the Division operating under difficult conditions.

The Advisory Council is grateful for the cooperation of the Voc- Tech Divisions for furnishing us with data for this report. The data that was submitted to the Committee provided detailed and accurate accounting of vocational education activities as they related to the State plan.

The Advisory Council wishes to commend the cities of Portsmouth and Laconia for taking the initiative for providing vocational education by constructing vocational centers with local funds. It is our hope that consideration of this effort will be given to these cities when allocating State construction funds.

It is gratifying to see the continuing growth in the number of vocational programs and the number of students served within the State.

We are encouraged to see an increasing use of vocational facilities for adult education.

A marked improvement in communication between the Advisory Council and Secondary and Postsecondary Directors of Vocational Education has been evident this year.

### Recommendations

Our primary recommendation is that the two divisions responsible for the direction of vocational-technical education be placed under one head.

Positions that become vacant should be filled promptly.

We recommend that a determination be made as to the reasons for the numerous resignations of key administrators, which results in a lack of effective management.

Assurance should be given that the regional center vocational directors be directly responsible for the administration of the vocational centers.

We strongly recommend that ~~funding~~ for the completion of the additional centers be accelerated.

As recommended in the 1976 Annual Report, we urge a continuation of the site selection process used for the selection of previous centers.

We recommend that the work begun in the articulation project be continued and expanded to include all programs which are offered at both the secondary and postsecondary levels.

We recommend that, since daytime enrollments in the postsecondary have stabilized and the forecast for total school-age children is decreasing within the state, capital funding for new facility construction at the postsecondary level be deferred.

We recommend that the co-op programs at the Nashua Vocational-Technical College be reinstated as far as possible with existing funds.

We strongly recommend that action be taken to insure a more substantial funding of on-going vocational programs. It is further recommended that consultants reconsider the value of withholding substantial sums of vocational program money in order to support inservice teacher development, such as costly work-shops.

Because of the growing number of technically oriented industries locating in the State, it is recommended that the area of office occupations adapt and supplement its syllabi to meet the needs of these types of businesses.

We strongly recommend that new programs should be funded only at the same level as ongoing programs.

It is recommended that the Division take a leadership role in re-activating the VICA chapters that have ceased to function and that encouragement and assistance be given to provide for the establishment of new chapters.

We recommend that more emphasis be placed on vocationally related courses for participants in CETA programs.

We recommend that the Division Chiefs make every effort to bring about an extension of the waiver of the 50-50 match requirement presently in effect.

It is further recommended that an effort be made to provide the required matching funds from State rather than local sources to insure continuation of programs and services.

We recommend that cooperative programs be expanded because of the great value these programs serve in bridging the gap between school and job.

The Council finds that significant positive action has taken place on only three of the nine recommendations of the 1976 report.

## NEW JERSEY

The eighth annual evaluation report of the New Jersey Advisory Council on Vocational Education is organized in seven sections: Council's 1977 recommendations; summary of consultants' reports; consultant report on governance of the manpower training delivery system; consultant report on manpower and training delivery systems in New Jersey, Phase II; evaluation of State plan objectives; Council's 1975 recommendation on the development of an evaluation mechanism; status of 1976 evaluation report recommendations.

### Part I. The Council's 1977 recommendations.

It is recommended that Council continue to be involved with any Governor's Task Force activity organized to address itself to the problem of coordination of manpower training services.

It is recommended that there is identified, on a State level, a single body, either existing or to be created or designated, which will have the authority to resolve issues and make policy regarding the coordination and delivery of manpower training services.

It is recommended that the State Education Coordinating Council address itself to the development of a policy position on coordination of manpower training and delivery within the education sector as an input to the activity to be carried out under Recommendation #2. It is further recommended that the position of Executive Director of the Education Coordinating Council be filled in the near future in order to more effectively carry out the mandated function of the ECC.

It is recommended that the State Board of Education identify a committee of State Board members which will consider, at length, matters relating to Vocational and Occupational Education. This Committee should also serve to stimulate closer working relationships with other and major deliverers of vocational training, in order that a coordination of services might be effected.

It is recommended that the Task Force that is identified in Recommendation #2 consider the recommendations of the Education Advancement Project and other agencies funded by the State Manpower Services Council. The Task Force should consider the following recommendations of the Education Advancement Project:

- increased consultation among deliverers of manpower

services, expanded membership of councils, boards and other groups involved in providing manpower services;

- better promulgation of information to potential clients of availability of services;
- the development of better base line data by services providers;
- broadened access through removing restrictive limitation on the availability of training programs;
- the provision of technical assistance to services providers through a state agency;
- continued research to evaluate program effectiveness;
- innovative approaches to the learning situation and cooperative effects by all segments of the manpower training delivery systems in seeking funds to expand the utilization of education opportunities to New Jersey workers.

Parts II, III, and IV consist of reports on Manpower Training and Delivery Systems in New Jersey done by consultants under contract with the Council. As one result of these surveys the Council presented a position paper with recommendations to the Governor. A planning task force to develop a strong state policy of coordination of the various manpower services promises to be at least the first step towards an effective manpower delivery system. The Council expects to continue to function as a resource group providing direction for the activities of the task force.

Part V is an evaluation of State plan objectives. The Council expresses continued concern for the development of a consistent evaluation mechanism that would produce a broader perspective of how the Department of Education has achieved its objectives for vocational education in New Jersey. The report gives an analysis of State and Federal funding objectives in terms of planned; revised planned, and actual expenditures for FY 1977. It is the opinion of the Council that the statistical data do not appropriately or adequately measure the effectiveness of the vocational education programs. They rather tend to evaluate the effectiveness of the Division of Vocational Education in estimating its budget. A major difficulty arises from the fact that planned expenditures are determined prior to the establishment of either the State or Federal budget.

The analysis of the attainment of enrollment objectives by educational



level and program category presents difficulties caused by the tendency of the U.S. Office of Education to change definitions.

The Council re-emphasizes its position that the absence of qualitative data, which more appropriately reflect the effectiveness of vocational programs, makes it impossible to come to any valid conclusion concerning the effectiveness of vocational education in the State as a whole.

Part VI reviews the Council's 1975 recommendation on the development of an evaluation mechanism. In response to this recommendation the Division of Vocational Education established an Evaluation task force for which the Council agreed to provide consultant and financial assistance. As a result of preliminary activities of the task force the Division is developing an evaluation plan that will include both process and product elements with consideration for both qualitative and quantitative aspects of a particular program. The evaluation will progress in two phases. Phase one 1977-1979, is an interim process; phase two a long-range plan which blends the requirements of P.L. 94-482 and those of the New Jersey Public Education Law of 1975. The preliminary work for phase two began July 1, 1977. The Council will continue to be involved in monitoring the developmental process.

## NEW MEXICO

The eighth annual evaluation report of the New Mexico Advisory Council on Vocational-Technical Education includes: a statistical overview covering students, teachers, administrators, and expenditures; comments on special areas of concern with relevant Council recommendations; comments on the response of the State Board of Education to recommendations presented in last year's report; and major Council activities during FY 1977.

The recommendations covering special areas of concern are as follows:

### Youth Employment

- that the Division make every effort to assist in acquainting LEAs with the opportunities afforded for youth employment under Title IV of the amended CETA Act;
- that the Division work out appropriate arrangements with the State CETA Division whereby a training component is designed for CETA Title IV youth employees which will complement their specific work experience and provide them with a broader technical/vocational background, enabling them to move laterally within a general technical/vocational job cluster.

### Guidance and Counseling

- that the State, within existing law, set more specific policy directing the activities of counselors toward devoting the majority of their time to working with students' career objectives;
- that the student-counselor ratio be brought down to a realistic level, where counselors can realistically expect to work with individual students and their needs;
- that upon initiating such policies, steps be taken to monitor and follow-up on what real guidance and counseling services are provided to students, with a view towards ascertaining what proportion of their time counselors spend in counseling and providing necessary services to students.

### Bilingual Vocational Training

- that the Division assess the need to develop bilingual vocational programs;
- that, where appropriate, the Division provide technical assistance to LEAs in applying for monies under Part F

(Bilingual Vocational Funds) of the Education Amendments of 1976 in order to provide bilingual vocational education;

- that efforts be made to develop a comprehensive plan to address in the future, the needs of students with limited English-speaking ability wherever appropriate.

#### Industry and Vocational Education

- that the Division work along with the Council in developing a statewide effort where educators in the field are encouraged to establish formal contacts with employers, especially in the urban areas.

#### High School Vocational Programs

- that the current vocational cost analysis study be continued and expanded in order to obtain the most accurate analysis of the cost of vocational education programs;
- that based on the results of this study, steps be taken to obtain the necessary financial support for secondary vocational education through whatever means the Board of Education deems appropriate.

#### Basic Economics

- that the Board study the feasibility to include in the State's Minimum Standards a provision where instruction in basic economics is incorporated into all curricula related to vocational education;
- that the Division develop some basic materials in economics instruction which can be incorporated into the vocational education curriculum;
- that the Division, during its annual evaluation visits, provide technical assistance to the field instructor on ways and means to provide meaningful instruction in basic economics.

Among Council activities included in the FY 1977 report are: participation with the State Division of Vocational Education in on-site evaluation on one-third of the state's high schools with vocational education programs and all of the postsecondary vocational schools; technical assistance to local advisory committees; public relations efforts for the promotion of vocational education; manpower coordination; and participation in the State planning process.

## NEW YORK

The Council has over the past several years devoted much of its attention to assisting in the development of the State Plan for Occupational Education; evaluating career education activities; and conducting an annual conference for members of local advisory councils. This year the Council also focused on sex fairness in occupational education, an issue of national significance, and teacher preparation, an area which is now under intense study in New York State. These are the Council's major recommendations.

### State Plan\*

The Council recommends to the State Education Department (SED)/ Board of Regents that:

- The Objectives, Measurement of Results, and Criteria in the plan be made clear and measurable.
- The formula for distributing funds among the 13 occupational regions take into account the higher cost of living in downstate and urban areas.
- Related instruction for registered apprentices be provided on an equitable and uniform basis throughout the State.
- The issues of serving more physically and emotionally handicapped youth, providing adequate funds for child care and work study, improving the method of calculating the dropout rate, and revising the management information system be addressed in the plan.

### Career Education\*

Based upon a Council-funded evaluation of career education, the Council recommends that the SED/Board of Regents:

- Formally associate themselves with the 75 currently operating local school district career education projects so that the SED/Regents are recognized as the center of the State's career education efforts.
- Sponsor career education workshops for staff in the experienced districts and continue staff development within the SED support teams.
- Fully implement the State Plan for Career Education by appointing a full-time SED career education coordinator and a dissemination coordinator, and designating a career

education budget of \$300,000 from Federal and State sources.

- Standardize instructional objectives; gather evidence about student performance; and work closely with this Council and the Career Education Council.

#### Sex Fairness\*

The Council recommends that the SED/Board of Regents:

- Emphasize the need for sex-fair career education and pre-vocational programs.
- Provide adequate staff to perform the many functions required by the VEA; more than the current one professional staff person will be required.
- Make adequate provisions for child care in the State plan.
- Conduct surveys; collect more data on faculty, administrators industrial arts, and home economics; scrutinize all SED publications; and clearly outline LEA responsibilities.

#### Teacher Certification\*

The NYS Education Commissioner's Task Force on Teacher Education and Certification issued a report designed to improve the preparation of teachers and school administrators. With respect to this report, the Council supports the basic concept of teaching as a profession and recommends that:

- The duties of the Professional Practices Board clearly reflect its advisory role and the Board's composition allow for a broader representation of education interests.
- The feasibility and cost of licensing examinations and the internship, methods of ensuring quality instruction in teacher preparation programs; and methods of maintaining high teacher competence be studied further.
- Licensure requirements for occupational educators be clarified and kept flexible, and licensure of continuing education instructors be considered.
- Decision on the applicability of licensure requirements to non-public schools be delayed until they are represented on the Task Force.

### Local Council Conference\*

The participants at the conference for members of local advisory councils recommended that the SED/Board of Regents:

- Collect data on successful councils and formulate recommendations for a "model council."
- Give local councils a chance to review the formula for distributing VEA funds prior to Regents' approval.
- Provide information on regional planning meetings and coordinators.)
- Include a member of the New York City Advisory Council on the State Council.

\*Complete reports are available free from the Council Office.

## NORTH CAROLINA

The North Carolina State Advisory Council on Vocational Education calls its eighth annual evaluation report A Call to Action and considers it to be a logical and timely extension of last year's report, A Call for Policy.

The Council recognizes that while the State Board and the State staff in the Department of Public Education have obviously given serious consideration to the development of policy, an overall statewide policy for vocational education does not yet exist.

The FY 1977 recommendation of SACVE to the State Board of Education is, therefore, as follows:

- coordinate the further development of the initially proposed vocational education policy into an overall statewide policy on vocational education;
- involve other constituent groups in developing an overall statewide policy on vocational education;
- prepare a comprehensive plan for vocational education that delineates the respective roles of all constituent groups in implementing an overall statewide policy on vocational education.

A detailed analysis of recent State and Federal legislation supports the Council's recommendation for the involvement of other constituent groups and for coordination of their input into a comprehensive plan for the implementation of an overall statewide policy.

Overall policy development involving other constituent groups might well be able to address the following timely and important questions:

- How are the financial resources of the Appalachian Regional Commission and the Coastal Plains Commission accounted for in the overall policy for providing needed vocational education facilities, as well as other special resources which may be available through the Public Works and Economic Development Act Amendments of 1976?
- How aware are local prime sponsors of present secondary and postsecondary vocational programs in their geographic area?
- What administrative procedures have been developed to accommodate uncertainties (such as scheduling difficulties) that originate in the different planning and funding cycles under CETA and vocational education?

- ▽
- What is the total contribution of private schools (especially at the postsecondary level) toward the manpower/training needs of North Carolina?
  - How are other state agencies involved in the total vocational education delivery system, such as the N.C. Department of Human Resources, the N.C. Department of Commerce, and the N.C. Department of Corrections?
  - How will the vocational education policy provide for the needs of handicapped people of the State?

The Council asks the State Board of Education to assume greater leadership in the development of a consistent, coordinated approach to meeting the vocational education and manpower needs of our State, through comprehensive interagency planning that is firmly based on overall statewide vocational education policy.



## NORTH DAKOTA

The eighth annual evaluation report of the North Dakota State Advisory Council for Vocational Education represents the work of five assessment committees. These committees reviewed and analyzed the goals and objectives of the State plan and evaluated the outcomes for FY 1977. The report also includes an assessment of the action taken by the State Board of Education in response to the 1976 SACVE recommendations; an analysis of significant developments with respect to five areas of special concern at the national level; and a review of the utilization of funds in selected areas.

Goals 1 through 6 of the State plan refer to student enrollments in vocational education by education level and by program; to vocational education services for persons with special needs; to consumer and homemaking vocational education; and to vocational guidance and counseling. Assessment committee 1 presented data on outcomes sought and actual attainment in FY 1977 and made the following evaluative comments:

- At the secondary level the outcome sought and degree of attainment have been satisfactory;
- While progress has been made in the establishment of mobile units which are serving some small schools, the needs of students in small schools remains a challenge;
- Present efforts should be continued to coordinate activities with all agencies (government, industry, and business) which compile manpower needs information to determine potential job placement possibilities;
- The availability of qualified instructors for adult vocational education continues to be a problem;
- A concentrated effort is needed to meet the growing vocational education needs of the handicapped and disadvantaged.
- Encouragement should be given to increase the number of counselors participating in vocational guidance workshops.

Goals 7 through 12 of the State plan refer to research, demonstration and curriculum development; personnel development; career education; industrial arts; CETA; and administration and supervision. Some illustrative evaluative comments developed by Assessment Committee 2 are as follows:

- More emphasis must be placed on the recruitment and retention of participants in certain pre-service teacher training offerings.

- The objectives for career education at the elementary and secondary levels were substantially met or exceeded;
- CETA goals were substantially attained.

Assessment Committee 3 reviewed the recommendations of the 1976 annual report giving for each of the six recommendations a description of the action or response of the State Board for Vocational Education and the concluding Council response. The action on Council recommendation has in general been positive to the extent possible at this time. The vocational education cost effectiveness system is in need of revisions which will reflect all state and local costs.

Assessment Committee 4 reviewed five vocational education areas with respect to national implications. The five special areas are: early learners; public relations planning; rural manpower development; cooperative education; and local advisory committees. For each area the review included the following: most significant developments in North Dakota since 1970; present areas of concern; and related current State Board for Vocational Education goals and objectives.

Assessment Committee 5 reviewed how vocational education funds are being utilized in the following areas: guidance and counseling services; programs and priorities; and formulas for allocation of funds. These three topic areas were identified among others as being of paramount importance in North Dakota at this time. For each area the review was designed to accomplish a twofold purpose: to point out the impact that the selected area of study had made in the past and its status at the present time; and to identify possible courses of action based on emerging needs and to outline general considerations and alternatives for the State Board of Vocational Education to examine in determining future goals and policies.

The report concludes with the following eight recommendations for FY 1978.

The North Dakota SACVE recommends:

- that the State Board for Vocational Education utilize the flexibility it has to determine the most effective method to use State funds in meeting unique vocational education needs as they emerge and are identified in North Dakota;
- that the State Board for Vocational Education implement

vocational education opportunities to out-of-school youth and adults in North Dakota;

- that the State Board for Vocational Education develop a master plan that will expand and strengthen professional development for vocational educators through preservice and inservice activities;
- that the State Board for Vocational Education encourage local school districts to increase the availability of vocational education facilities on an extended school year for vocational training and occupational exploration opportunities for youth and adults.
- that the State Board for Vocational Education increase its support of vocational guidance and counseling services to encourage secondary and postsecondary institutions to improve and expand these services to youth and adults;
- that the State Board for Vocational Education determine the effectiveness and adequacy of technical assistance provided by the State staff for vocational education services;
- that the State Board for Vocational Education develop an effective statewide placement delivery system in cooperation with the local educational agencies and Job Services of North Dakota for both secondary and postsecondary vocational programs;
- that the State Board for Vocational Education review its programs to ascertain, through a statistically valid sampling, the rate of job placement with five years of separation from the program and to ascertain which of the completers sampled initially entered the program for the purpose of specific job placement and which entered for the purpose of career exploration.

## OHIO

The eighth annual report of the Ohio Advisory Council for Vocational Education is based upon evaluation activities of the Council during fiscal year 1977.

The report which is entitled, Focus on the Future begins with seven recommendations to the State Board of Education for FY 78. These include: improved local inservice education opportunities; a funding formula which continues second year support of a two-year program; programs fostering better understanding of the inter-relatedness of career education, general education, and vocational education; more advisory assistance from local craft workers and contractors; re-evaluation of the established policies and guidelines for Guided Learning Experiences; continuation and expansion of high quality practical nursing programs; and encouragement of legislation requiring vocational educator representation on agencies and boards involved with vocational education. This section also included the response of the Division of Vocational Education and the State Board of Education to the recommendations of the Council for FY 1977.

In the second section of the eighth annual report the Council commends the Department of Education and the Division of Vocational Education for the response to the 1976 Federal legislation, their outstanding Local Educational Area Planning (LEAP) program; and their distinguished record of vocational graduate job placement. Summary data on 13 objectives from the five-year and annual State plans show actual outcomes for 1976 and projected figures for 1978 and 1982. Analysis shows that through LEAP, local and state leaders have achieved the following goals: to have eligible recipients plan by the same objectives identified in the State plan for Vocational Education; to have eligible recipients make reasonable projection of services to people over a five-year period; to utilize manpower and student population trends in the development of local plans; to analyze recent historical data and project future needs by means of computer print-outs; to provide a communication link with all vocational agencies, schools, and groups for coordinated planning in their communities.

Section three gives a detailed break-down of actual expenditures of Federal, State, and local funds by program or purpose for FY 1976 and of projected funding for 1978 and 1982. Total expenditures for Federally supported programs in 1976 show that every Federal dollar was matched by \$6.15 from State and local funds.

Section four gives data on the Ohio Career Development Program showing growth in terms of total students involved from 7,027 in an individually funded project in 1970 to 196,871 in 45 school districts in 1977. The Ohio Advisory Council for Vocational Education has assumed advisory council responsibilities for career

education in Ohio and considers it a vital part of Ohio's total education program.

Section five gives highlights of and responses to issues emerging from annual public meetings held by the Council during 1973 to 1977. The Council finds that these meetings do fulfill their purpose of keeping vocational education responsive to the public it serves.

The concluding sections note continuing Council concerns and their relevance to the 1976 Federal legislation which expands the role of State Advisory Councils in the areas of planning, coordination with the State Manpower Services Council and in providing technical assistance to local advisory councils. Among these concerns are: the need for additional funding and other resources to ensure that vocational education in Ohio will be able to plan wisely for the impact of our changing energy picture; the inadequacy of existing technology to forecast job opportunities during the rapid changes of the next few years; the lack of resources to provide specially designed programs for all disadvantaged and handicapped; the inadequacy of our knowledge concerning all factors of the dropout problem; the need for more effective inservice teacher education; and the continuing need for relevancy in programs, flexibility in curriculum specifications, and specific funding for vocational education equipment up-date and repair.

## OKLAHOMA

The eighth annual report of the Oklahoma Advisory Council on Vocational-Technical Education includes: major Council activities; recommendations; commendations; a statement of the reactions of the State Department of Vocational Education to Council recommendations for 1976; the background, findings, and recommendations of a research project on the State's two major urban centers, Oklahoma City and Tulsa; and summary data on State programs and services in vocational education.

The Council recommends that:

- the State Department and State Regents for Higher Education jointly conduct a survey to determine if there is a need for a statewide veterinarians' technical program and, if such a need is found to exist, that a suitable program for such training be established at a feasible location or locations;
- the State Department without additional delay implement recommendations of the 1976 Task Force on Public Information with emphasis on youth accomplishments in vocational program divisions, with more on-site staff visitations to news media in the State for better coverage of the vocational message;
- the State Department's regional administrators seek to conduct briefing sessions for local school administrators, and all their classroom teachers, for orientation on vocational education; orientation programs be sought at regular or professional improvement meetings of the guidance and counseling association; exemplary type hands-on workshops be held at area schools for counselors representing sending schools, on any basis that scheduling permits;
- the State Department, through program division supervisors, regional administrators and/or public information staff, secure time on Career Day programs or any other available assembly at major high schools, to present visuals and commentary on occupational training; inclusion of appearances by outstanding vocational youth groups' representatives at Career Day activities -- in addition to the rather standardized Vocational Education Week -- should be considered a corollary to the above recommendations.
- the State Department adopt a more vigorous policy of securing appearances by vocational youth groups at local

civic club meetings, rather than mere encouragement, with State level support in the form of film now available, or other visual aids;

- the State legislature repeal the dropout reporting law. (There is no penalty for non-compliance with the law);
- the legislature increase the State aid formula for vocational programs in the public school system to \$6,000 per program, with the stipulation that 20 percent be set aside for equipment and supplies. (The original \$2,500 per program has long since passed its intended purpose of supporting higher cost occupational training programs, due to inflation affecting equipment costs);
- Federal reimbursement be applied to those secondary vocational programs which conform to the law after negative evaluations. (Authority: Section 104.402 and 104.403 (a) P.L. 94-482.

Among the vocational education programs listed, descriptive data are given for the following: vocational agriculture; home economics; business and office education; distributive education; health occupations, and trade and industrial education.

There are 30 area vocational-technical schools operating under 20 district boards and enrolling 48,565 individuals during FY 1977. Area schools participate in CETA programs by contracting for skill training. They also provide free tuition to Vietnam veterans. Several schools operate open-entry open-exit programs for adults.

The State Guidance Section concentrated much effort on preparing students to make realistic career choices.

The Division of Education Equity Services developed goals and objectives for the elimination of sex bias and sex stereotyping from vocational education programs. These are included in the State plans and are listed in the Council report.

The Special Schools for Industry Training is a flexible program that provides trained manpower for a new or expanding industry and is terminated when a qualified work force is available. From July 1, 1976 to June 30, 1977 this division trained 1,387 people in 40 programs in 29 different communities. The program has produced 15 manuals for 7 different companies.

The staff of VIEW (Vital Information for Education and Work) updated and distributed decks of data cards on 486 occupations; developed

a VIEW handbook; and provided 17 workshops in schools on the use of VIEW materials.

The State Department career development program utilized three mobile units which visited schools, civic assemblies, and county or state teachers meetings.

The Oklahoma Curriculum and Instructional Materials Center cooperated with the Associated General Contractors of America in the development and distribution of materials for training programs in Commercial Carpentry, Cement Masonry, and Bricklaying. Systems design and computer services provided under a contract between the State Department of Vocational and Technical Education and Oklahoma State University have concentrated during FY 1977 on the following areas: conversion of ongoing programs to the IBM 370/158 computer; expansion of existing systems; and development of new systems. During the past year the Computer Graphics Laboratory served students in eleven higher education institutions and area vocational-technical schools.

The Council report concludes with a statement of seven goals concerning the vocational education equipment pool, with a breakdown of objectives accomplished for each goal.



## OREGON

The eighth annual evaluation report of the Oregon State Advisory Council for Career and Vocational Education is devoted to an assessment of vocational education teacher and administrator preparation.

Section I gives the study context and identifies the four locations of vocational education teacher preparation programs: Oregon State University, Portland State University, Southern Oregon College, and Linfield College (a private institution).

Section II lists specific purposes for the study and objectives associated with each. The purposes are as follows:

Purpose 1. Determine the extent to which goals of vocational education training programs are congruent with the expectations and/or perceived needs of schools and communities for vocational education instruction.

Purpose 2. Determine the extent to which available in-service training from Oregon State University and the Personnel Development Center satisfy known needs of practicing vocational education teachers and administrators.

Purpose 3. Establish an operational definition for Leadership Development; identify and describe available training; and determine the extent to which available programs satisfy known or perceived needs.

### Section III Procedures

Five target groups in vocational education were selected as the major sources of data. These were: college students, college and/or university faculty and administrators, teachers in Oregon schools, administrators of programs, members of local advisory councils.

A small sample of persons in each group was interviewed to identify specific concerns of the group and to develop a suitable questionnaire.

The five questionnaires so developed were administered to a large sample of each group.

A sixth instrument was prepared to rate a comprehensive collection of objectives for teacher preparation programs.

#### Section IV Results

Analysis of all data generated in the survey resulted in the identification of nine areas of need. These are: definition of competence; program outcomes; course content; followup studies; administrative relationships and inservice delivery and funding; coordination of certification requirements; study of vocational teacher inservice training; inservice training plan; and definition of leadership development. The report discusses each of these areas of need and cites relevant data.

#### Section V Recommendations

The Council recommends to the Oregon State Board of Higher Education, specifically Oregon State University, Portland State University, Southern Oregon State College, and to Linfield College, that they:

- establish a common definition for vocational teacher competence and coordinate establishment of competencies as graduation requirements;
- cooperatively, or individually, identify discrepancies between their vocational program objectives desired by vocational education practitioners for purposes of program or curricula revision;
- systematically review the course content of preservice vocational teacher courses for their relevance to identified teacher needs and for purposes of adding appropriate practical experiences;
- continue the practice of conducting annual followup studies of recent graduates; improve study procedures as necessary and beneficial; and use information obtained from these studies for program revision, design of instructional strategies and curricula planning.

The Council recommends to the Oregon State Board of Higher Education, that they:

- cooperatively with the Superintendent of Public Instruction and the Oregon State Board of Education, review the relationship between Oregon State University and the Personnel Development Center for purposes of establishing policy to guide both the preservice and inservice of vocational teachers;

- cooperatively with the Superintendent of Public Instruction and the Oregon State Board of Education, review the basic question of who should deliver inservice teacher and administrator training for vocational education and consider any related policies and criteria and their implications for future funding levels and formulas;
- coordinate the approval of inservice training courses and activities to facilitate satisfaction of certification requirements;

The Council recommends to the Superintendent of Public Instruction and the Oregon State Board of Education, that they:

- conduct, in cooperation with the Oregon State System of Higher Education, a study of vocational teacher inservice training that: (1) describes the current program; (2) describes the content and strategies desired by practitioners; and (3) describes necessary and sufficient procedures for coordinated delivery of inservice training;
- prepare a comprehensive plan for providing teacher inservice training in both teaching and technical skill areas;
- cooperate with teacher preparation institutions, to establish an operational definition for vocational education "Leadership Development" which can be used as a guide for the design and conduct of such activities.

#### Section VI Council Policy

After a discussion of types of evaluation studies, this section concludes with the following additional recommendations:

The Council therefore recommends that: a policy be established to review the status of recommendations made in annual studies and that each review be published as a Council report.

Therefore, the Council recommends that: priority consideration be given to further study of vocational education inservice training and especially to a study that: (a) describes current practice; (b) identifies critical elements of demonstrably effective programs; (c) describes resources allocated to inservice training in Oregon; and (d) supports recommendations which will result in an improved inservice training program for vocational education practitioners.

## PENNSYLVANIA

The FY 1977 evaluation report of the Pennsylvania Advisory Council on Vocational Education includes descriptive and statistical data covering 1963 through fiscal year 1976. The data cover enrollments in vocational education by educational level and by program; estimates of unmet needs for vocational education in Pennsylvania by geographical region; enrollments by sex in major programs in selected vocational courses for 1975-1976; racial and ethnic distribution; vocational student organizations; expenditures by source of funds; and employment record for completers and early leavers at postsecondary level.

Advisory Council activities are reported for 1976-77. These included formal and informal cooperation with the Bureau of Vocational Education and the Research Coordinating Unit for Vocational Education. Three Council members served on the State Board of Education's Task Force Studying Certification and Preparation of School Guidance Counselors and Vocational Teachers. Fifteen Council members served on the panels of SACVE-sponsored public hearings held in Erie, Scranton, Philadelphia, and Pittsburgh. Summaries of these hearings are included in the report. They were also forwarded to the Bureau of Vocational Education, the Department of Education, and to the Bureau's State Plan Task Force. The Council was actively involved in the review of the State plan for vocational education, participating in sessions in which subgoals and objectives for the plan were discussed. The Council was also represented on the 107 Planning Committee. The Evaluation Committee of the Council met with the director of the Research Coordinating Unit and discussed completed projects, works in progress, and plans for further research. In the spring of 1977 the Council sponsored Forum III in Lancaster, a two-day meeting attended by businessmen, labor leaders and local educational administrators. Council also initiated technical assistance activities in support of local advisory councils.

The Council is confident that because of the work of its Public Hearings Committee there was a direct relationship between citizens of Pennsylvania and decision-makers in developing the State plan. The Council received a draft copy of the State plan for 1978-82 in April 1977. The Council is concerned that the goals adopted for the plan in preparation differ from the goals of the previous State plan, making the task of evaluation of accomplishments under the previous plan more difficult. The State plan would be more useful if there was a detailed analysis of existing problems, and where it should be five years from now. Another problem that the Council finds in evaluating the State plan is the lack of any budgetary figures assigned to the various activities that are designed to achieve the objectives. The report includes a list of suggestions made by the Council for the implementation of several announced state goals for vocational education. It also includes a summary of some

preliminary staff research on labor market supply and demand factors and some published research conducted or administered by the Research Coordinating Unit.

The recommendations included in the FY 1977 report include four policy recommendations covering: reorganization of the department of education, articulation, adequate funding, and career education; and 20 program recommendations covering: AVTS planning; vocational education/manpower cooperation; inservice career education and other educator training and certification; job placement and followup; labor market data validity, utilization, and methodology; program access and elimination of bias; special education; youth groups; dissemination of research findings; and the assignment of the State Advisory Council on Vocational Education to serve also as the State Advisory Council on Career Education.

## PUERTO RICO

The eighth annual evaluation report of the Advisory Council on Vocational and Technical Education for the Commonwealth of Puerto Rico for fiscal year 1977 includes sections on evaluation of goals and objectives; high skills education program; technical education; postsecondary programs; employer perceptions; physical and equipment facilities; and evaluation of the extent to which advisory council recommendations have received due consideration. Material in the appendix includes questionnaires used in a survey of employers, faculty, and students with response rates and suggestions; and a table giving data on enrollments and expenditures from 1966-67 to 1976-77. An introduction describes evaluation scope and procedures and lists Council recommendations.

The report states that the Commonwealth plan for vocational education identifies goals, objectives, activities, expected outcomes, and budget for their achievement. The Council notes that while outcomes in terms of student enrollment can be measured, it is difficult to ascertain whether the objectives themselves are valid and appropriate. It is also noted that the Council found it impossible to determine whether particular activities achieved the expected outcomes because of the general statements in the annual report on Vocational, Technical and High Skills Programs. It is recommended that annual reports from the Department of Education focus on the individuals and groups mentioned in the annual plan so that program and activity accomplishments can be clarified.

General conclusions of the Council call for a more integrated approach on the part of the planning staff; a re-appraisal of the distribution of resources between occupational and non-occupational vocational education; improvement in labor supply and demand data and in timing of funding information; and accountability for performance, which would require measurable objectives.

The Council includes in its eighth annual evaluation report an analysis of the results of a questionnaire survey of the Tool and Die Making Apprenticeship Program, and of postsecondary technical education programs offered at San Juan Technological Institute, Ponce Technological Institute, Guayama Vocational-Technical School and Manati Vocational-Technical School. Target populations were: faculty, graduates of the programs, and employers of these graduates. Analysis of the questionnaire responses is accompanied by Advisory Council conclusions and specific recommendations. Additional information on physical and equipment facilities was obtained by onsite inspection of the institutions.

An evaluation is given of the extent to which previous recommendations of the Advisory Council have received due consideration

The recommendations of the eighth annual evaluation report include the following:

- that the objectives in the annual plan be expressed in measurable terms;
- that there be continued participation by the local and regional areas in the formulation of the annual plan;
- that consideration be given to assign funds from the non-occupational areas to the vocational areas where they are urgently needed;
- that special consideration be given to decentralizing and simplifying the purchasing function at the Tool and Die School so that materials can be requisitioned and paid for more effectively;
- that students at the Tool and Die School be provided with realistic orientation to the job market and with counseling service to meet their special needs;
- that special in-service training programs be provided which are relevant to the particular teaching skills needed by instructors in the Tool and Die School;
- that special provisions be made in the budget for new and up-to-date equipment at the Tool and Die School;
- that objectives and achievements in high skills training programs for adults be specified in terms of the degree of knowledge and of skills performance on the job;
- that information on high skills training programs for adults include a breakdown showing training by the company's in-house personnel and training provided by high skills instructors or consultants, with distribution of funds for each type of training;
- that evaluation and review of the curriculum be made to order to measure whether the current curriculum is relevant and effective;
- that there be continued strengthening of the orientation and counseling services to postsecondary students in the area of employment opportunities;
- that continuing effort be made for followup studies of

Postsecondary Vocational and Technical graduates in order to improve the current method of enrollment planning;

- that greater local participation be made in enrollment planning so that the number of graduates in each area be adjusted to local market conditions;
- that plans be made to investigate the reasons for the high percentage of "drops" in the postsecondary programs and a realistic action plan be formulated in dealing with this problem;
- that an evaluation of the effectiveness of in-service professional development programs be made in order to insure that the objectives of these programs are attained;
- that where possible, local administration be permitted more freedom and flexibility in hiring so that particular program needs can be satisfied more quickly;
- that listing of equipment and physical facilities in need of installation and repair by school and program with estimated costs be made in order to ascertain the scope of the problem;
- that a realistic budget be made with a plan of action in order to provide repair services on a regular and consistent basis for equipment and facilities;
- that steps be taken to secure the proper accreditation for the technical schools;
- that Vocational, Technical and High Skills area initiate steps with the regional colleges in Puerto Rico to coordinate an adequate information system on technical and vocational education manpower in Puerto Rico which would enable the government to allocate its funding as evenly as possible;
- that greater coordinating efforts be made between the school and employers in order to improve communications in the following areas: curriculum content relevant to employers' needs; employment opportunities; internship training for teachers;



- that the Vocational, Technical and High Skills area study the possibility of a cooperative undertaking with the regional colleges in Puerto Rico to improve the technical education program.

153

152

## RHODE ISLAND

The Rhode Island State Advisory Council on Vocational Education believes that adequacy of opportunity continues to be the State's most critical vocational education issue. For this reason, the eighth annual evaluation report deals once again with this topic. The report examines the State's major delivery system for vocational education at the secondary level -- the nine area vocational-technical facilities. Then Rhode Island is compared with the other five New England States as to vocational education enrollment and expenditures. The overall purpose is to present an assessment of where Rhode Island stands in providing vocational education for its citizens.

The summary of findings includes the following statements:

Although the area facilities constitute the State's most significant vocational education delivery system at the secondary level, by 1977 they were at maximum capacity with an enrollment of approximately 5,000 students which represents only 13 percent of the grades 10-12 public school population.

The relatively high cost of tuition at eight of the facilities appears to have held down enrollment of students from sending communities.

The Administrative Plan does not require communities to meet enrollment quotas. Because sending communities have failed to meet their quotas, host communities have enrolled a disproportionate number of students from their own communities.

In 1976-77 all but one of the host communities exceeded their enrollment quotas, some by as much as 200 percent, while all but two of the sending communities fell far short of their quotas, some by as much as 80 percent.

Where disproportionate enrollment exists the area facility has become a predominantly local rather than regional school, contrary to the purpose of the Administrative Plan.

The brief experience of one area facility with the skill center approach shows that the communities involved came much closer to meeting their enrollment quotas than other communities throughout the State.

When Rhode Island was compared with the other New England

States for FY 1975:

- In vocational education enrollment per thousand population, Rhode Island was fifth with 40.87. Connecticut had 82.85 and Maine 70.81.
- In total secondary vocational education as a percent of the population 15-19 years of age, Rhode Island was fourth with 37.40%. Connecticut (84.24%) and New Hampshire (72.00%) led the region.
- When secondary school enrollment was adjusted so that only programs that typically enroll senior high school students and that lead to employment upon graduation were counted, Rhode Island fell to last place in the region with 16.33% of the population 15-19 years of age enrolled. Connecticut led with 27.45% and Massachusetts was second with 21.04%.
- When adjusted vocational education secondary enrollment was measured as a percent of total secondary enrollment, Rhode Island was in fifth place with 25.72%. Connecticut led with 36.03%, and Massachusetts was second with 32.88%.
- In postsecondary enrollment as a percent of the population 20-24 years of age, Rhode Island was in fifth place. New Hampshire led with 4.50% and Maine was second with 4.06%.
- In adult enrollment as a percent of the population 25-64 years of age, Rhode Island was in last place with 1.04%, Maine led with 4.00%, and Vermont was second with 3.26%.

In 1977 Rhode Island Junior College operated one pilot postsecondary program in an off-campus location -- the Newport Area Vocational-Technical Facility.

In 1977 the Bureau of Vocational Education funded satellite programs which were administered by area vocational-technical facilities. A satellite program is one that is located at a site apart from the facility.

When Rhode Island was compared with the other New England States for the interval FY 1971 through 1975:

- An analysis of average Federal vocational expenditures

as a percent of average total vocational education expenditures showed that Rhode Island, with 27.48%, relied more on Federal funds than any other New England State.

- In average State/local vocational education expenditures as a percent of average total vocational education expenditures, Rhode Island was in last place with 72.16%. The region's leader was Massachusetts, with 91.93% and Connecticut was second with 86.04%.
- When the average ratio of State/local to Federal vocational education expenditures was computed, Rhode Island was in last place with 2.59/1. Massachusetts led with 11.40/1. followed by Connecticut with 6.16/1 and Vermont with 5.95/1.
- Rhode Island was third in New England in per capita income with \$7,216.83, slightly behind Massachusetts with \$7,296.09. But Rhode Island was last in average per capita State/local expenditures with \$8.94. Massachusetts led with \$23.80 followed by Vermont with \$16.80.

Rhode Island's relatively low regional position in enrollment and expenditures could mean that it suffers a competitive disadvantage in economic development, because the State appears less able to provide enough job training to support prospective and existing industry.

The report includes recommendations in areas of vocational-technical facilities, enrollment, and expenditures.

The Council recommends:

- that the Board of Regents revise the "Administrative Plan for Vocational-Technical Education in Rhode Island" by September 1, 1978. The revised plan should provide for:
  - the development by the Bureau of Vocational Education of a standardized method of computing tuition for the area vocational-technical facilities and for programs administered and operated by the area facilities;
  - compliance by host communities with the standardized method of computing tuition;
  - mandatory annual tuition payments by sending communities to host communities in an amount equal to per-

student tuition cost multiplied by enrollment quotas set in accordance with the Administrative Plan;

- an annual audit by the Bureau of Vocational Education of each host community's computation of tuition;
- the administration and operation by the area facilities of programs located at sites other than the facilities themselves;
- the optional establishment of tuition charges for satellite programs to be governed by the same quota and tuition guidelines that apply to enrollment in the area facilities themselves;
- the assignment to each area facility of an area facility coordinator, at least one cooperative education coordinator, and sufficient guidance counselors to maintain a ratio of one (1) counselor for every two hundred (200) students;
- State reimbursement to the host communities of salaries paid to area coordinators, cooperative education coordinators and guidance counselors;
- a clear definition of roles, duties and responsibilities of area coordinators, cooperative education coordinators and guidance counselors;

that the Board of Regents encourage the development of at least one regional vocational education school district under the provisions of 16-3-1 through 16-3-24 of the Rhode Island General Laws as amended, with the objective of having such a district begin operating for the 1979-1980 school year.

The Council recommends:

- that the Board of Regents support and implement program and capital development measures that would move the State toward realization of the goal adopted by the Board of Regents of providing opportunities for 50% of the State's public senior high school students by 1980 to enroll in vocational education programs leading to employment;
- that the Bureau of Vocational Education continue to encourage and fund satellite programs administered and operated by the area vocational-technical facilities;

- that the Bureau of Vocational Education continue to encourage and fund programs that provide for maximum use of area vocational-technical facilities and which serve a wide variety of students, including those who are potential dropouts;
- that postsecondary and adult vocational education programs be expanded
  - a) by Rhode Island Junior College and the other public institutions of higher education using the nine area vocational-technical facilities to operate both certificate and degree programs, and
  - b) by the State Department of Education encouraging the establishment of special technical institutes in the area vocational-technical facilities under the provisions of 16-30-1 of the Rhode Island General Laws;
- that the Bureau of Vocational Education allocate a portion of capital development funds, if they become available, to the conversion of vacant facilities for vocational education users, provided that the major maintenance and equipment replacement needs of the existing area facilities are met;
- that the Board of Regents allocate, in addition to State funds already committed to vocational education, an annual amount of vocational education program funds, starting in the 1979-1980 school year, equal to one-half the annual vocational education Federal grant to Rhode Island in the previous year;
- that the Board of Regents elevate vocational education capital development proposals to the highest position in priority among all the educational projects submitted to the Governor and the State Department of Administration for their consideration.

## SOUTH CAROLINA

Section I of the eighth annual report of the South Carolina Advisory Council on Vocational and Technical Education covers general conclusions on vocational education; commendations of the State Board of Education and the State Board for Technical and Comprehensive Education; and recommendations directed to these same boards.

The general conclusion of the Council is that the delivery systems for vocational education in South Carolina are excellent, providing equality of access with respect to geographic location, race, and sex; and offering programs that are educationally effective as well as cost effective. It is anticipated, however, that problems may arise from some features of P.L. 94-482; from constraints of State and Federal funding; and from an apparent trend towards static or declining enrollments.

Recommendations to the State Board of Education and to the State Board for Technical and Comprehensive Education refer to the secondary and postsecondary levels respectively.

It is recommended that both boards emphasize the incorporation of instruction on economic concepts, productivity, desirable work habits, and personal responsibility in all vocational and technical programs.

Continuation of efforts directed towards better articulation between secondary and postsecondary level vocational-technical programs is recommended to both boards.

At the secondary level it is recommended that the State Board of Education:

- intensify efforts to make vocational education programs better known to prospective students, potential employers, and the public at large;
- explore ways to accommodate more students within the existing vocational facilities;
- convey to the local school districts and to vocational education administrators that the State Advisory Council is vitally interested in effective utilization of local advisory committees and will make technical assistance available for this purpose.

At the postsecondary level it is recommended that the State Board for Technical and Comprehensive Education:

- take positive measures to prevent increases in non-instructional costs at either the State or institutional level;
- concentrate on obtaining more private and public local support for existing technical education programs;

Section II includes five topics.

Topic A touches on problems anticipated in connection with P.L. 94-482 with special reference to: the five-year state plan; the grants to assist in overcoming sex bias; and special programs for the disadvantaged. An analysis of enrollment trends is also given showing an overall increase of only 2.4 percent in occupational programs at the secondary level and a decline of approximately 9.5 percent at the postsecondary level.

Section B refers to a special report, Status of Program Articulation Between Vocational and Technical Education in South Carolina, published in January, 1977. In this report the Council identifies eight curriculum areas in which there has been considerable progress in articulation and notes other curriculum areas which are not and need not be amenable to articulation.

Topic C reports the visitation of four vocational education institutions by Council committees.

Topic D includes a series of statements concerning existing conditions in institutions of higher education in South Carolina which show an urgent need for a state-wide master plan.

Topic E lists SACVE recommendations as stated in the FY 1976 report and gives the responses of the respective State Board to each recommendation.

Section III reviews Council activities for the year. These include:

- input to the annual evaluation report under the direction of the evaluation committee;
- sponsorship of Council publications;
- participation in committee meetings and in Council meetings;
- participation in activities at the regional and national level.



- representation on the State Plan Committee and participation in public hearings on proposed rules and regulations for the new legislation;
- structured, intensive visitations at four vocational education institutions;
- expansion of Council membership from fifteen to twenty-one.

## SOUTH DAKOTA

The eighth annual evaluation report of the South Dakota Advisory Council for Vocational Education recognizes the substantial progress made in the past several years but expresses the Council's concern that South Dakota still falls short of meeting the vocational needs of many students. Special emphasis is directed towards removing the barriers that would prevent access to the vocational education system whether these barriers are inadequate space and facilities, insufficient qualified instructional staff; failure to provide alternative programs necessary to achieve academic competency, or failure to provide career exploration programs which could prevent future frustration.

Tables are presented showing employment opportunities in 1977 as they relate to vocational education programs, with projections to 1981. Data are given by instructional program for: current employment; projected expansion and replacement needs; projected labor supply from vocational education completion at the secondary and postsecondary levels and from other sources. Total projected expansion and replacement needs over all programs is 9,864 for 1977. Total projected labor supply from all sources is 9,885. Within the instructional program areas for 1977 projected expansion and replacement needs exceed projected labor supply in agriculture, distributive education, health occupations, gainful home economics, office occupations, and technical education. The reverse is true for trade and industrial occupations.

Tables are also included in the report showing trends in vocational educational enrollment (increases from FY 76 to FY 77 in occupational home economics and in trades and industry and decreases in agriculture, distributive education, business and office, health occupations, and technical occupations); and in instructional costs (increases in all programs but occupational home economics at the secondary level and in all programs at the postsecondary level).

Cost per student analysis in each program shows an increase from FY 76 to FY 77 in agriculture, distributive education, and useful home economics and a decrease in all others at the secondary level. At the postsecondary level there is a percentage increase in all programs ranging from 3.8 percent in occupational home economics to 60.7 percent in technical occupations. Funding at the State level has increased from \$500,000 in FY 71 to \$2,250,000 in FY 78. Federal funds received in FY 77 totalled \$2, 236,337.

A breakdown by general category of the distribution of Federal funds for FY 77 shows the following: secondary, 16 percent; postsecondary, 39 percent; handicapped, 10 percent; disadvantaged, 15 percent; administration, 9 percent; guidance, 2 percent; teacher training, 3 percent; and adult, 6 percent.

The report lists five Council recommendations which were developed as a result of public meetings, special committee meetings, legislative hearings, employer interviews, and student needs assessment. The areas covered in the recommendations include the following:

- elimination of sex bias and sex stereotyping in vocational education at the secondary and postsecondary levels;
- requirement of work experience or a specially designed internship for certification of vocational guidance counselors;
- specific provisions concerning functions and actual utilization of local advisory committees as part of the legal contract between LEAs and the State Division of Vocational Education;
- additional funding and greater priority for adult vocational education programs for occupational upgrading or retraining;
- implementation of a responsive program for articulation between secondary and postsecondary vocational education programs.

## TENNESSEE

The FY 1977 annual evaluation report of the State Advisory Council on Vocational Education represents a year's study. During this time the Council has made firsthand observations in a number of vocational institutions within the State; has participated in forums and public hearings on vocational education and studied reports from these hearings; has received reports from members of the State staff for vocational education; has studied the State plan for vocational education; and has participated in conferences and workshops. The eighth annual report is based on evidence gained in the preceding activities.

One section of the report gives the Council's answer to the question: to what extent were Tennessee's goals and objectives for vocational education as set forth in the 1976-77 State plan met? The plan itself gives goals, objectives, and projected outcomes for 1977. The Office of Statistical Services in the Division of Vocational Education supplied all data related to actual outcomes achieved in 1977. The objectives examined in the report were those relating to numbers of students participating in vocational education programs at the secondary, postsecondary, and adult levels; to the numbers at each level in the special categories of the disadvantaged and the handicapped; and to the administrative and supervisory personnel providing support services at the State and local level. Projected and actual outcomes are given also from the expansion of the Tennessee Management Information System; and for professional development in the form of preservice and inservice programs for teaching personnel. Objectives and outcomes are also noted for research and development and for programs designed to explore alternative procedures which enhance the career development of vocational students and assist students in making the transition from school to making a living. For the 22 objectives for which data are given in the report, value of the actual outcome for FY 1977 was greater than the projected value in 15 instances and less than the projected value in 7. The Council finds that vocational education is one of the fastest growing segments in the Tennessee educational picture. The Council also believes that the enrollment growth has been in keeping with leading students toward realistic goals and is contributing to the economic development of the state of Tennessee. The report includes four specific commendations and eight recommendations.

The State Advisory Council commends:

- the State Board for Vocational Education and the State Department of Education for progress made in the implementation of the comprehensive vocational education plan.
- the State Board for Vocational Education for establishing

a systematic procedure for funding program improvement projects. The formation of the Research and Development Committee made up of departmental staff and chaired by the Research Coordinating Unit Director, was a positive step toward increased coordination of applied research, exemplary, and curriculum development activities.

- the State Board for Vocational Education and the Division of Vocational Education for its efforts to provide competency-based curriculum for vocational education programs. We believe that vocational education can benefit by having a departmental curriculum committee to formulate long and short range plans in competency-based vocational curriculum.
- the State Area Vocational Technical Schools for the progress made in full utilization of facilities. At present ten Area Vocational-Technical Schools are providing programs on a double shift basis.

The State Advisory Council recommends:

- that the State Board for Vocational Education continue to develop and implement programs to assist school districts to effectively utilize lay advisory committees for the purpose of advising their respective boards on the development, operation, and evaluation of programs;
- that the State Board for Vocational Education encourage each local school board to establish and maintain job placement and followup services for students graduating or leaving the public school system. This will include comprehensive high schools and vocational centers that have programs under the administration of local school boards;
- that a workshop or study be planned and implemented jointly by the State staff, teacher education institutions, and the State Advisory Council to identify problems with teacher education and solutions to those problems;
- that qualifications for personnel be included in the State plan so that a uniform method for selection of personnel be used;
- that provisions of the State plan be binding to the State Board, the Department of Vocational Education, and all local systems;

- that there be a stipulation of study time incorporated into Co-op, D.E. and work-study programs to insure that the student does not work so many hours that he neglects his classroom work.

The Council states that it has reviewed the annual report of the Tennessee Manpower Services Council and includes a section of that report which describes the CETA programs conducted cooperatively with the Division of Vocational-Technical Education. A breakdown is given covering five percent funds for FY 1976 according to prime sponsor, participants served, and expenditures.

## TEXAS

The eighth annual evaluation report of the Advisory Council for Technical-Vocational Education in Texas is entitled Vocational Education: Who's Listening? and is organized into four parts. Part I includes a consideration of special characteristics of the Texas economy; the relationship between the unemployment rate and illiteracy; and the contributions of vocational education towards a solution of the economic problems of the individual and of the State. An analysis is given of certain administrative concerns which have given rise to confusion about the responsibility for decision-making in vocational education. The Advisory Council recommends:

- that the State Board of Education conduct a complete review of State-level policy formation and administration as it relates to vocational, technical, adult, and manpower education in Texas, and that action be taken to achieve the following:

clearly identify the responsibilities and role of the Commissioner of Education, his deputies, the Commissioner's Coordinating Council, and the Associate Commissioner for Occupational Education and Technology in terms of vocational, technical, adult, and manpower education at the local, state, and national levels;

identify the position within the agency that is responsible for day-to-day decision-making as it relates to vocational, technical, adult, and manpower education;

- that the State Board of Education clearly delineate between policy and administration; and identify the administrative decision-making process and at what point in the process input can be made by those interested in making such input.
- that the State Board of Education, in developing policy and providing leadership, give clear direction to vocational, technical, adult, and manpower education in Texas.

Part II details some of the rules and regulations of P.L. 94-482 and indicates the extent to which the Council has been able to implement the requirements during FY 1977. A tabulation is given of thirteen goals of the FY 1977 State plan with a breakdown under each of the objectives with projected and actual outcomes where such data were available. The report comments that much of the

information on the accomplishments during FY 1977 was unavailable from the State Department of Occupational Education. The conclusion states that overall the goals and objectives have been accomplished at a reasonably high level.

Part III includes a summary of Council projects and reports. These include: the Texas Personnel Interchange Program; the Vocational Planning and Evaluation Information System; the Texas Student Information System; the Adult Performance Level Project; Texas Industrial Start-Up Training Program; Texas Post-Secondary Educational Supply-Demand Information System; Regional Workshops for Local Advisory Councils; 1977 Governor's Conference. There is also a chart showing comparative data for the source, management, and application of public funds used in technical vocational education and related activities for the years 1970, 1973, 1975 and 1976.

Part IV is a brief summary of three charts and thirteen tables giving data on enrollments by grade level and by program; completions and placement; minimum foundation-funded vocational teacher units by secondary school program; and funding by educational level and by special target group.



## TRUST TERRITORY OF THE PACIFIC ISLANDS

The eighth annual evaluation report of the Advisory Council on Vocational Education of the Trust Territory of the Pacific Islands indicates that the two primary goals for FY 1977 were: to encourage the development of vocational education programs and curricula in the area of marine resources and agriculture; and to promote the integration of technical and academic programs in secondary schools. It is noted that these were really Council goals but that the State plan goals closely followed them. Concerning the first goal, the report states that the Council and Trust Territory Department of Education have promoted the publication and distribution of curriculum materials in tropical agriculture and animal husbandry and have sponsored a workshop for agriculture teachers. No substantial progress has been made in the area of marine science. With respect to the second goal, the Council has officially endorsed a proposal for integrating the technical and academic programs in the secondary schools. This proposal has now been formally approved by the Board of Education of the Trust Territory and District Directors of Education have been told to take positive steps to adapt and implement its key ideas.

The report notes the following critical problem areas: improvement of articulation of vocational education programs between secondary and postsecondary levels; need for additional qualified vocational teachers; insufficient funds for upgrading the skills of vocational education teachers; need for curricula and programs in marine science; need for specific data on manpower requirements; improving the quality of the graduates from vocational education programs. These problems have been addressed during the past year by the Board of Education with the active support of the Council. Micronesian vocational teachers have participated in B.S. degree programs at the University of Hawaii and in a summer school program at the Micronesian Occupational Center. There was also a one-semester program at the University of Hawaii especially designed for district vocational education supervisors. A specialist working under contract for the United Nations Development Project has completed about 90 percent of a skills survey of the Trust Territory which should give information on specific manpower requirements. Research studies sponsored by the Council include: criteria for evaluating vocational education programs; curriculum material on economically valuable plants and trees that can be grown on atolls; publication of the second volume of Tropical Horticulture for the Secondary Schools of the Trust Territory.

Part II of the report includes overall conclusions and recommendations of the Council in the following areas: student oriented (8); teacher and teaching responsibilities (11); administration and public relations (10); occupational preparedness (10); interfacing with Federal job-training programs (6); and the Vocational Advisory

Council (6). The numbers in parentheses indicate the total recommendations in each area.

Part II gives a tabulation of Council activities for FY 1977 and a detailed statement on the criteria for evaluating vocational education programs in the Trust Territory. The discussion groups these criteria in the following categories: student oriented; teacher qualifications, responsibilities, and certification; the learning institution; the vocational education coordinator and the district vocational education supervisors; sex stereotyping; postsecondary vocational education; and the Trust Territory Vocational Advisory Council.

The Utah State Advisory Council on Vocational Education gives to its eighth annual evaluation report the title: An Idea Whose Time Has Come.

The report begins with a series of advocacy statements for job-oriented education and answers some commonly offered objections. Data are given from a Salt Lake Tribune opinion poll showing relative importance of a trade school education and a college education today when compared with fifteen years ago.

Ninety-seven percent of those polled considered a trade school education more important today than it was fifteen years ago; forty-two percent considered a college education more important today than it was fifteen years ago.

A tabulation is given of jobs in Utah by vocational education category, estimated for 1977 and projected to 1982, with a breakdown into new jobs and replacement needs. It is noted that jobs related to vocational education currently total sixty-three percent and are expected to increase to seventy percent of the total. The unemployment rate in Utah was 5.2 percent in September 1977 while that for the nation as a whole was 6.9 percent.

A Council survey of employer manpower needs shows a shortage of skilled employees in Utah. Fifteen percent of the firms responding have had to hire qualified persons from out of state for a total of 369 jobs in fifty-one occupations. A general review of vocational education completions from public, private, and apprenticeship programs indicates a total output of 29,624 for a demand of 35,570.

Other data show that while total postsecondary enrollments have stabilized, vocational postsecondary enrollments continue to rise. A breakdown of expenditures for instruction costs at postsecondary institutions shows 15.1 percent for vocational education in fields which employ 88,197 people; 54.4 percent for liberal arts in fields which are not directly related to jobs.

The report concludes with the following recommendation with the accompanying expansion into implementation:

The major priority of the total education system in Utah should be to prepare students for their life's work, whatever their choice may be. We must better relate the output of students from the education system, both young people and adults, with employment opportunities, both in Utah and throughout the nation.

To implement this recommendation, it is the view of the Advisory Council that the following actions should be taken by the State Board for Vocational Education and others:

- The career education position paper adopted by the State Board of Education on May 12, 1972, and revised on March 9, 1973, should be fully implemented throughout the entire elementary and secondary school system. In the view of the Advisory Council, this is a great document which includes an excellent definition of career education and outlines in a comprehensive manner the programs that should be implemented to make career education a reality in Utah. Funds to fully implement the career education concept must be provided by the Legislature.
- The Advisory Council would like to see this position paper fully implemented and impacting the school life of a majority of students by the 1981-82 school year.
- It is the view of the Advisory Council that as the career education concept is implemented, vocational education will flourish, since vocational education is a major part of career education and most of the job opportunities are in the area for which vocational education prepares students.
- Although substantial progress has already been made in career education in Utah, point four of the position paper, which states as follows, has yet to be implemented:

"At high school graduation, or at the time a person leaves school, each student will be assisted by the school system in being successfully placed at the next step of his choice. This may include entry-level employment, military service, technical school, college, homemaking or any other temporary or permanent goal identified by the student under wise counseling at the school. Such a step requires school personnel to provide for follow-up to ascertain the effectiveness of the school program."

The Board for Vocational Education should encourage the Board of Regents, the Legislature and institution presidents and directors to develop programs and take action in the following areas:

- The mission and goals of each of the institutions should be reviewed to assure that they include as one of their objectives the need to prepare students for their life's work and all that this implies.
- The funding of post-secondary education should be reviewed so as to assure that adequate funds are available so that students who desire to prepare for their life's work may have opportunities to do this in areas where jobs are available.
- The use of Federal vocational education funds should be reviewed so as to make these funds available to begin new programs and assure that they don't become just a part of the institution's regular budget.
- The funding at both technical colleges should be reviewed to determine why the appropriations are lagging so far behind enrollments in relation to appropriations and enrollments at other institutions.

## VERMONT

The eighth annual evaluation report of the Vermont Advisory Council for Vocational-Technical Education consists of the findings and recommendations resulting from two Council studies. Study committees addressed the questions:

How effective are procedures for replacing and maintaining equipment?

How effective and efficient is the utilization of facilities?

Questionnaire surveys based on each of these questions covered sixteen Vermont area vocational centers. The report includes a copy of each questionnaire with a breakdown of responses to individual items. There is also a detailed analysis of the implications of the total response.

With respect to the first question, the Council finds that there is a serious and immediate need to purchase new and replacement equipment, and to maintain existing usable equipment. It finds also that an equipment inventory system is needed which will result in an accurate and equitable annual forecast of equipment needs. The Council recommends:

- that the State Board of Education effect the development of a strong preventative maintenance program for vocational equipment at each area center;
- that the State Board of Education design and implement an amortization system for the annual purchase of new and replacement equipment. The cost of the system will be supported by State funds (75%) and local funds (25%);
- that the State Board of Education place a high priority on allocation of State funds for purchasing new and replacement equipment identified by the amortization system specified above;
- that the State Board of Education encourage local school administrators to use for vocational expenses those funds generated by vocational tuitions, vocational aid receipts, and local tax receipts.

With respect to the second question, the Council finds that, under existing conditions, most of the vocational facilities are well utilized during the regular school day from 8:00 a.m. to 2:30 p.m. However, the Council feels that not only should more students have access to vocational programs, but also that there

should be more equal access to programs for all students. Vocational education must be given a high priority in arranging daily schedules, and consideration must be given to extending the school day.

Further, the Council envisions facilities being used for programs of career education and expanded secondary, adult/postsecondary offerings. Programs to retrain for new skills and to upgrade existing skills, enabling Vermont's labor force to compete in the employment market should be available to those in need. Other activities which the Council supports include staff development workshops, and forums dealing with current issues surrounding vocational education. Participants should include not only administrators and faculty but also representatives from business, trades, and industry.

The Council recommends:

- that the State Board of Education promote activities to assure and confirm the concept that vocational education programs located at the area centers are, in fact sending-school programs located at the area center campus;
- that the State Board of Education encourage policies to promote maximal use of area center facilities at all sites.

## VIRGIN ISLANDS

The eighth annual evaluation report of the Virgin Islands Advisory Council for Vocational Education is organized into three parts. Part I includes the statement of the mission of the Division of Vocational-Technical Education as given in the State plan for FY 1977 and the following description of constraints in funding and facilities:

During Fiscal Year 1977 the Division of Vocational/ Technical Education continued to be faced with the same difficulties which existed during prior fiscal years. These difficulties are all related to the fact that:

The funding for vocational education is \$204,000 Federal Government funds, and \$1,500,000 Virgin Islands Government funds.

The shortage of funds, and the expanding school-age population, continue to make it necessary for some schools to conduct double sessions; therefore, all desiring students cannot be accommodated in vocational programs.

The limited amount of space and facilities continues to curtail expansion of program offerings.

Part II gives a breakdown of current enrollments by educational level and by program for FY 1977 with comparative data for the interval 1973 to 1977. Other quantitative data are given for: guidance and counseling services; cooperative education; student organizations; postsecondary programs; programs for the disadvantaged and for the handicapped; career awareness programs; work-study programs, and personnel development.

Part III covers Council activities with special reference to participation in and support of the Governor's Task Force for studying vocational needs; sponsorship of the Personnel Development Seminar, Council newsletter, and public meetings. The report concludes with the following recommendations:

The State plan should be submitted to the Advisory Council prior to December 1st so that the members will have time to study it before the Council is asked to approve it.

The Advisory Council wishes to obtain copies of Federal and local budgetary allocations for vocational education for 1977-78 and 1978-79.



The Advisory Council requests a meeting with the State Board of Vocational Education at the earliest opportunity to discuss the Council's observations and recommendations.

Particular attention should be paid to filling any or all positions on the Board of Vocational Education so as not to jeopardize the continuation of the vocational program.

The Board of Education and the Board of Vocational Education should meet as soon as practically feasible in order to discuss among other things the promotion policy.

The results of the latest study of the Career Education Program being done by the Office of Curriculum and Instruction should be made available to the Advisory Council.

We endorse the payment of stipends for vocational education instructors to upgrade their skills.

We recommend that the Board of Vocational Education endorse off-island training for teachers with special needs, such as teaching special education students.

We recommend that all counselors be provided with additional training to upgrade their skills to be able to serve special needs, such as special education.

We recommend that as much on-the-job training as necessary be given to vocational education students in their senior year, and where needed, transportation or funds for transportation be provided to the job site.

We recommend that agriculture be revitalized with the establishment of fully equipped farm shops, with a tractor and all the attachments needed. A pickup truck is a necessity to this program. A five acre tract is a minimum according to federal regulations.

We recommend that a distributive education course be taught on both islands that would lend itself to recreation in the maintaining of tourism.

We recommend immediate attention to the building of a skill center in St. Croix.

We recommend a systematic plan for repairing and

maintaining all equipment used in vocational education. For example, a maintenance contract system should be explored.

All of the above recommendations are to be reviewed no later than six months from the date of submission to see how many have been implemented.

The eighth annual evaluation report of the Virginia State Advisory Council on Vocational Education reviews and evaluates five goals and twenty-three objectives of the State plan, with outcomes projected and actual for FY 1977.

These goals and objectives are in the areas of enrollment at all levels and in special categories; attainment of marketable skills for initial and continuing employment; job placement; promotion of good work habits and attitudes; cooperative planning by the Division of Vocational Education and CIA; orientation and exploration programs for the determination of career choice and of appropriate educational programs and improved and expanded ancillary activities.

The Council states that while progress towards the accomplishment of a major portion of the objectives is proceeding as planned, one concern continues to be expressed about variations which exist between many of the projections and actual results. Some projections are extremely high or low when compared with results. The Council emphasizes the problems involved in predicting statewide figures with data from as many as 150 sources in some cases, but it feels that continued emphasis must be placed on this phase of the planning process at all levels.

The annual report includes also tables of data contributing to an evaluation of the effectiveness with which people and their needs are served. These data cover: public meetings held by the SACEV; job placement in 1975 and 1976; labor demand and supply projection for 1974; enrollments by vocational program and educational level for 1976 and 1977; enrollments in secondary programs by vocational services, school division, and planning district for 1976-1977; full time, part time, and type of program, fall 1976; comparison of 1975-76 high school graduates with 1977 ninth grade membership and high school graduates continuing formal education by planning districts; and expenditure of local, state, and federal funds.

From the data presented, the Council concludes that vocational education is having a positive effect on the lives and futures of many citizens of Virginia through the secondary schools and community colleges. This is evident in the followup survey of persons completing vocational technical education programs in the 1975/76 school year, which shows 66 percent of the 46,671 completers are related to employment and 61 percent of them employed in their major field, 67 percent are employed in the field for which trained or a related field, and 27 percent are employed in other fields.

A significant response from the secondary completers shows 87 percent use the knowledge and skills from vocational education in their jobs. This question was not asked of those completing post-secondary and adult programs. Three-fourths of the individuals not available for employment are continuing education at a higher level while others in this category list various reasons for not entering the labor market at this time.

While these are positive results, many individuals still do not have access to vocational education programs and others do not take advantage of the opportunities which are available. Unemployment continues to be high, while jobs requiring skilled training remain unfilled. Labor demand and supply projections for FY 1978 show the demand exceeding the available supply provided by vocational education and other training sources in every major occupational area. Yet 18 percent of those completing vocational programs and available for employment are reported as unemployed in the recent followup survey.

In a research study conducted for the Advisory Council last year, Dun and Bradstreet, Inc. found that more skilled positions continue to be the most difficult for employers to fill. Respondents indicated vocational education is important for proper job performance as the skill required for the job increases, but a question about hiring practices indicated that as the skill needed for the job increases, the average number of vocational graduates they hire decreases.

Vocational education must continuously strive to better serve those who are enrolled in the program through the development of skills, knowledge, and attitudes needed to succeed and advance in the business and industrial community. At the same time, a concentrated effort must be made to provide access to vocational programs for those who have not had these opportunities in the past. Only through these efforts will vocational education reach its full potential.

Other sections of the eighth annual report cover: a position statement on sex stereotyping and sex discrimination; a summary of problem areas and concerns identified in five on-site reviews of vocational education programs; the response of the State Board of Education to previous Council recommendations; and the FY 1977 Council recommendations with a rationale for each. These latter recommendations are as follows:

- that the SBE take action to improve communications between vocational education and the business and industrial community so an increased level of understanding

about vocational education is developed within this important segment of our society;

- that the SBE take action to establish a statewide coordinated program of vocational teacher education in cooperation with the institutions of higher education providing such programs;
- that the SBE develop a policy handbook related to the administration of vocational education which will identify policies for vocational education organized by various categories such as personnel, program, fiscal, evaluation; and general;
- that special assistance be provided to school divisions which have had difficulty, or have been unsuccessful, in implementing a program of employment counseling and job placement for high school leavers and graduates conforming to the guidelines established by the State Board of Education;
- that the SBE develop guidelines and standards for the establishment and operation of local advisory councils on vocational education;
- that the SBE include relevant vocational education experiences in the certification requirements for school administrators;
- that the SBE seek high priority in the Governor's Office and the General Assembly for FY 1978-80 vocational education funding for the public schools and community colleges.

## WASHINGTON

The eighth annual evaluation report of the Washington State Advisory Council on Vocational Education is devoted primarily to the presentation of the data and conclusions of an Employer Perceptions Survey conducted by the Council with assistance of the services of Eastern Washington University.

Mail questionnaires were sent to the personnel managers of each of 869 Washington employers. The response rate was 55.9 percent. The report consists of 17 tables giving a tabulation of answers to the questions in each of the six sections of the questionnaire. These include: attitude questions; attribute importance questions; employee rating questions; measure of success questions; open-ended questions; and classification questions. For each of the tables the report includes a brief description of the data and a more detailed analysis of the highlights.

Among the general conclusions of the survey the report mentions the following:

- In general, attitudes toward and perceptions of vocational education were favorable. On almost all attributes vocational education graduates were evaluated better than or equal to graduates of other curricula.
- 85 percent of respondents agree or strongly agree that vocational education students should be given more practical experience in their training.
- 83 percent agree or strongly agree that there needs to be more contact between employers and educators.
- 85 percent agree or strongly agree that local schools should utilize the total resources of the community for training -- public, private, proprietary, business and industry, etc.

The report also includes a section on the consideration given by the State Board for Vocational Education to the Council's recommendations for 1975 and 1976 and lists five detailed recommendations for FY 1977 with an accompanying rationale for each. The FY 1977 recommendations include the following:

- sponsorship of a Leadership Development Conference for Local Advisory Committees on Vocational Education;
- the development and implementation of a full range affirmative action plan through philosophy and policy statements and through the adoption of seven specified

State plan goals concerning racial minority groups, females, and physically or mentally handicapped students;

- publication of an updated and revised edition of Career Choices in Occupational Education-Job Training Opportunities in Public and Private Schools, Institutions, and Colleges in Washington State;
- adoption of policy and whatever action is necessary to assure that State vocational education teacher education institutions give adequate emphasis to the effective utilization of local vocational education advisory committees in the preparation of teachers and administrators;
- use of six specified criteria which were rated highest in the employer survey in evaluating the success of vocational education programs.

## WEST VIRGINIA

The eighth annual evaluation report of the West Virginia State Advisory Council on Vocational Education is based primarily on the extent to which the Bureau of Vocational, Technical, and Adult Education was able to implement its goals and objectives approved by the State Board of Education and contained in the FY 1977 State Plan for the Administration of Vocational Education in West Virginia.

The State Board priorities with corresponding goals and objectives are listed. The method of evaluation used by the Council included the formulation of specific questions concerning implementation of goals and objectives. Answers to these questions were then obtained from staff persons within the BVTAE who were responsible for monitoring implementation of particular objectives. Questions and answers are included in the report. Council evaluation comments complete the analysis.

The following statements are representative of the ideas expressed in these comments.

- We believe that the high utilization rate of existing vocational education facilities provides strong support for the Bureau to substantiate its need for additional construction funds.
- The development of a systematic procedure for articulation among all levels of vocational education will require more than "discussion in many informal conferences." It will take a concerted effort on the part of the Bureau staff members to be continually aware of the goals, objectives, and accomplishments of each of the levels of vocational education under their supervision.
- As more local school systems adopt a competency-based curriculum for their vocational education programs, the State Advisory Council encourages BVTAE to initiate a pilot reporting system that will communicate students' competencies to potential employers.
- When the activities of the State Occupational Information Coordinating Committee come on line, the West Virginia State Advisory Council on Vocational Education hopes to be invited to participate in an advisory capacity, in the formulation and accountability of program plans developed by SOICC.
- Although the Bureau has encouraged the development by



LEAs of a vocational cost accounting system, data collected indicate that counties throughout the State do not yet have this capability. SACVE commends the Bureau decision to continue to assign a high priority to the implementation of a cost accounting system.

The report concludes with two recommendations:

- The West Virginia State Advisory Council recommends the Bureau study its ability to respond to the present planning requirements and review its staffing pattern to determine whether or not adequate attention can be given to planning without inhibiting the normal day-to-day operation of programs supervised at the State level. With the Bureau needing to coordinate and maintain their own research and evaluation efforts, step up their capability to collect and compile statistical data and continue the work required to maintain the operation of the ongoing activities, we believe the Bureau needs a more comprehensive planning system. Whether or not an improved system would entail a staff reorganization or the addition of personnel specifically hired to work in planning and accountability, we don't know. We do, however, recommend that the Bureau begin an immediate study of their planning capability and bring it in line with what is required of them in P.L. 94-482.
- We recommend that the Bureau of Vocational, Technical and Adult Education begin immediately to develop strategies that will provide vocational students with a realistic appraisal of the energy and energy-related job market in the next few years. A presently adequate but continually growing number of teachers need to become familiar with energy technologies and develop a means of incorporating new methods into existing curricula. The Bureau needs to continue its national leadership by developing new curricula covering a wide range of energy-related programs. Students need to be enrolling now in these energy-related fields to fill the job opportunities expected to be available by 1981 through 1983.

## WISCONSIN

The Wisconsin Advisory Council on Vocational Education report for FY 1977 includes: Council comments on the 1977-81 State plan; Council comments on efforts to address sex role stereotyping; Council perceptions of Manpower Services Council vocational education relationships; Council perceptions of performance data related to vocational education in the secondary schools; 1977 Council recommendations and rationale; and progress report on previous Council recommendations.

As a result of the Council's examination of the goals of the 1977-81 State plan, a number of issues are identified for consideration in future state planning efforts. They are detailed below:

- Future State planning efforts should give consideration to including more specific language which details the monitoring efforts state agencies will undertake to measure progress toward the stated goals in each State plan.
- The accountability reports newly required under the Amendments of '76 should include a specific section detailing the State's progress toward meeting the goals set forth in the State Plan for Vocational Education in effect at the time of the issuance of the accountability report.
- Such monitoring efforts should also include specific information relating to successful completion and successful placement of vocational education graduates.
- Future State planning efforts should more explicitly detail those activities which will be accomplished by State agencies to achieve the goals expressed within the State plan.
- Additional and more qualitative language should be included in statements relating to the benefits that participants will derive from vocational education programs reimbursed through the Vocational Education Act and included in the State Plan for Vocational Education.

In the section of the report devoted to efforts to address the issue of sex equality, the Council notes that no firm commitment has been made to employ a specialist for both the State Board of Vocational, Technical, and Adult Education and the Department of Public Instruction to assist in the elimination of sex role stereotyping. There is also no State funding devoted to meeting the direct costs of activities and programs aimed at resolving sex role stereotyping problems.

The recommendations of the eighth annual evaluation report are that the State Board and the Department of Public Instruction:

- refine the structure of the State plan to include clearer and more specific identification of the State agencies' efforts to achieve the goals contained within the plan;
- develop teacher certification standards which will allow the employment of VTAE certified staff to provide instruction to students enrolled in high school programs;
- employ consultants in sex role stereotyping as specified by the State Plan for Vocational Education;
- provide information to State and National leaders and USOE which will document the progress achieved through past funding efforts and the unmet needs for vocational education in Wisconsin;
- seriously consider recommending the completion of a college level course related to the philosophy, principles or issues of vocational education for the certification of all secondary school counselors;
- develop a long range plan for vocational education in Wisconsin's secondary schools. It is further recommended that this long-range plan include specifically written goals and objective statements which will project incremental improvement in vocational education opportunities for high school youth and a time line by which these goals will be accomplished;
- provide at minimum, quarterly progress reports to the Council on the status of efforts to provide long-range planning for vocational education in Wisconsin's high schools;
- develop administrative policy which will encourage vocational consultant followup in school districts which do not offer recognized programs of vocational education;
- study methods of funding to determine if there are alternative ways to the Project Method of dispersing funds which would provide for the same accountability and impact while improving on cost effectiveness and equal opportunity in obtaining funds;
- work cooperatively to secure greater State and local

resources for secondary vocational education in the future;

- continue to emphasize the enrollment of all target groups into quality programs of vocational education;
- review certification standards for vocational teachers in an effort to further emphasize the need for specific course work which will better prepare teachers for meeting the unique needs of the disadvantaged, handicapped and other target groups.

## WYOMING

The eighth annual report of the Wyoming State Advisory Council for Occupational Education is organized in three sections.

The first section considers State goals and priorities as set forth in the State plan. The Council considers that the goals presented are realistic in the light of the data set forth on the present condition of vocational education in Wyoming. The objectives as stated were measurable. The Council was not able to evaluate the extent to which the FY 77 State Goals were met, as the Annual Report of Occupational Education was not available. The State Director, however, informed the Council that 80 - 90% of the goals and objectives had been met. The following recommendations conclude this section of the report.

- The Office of Occupational Education and the Employment Security Commission should continue to review manpower data jointly. They should try to work out a time schedule to the benefit of both parties involved.
- Occupational education enrollment data should be incorporated into the State Department of Education Management Information System to expedite reporting procedures.
- Some agency or person should be designated to compile and interpret data on manpower development.
- Evaluation instruments should be required as part of every occupational education program.
- Guidelines should be established to review projects constructively and critically.
- Provisions should be made for followup data.
- Provisions should be made to evaluate and monitor programs continuously.

The second section of the report is devoted to questions dealing with the effectiveness with which people and their needs are served.

Occupational awareness, orientation, and exploration programs have been provided at the secondary level through the Community Resource Trainer Program and the Experience-Based Career Education Program.

There has been significant growth in the number of students enrolled in occupational programs at all levels. At the postsecondary level of energy development shows the greatest need for skilled

The Office of Occupational Education has established a cooperative agreement for coordinating program planning and distribution of services with the Office of Exceptional Children, Division of Vocational Rehabilitation, Employment Security Commission, and CETA staff.

The Wyoming Vocational Association Leadership Conferences are promoting coordination and articulation among different educational levels.

SACVE has sponsored public manpower development forums among representatives of energy industry, agriculture, community business, and light industry.

Efforts are being made to consider employers' needs in program planning but difficulties have been encountered in inadequate State and Federal funding and in the resistance of local tradition to new and emerging programs and techniques.

A poll of a cross-section of occupational students showed 95% pleased with skills learned; 2% not pleased; 3% not responding to the question.

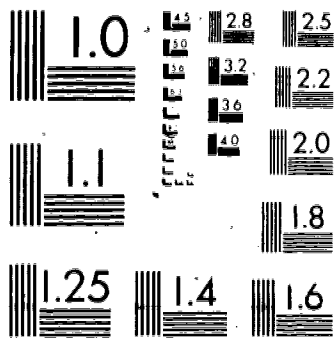
#### Recommendations

The Wyoming Advisory Council for Occupational Education recommends to the State Board of Education that the State Department of Education:

- develop within the Management Information Services Unit an improved system of collecting and unduplicating occupational education enrollments so as to eliminate unduplicated counts of completers and leavers; and assign a full time person or make funds available to gather and analyze data. The system should be coordinated with the State Occupational Information Coordinating Committee and provide employment data for the entire state;
- continue to implement the Wyoming Placement and Follow-up Project for Vocational Education Students where SDE staff are working with the University of Wyoming, Department of Vocational Education staff who are currently conducting the student follow-up system;
- recognize that there is a shortage of professional personnel in vocational education programs and develop and implement recruitment programs to obtain qualified vocational education instructors for those vocational areas

where job market demands exist;

• annually compile and disseminate the Fiscal Accounting Data of Occupational Education Students and Programs to State and local planners.



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ABSTRACT

A performance-based articulation program in data processing was developed between a secondary and postsecondary institution. Focus was on communication between secondary and postsecondary schools related to articulation needs, development of a common data base, and the identification of career options. The project had nine objectives, among which are the following: (1) to develop a system which eliminates the duplication of learned skills, (2) to identify program area articulation opportunities at the secondary and postsecondary levels, (3) to organize a performance-based instructional program for data processing where competencies are set for the secondary and postsecondary levels, (4) to construct the specific curriculum for each occupation within a program area through the use of task inventories, (5) to write instructional modules for each occupation within a program area, and (6) to develop criterion-referenced tests for each module. A project evaluation indicated that the objectives were accomplished and the two institutions made good progress toward articulation. (The appendix, comprising two-thirds of this report, contains the following: data processing competencies for computer programming, computer operations, and key punch operator; a program matrix and job mobility chart; a secondary and postsecondary course of study; a curriculum matrix for data processing; examples of three modules; a student progress checklist; and a task analysis guide.) (EM)

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FINAL REPORT

ARTICULATION PROGRAM BETWEEN SECONDARY AND POSTSECONDARY  
INSTITUTIONS IN COMPUTER TECHNOLOGY

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Project No. 55-77-111-3

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## TABLE OF CONTENTS

I.	ABSTRACT . . . . .	iv
II.	INTRODUCTION . . . . .	2
	Advantages of Performance-Based Instructional Program . . . . .	3
	Disadvantages of Performance-Based Instructional Program . . . . .	3
III.	STATEMENT OF OBJECTIVES . . . . .	7
	Objectives of Project . . . . .	7
IV.	STATEMENT OF THE PROBLEM . . . . .	8
	Statement of the Problem . . . . .	8
V.	PRIORITY AREA . . . . .	10
	Priority Area . . . . .	10
VI.	STRATEGIES . . . . .	11
	Procedures . . . . .	11
VII.	ANALYSIS . . . . .	15
VIII.	FINDINGS . . . . .	17
	Objective I . . . . .	17
	Objective II . . . . .	19
	Data Processing Industry . . . . .	19
	Objective III . . . . .	22
	Objective IV . . . . .	23
	Objective V . . . . .	24
	Objective VI . . . . .	24
	Objective VII . . . . .	25
	Objective VIII . . . . .	26
	Objective IX . . . . .	27
	Students . . . . .	28
	The Institution . . . . .	28
	The Instructional Program . . . . .	29
	The Attainment of Competence . . . . .	29
	The Administrative/Organizational Climate . . . . .	30
	Objective X . . . . .	30

XI. EVALUATION . . . . .	33
X. CONCLUSIONS AND RECOMMENDATIONS . . . . .	34
XI. FINANCIAL STATEMENT . . . . .	40
XII. SUPPLEMENTAL AND APPENDIX . . . . .	42
Data Processing Competencies . . . . .	43
Program Matrix and Job Mobility Chart . . . . .	79
Course of Study Secondary and Postsecondary . . . . .	83
Curriculum Matrix for Data Processing . . . . .	91
Examples of Modules . . . . .	94
Student Progress Checklist Examples . . . . .	113
Task Analysis Guide . . . . .	116

INFORMATION SHEET

A. Kind of Project: (check one)

- |  |   |
|--|---|
| 1 <input type="checkbox"/> Experimental  | 4 <input checked="" type="checkbox"/> Demonstration |
| 2 <input type="checkbox"/> Developmental | 5 <input type="checkbox"/> Evaluative               |
| 3 <input type="checkbox"/> Pilot         | 6 <input type="checkbox"/> Exemplary                |

B. Population

TYPE

- A Disadvantaged  
 B Handicapped  
 C Migrant  
 D Minority  
 E Combination of the above  
 F Other

NUMBERS

(affected by project)

- A \_\_\_\_\_  
 B \_\_\_\_\_  
 C \_\_\_\_\_  
 D \_\_\_\_\_  
 E \_\_\_\_\_  
 F 50-60

GROUP

- 1 Pre-school  
 2 Elementary  
 3 Junior High School  
 4 Middle School  
 5 Senior High School  
 6 Postsecondary  
 7 Adult  
 8 University  
 9 Employer  
 10 Employee  
 11 Citizens  
 12 Parents  
 13 Combination of the above

- 1 \_\_\_\_\_  
 2 \_\_\_\_\_  
 3 \_\_\_\_\_  
 4 \_\_\_\_\_  
 5 \_\_\_\_\_  
 6 \_\_\_\_\_  
 7 \_\_\_\_\_  
 8 \_\_\_\_\_  
 9 \_\_\_\_\_  
 10 \_\_\_\_\_  
 11 \_\_\_\_\_  
 12 \_\_\_\_\_  
 13 50-60

LOCALITY (check the one which encompasses the locality involved)

- a National  
 b State  
 c Region   
 d District  
 e County  
 f Area  
 g Community  
 h School Corporation (LEA)

- b \_\_\_\_\_  
 c 50-60  
 d \_\_\_\_\_  
 e \_\_\_\_\_  
 f \_\_\_\_\_  
 g \_\_\_\_\_  
 h \_\_\_\_\_

## I. ABSTRACT

The purpose of the project was to develop an articulation program between a secondary and postsecondary institution in data processing.

The project was to address the problems of 1) communication between secondary and postsecondary schools related to articulation needs, 2) development of a common data base, and 3) the identification of career options.

The one-year project alleviated and in most cases solved the majority of the problems addressed. The total evaluation will come later when students become more active as a part of the articulation program.

The instructional programs need to be measured by: placement and employer satisfaction with students on such a program, and involvement of business and industry in the educational process by helping identify job tasks.

The project has implications for those interested in curriculum development, instructional development, performance-based education, and vocational-technical education.

## II. INTRODUCTION

Indiana Vocational Technical College of Central Indiana-Indianapolis Region 8, one-year grant project, Articulation Program Between Secondary and Postsecondary Institutions in Computer Technology, supported by the State Board of Vocational Technical Education, (SBVTE) addressed the area of articulation and performance-based education.

A performance-based curriculum does not differ from other curricula in its goals. The distinction of a performance-based curriculum is found in the expectations that underlie it and in the approaches that characterize it. Performance may be defined as "the state of having requisite abilities or qualities." A curriculum is a set of designed courses or experiences. A performance-based curriculum then is one where the performances expected of all graduates are agreed upon and defined, and courses or experiences are designed to assist the student in becoming competent. If a curriculum is to have a performance-base, there must be a clear statement of both what the performances are and how a student may attain them.

A curriculum designed around performances consists of at least three basic elements: first, an overall statement of performances to be acquired for a successful completion of the program; second, sets of evaluative criteria and standards for each performance which define the scope and level of proficiency required for successful attainment; and third, sets of experiences designed to assist the student in attaining the required performances!

### Advantages of Performance-Based Instructional Program

1. Instructional objectives are made clear to students, teachers, and the public.
2. Students' progress is monitored closely in relation to the stated objectives, especially in the early stages of learning to perform a task, and continuous diagnosis of difficulties and opportunities for remedial instruction are possible.
3. There is an opportunity for variation among learners with respect to the objectives they may pursue at a given time, the mode of instruction used, and the materials used for learning.
4. Time may be allowed to vary among students for the attainment of certain objectives, thus permitting slower students to take more time to reach the stated objectives and for faster students to proceed more quickly.
5. Different instructional goals may be set for different learners depending upon their occupational interests and abilities within the program area.
6. Emphasis is placed on the development of minimal levels of competency by all students in job tasks, thus promoting the acquisition by students of marketable job skills. Opportunity is provided for students to develop their competencies beyond minimal levels so they may optimally utilize their individual potential.
7. The relationship of identified competencies to job requirements is more easily depicted when the job itself has been the source of the task identification.
8. Opportunity is greater for variation within the instructional program, thus promoting the likelihood of meeting differing student interests, needs, and capabilities.
9. Students may play a larger role in selecting their instructional objectives in that they may specify particular occupational roles for which to prepare.
10. Students may be encouraged to assume more responsibility for their instructional progress when the completion of a program is dependent largely on the demonstration of specified competencies and greater latitude is permitted with respect to the means used to attain these competencies.

### Disadvantages of Performance-Based Instructional Program

1. Performance-based instruction is dependent upon valid identification of tasks performed in entry-level occupations



and the availability of such task inventories to curriculum developers.

At the present time, task inventories of varying quality are available for many different occupations. VTecs is currently involved in collection of task inventories.

2. Some competencies desirable for certain occupations may be difficult to identify explicitly from inventories of tasks performed.
3. Time may not be available for teachers to develop alternative instructional materials appropriate for learning the tasks which have been identified.
4. Several alternative testing instruments which are both valid and reliable measures of the instructional objectives may not be available.

Alternative testing instruments are to be developed by the vocational instructors at the present time. It may be desirable at some point in time to make available to instructors the tasks, the objectives, and sample test items for occupational curriculum.

5. Unrestricted student-pacing of instruction may lead to an inefficient use of time by some students and, thus, may adversely affect the level of the number of competencies attained.
6. The identification of mastery levels of performance of occupational tasks, or minimum performance standards, is very difficult for many tasks.
7. The establishment of minimal performance levels for students may not provide sufficient encouragement for students to attain more advanced performance levels. (Burger and Lambrecht, 1974).

There are some assumptions which underlie any vocational instructional program. The literature has identified the assumptions that need to be understood by the persons involved in the project or other projects.

1. Students differ from one another in goals, aptitudes, abilities, needs motivations, aspirations, and job or career preferences.
2. The identification of the tasks performed in occupations is the initial step in developing efficient vocational education curriculum.
3. Occupational tasks can be identified.

4. The efficiency of learning can be increased by designating as flexible a sequence of occupational competencies as possible which will lead the student to his/her occupational goal and then allowing, where possible, the student to proceed through the sequence at his/her own rate.
5. Efficient progress of students toward occupational competencies may be facilitated by permitting student-pacing through segments of their instruction.
6. A curriculum must be defined in terms of its objectives as they apply to students.
7. Performance objectives identification must follow task identification in curriculum development. The existence of performance objectives then facilitates the development of evaluation instruments and the identification of learning activities appropriate to teach the objectives.
8. Time and personnel can be made available for the preparation of the necessary task inventories, instructional objectives, instructional materials development, and test development. (Block, 1970; Carroll and Spearitt, 1967).

Recent research in the area of testing has implications for the project. Criterion referenced or mastery testing has led to an increasing awareness of the inadequacy of norm referenced testing for making decisions about individual mastery of subject matter (Durnin and Scandura, 1973; Popham, 1972).

Literature has also indicated that if instruction is specific and clear to the learner the learning session will strengthen motivation (Butler, 1972). Other research has indicated that if students master a subject or a set of performance objectives and the student receives objective and subjective evidence of the mastery, there are profound changes in how the student views learning.

One of the clearest evidence of affective change is the interest the student develops for the subject the student has mastered. (Bloom, 1976). Performance-based vocational programs can lead to a system of assisting students in mastering the subject area.

In summary, the research supports the development of articulation programs between secondary and postsecondary institutions.

In developing the articulation concept, the recommendation is to use a performance-based instructional format. This format can lead to alternative ways in which students might learn to perform the tasks necessary for the chosen occupations.

### III. STATEMENT OF OBJECTIVES

#### Objectives of Project

The primary objective of the project is to develop an articulation program between an area vocational high school and a postsecondary institution in data processing.

A major enabling objective is to develop a performance-based instructional program in data processing using the V'Tecs materials as a resource for performance objectives.

The project's specific objectives are:

1. To develop a system which will eliminate the duplication of learned skills for secondary vocational students who desire the opportunity to enter the postsecondary school at an advanced level in the area of data processing.
2. To identify program area articulation opportunities at the secondary and postsecondary levels in the data processing occupations.
3. To organize a course of study at the area vocational high school for articulation with the postsecondary level.
4. To organize a performance-based instructional program for data processing where competencies are set for the secondary and postsecondary levels.
5. To construct the specific curriculum for each occupation within a program area through the use of task inventories.
6. To write instructional modules for each occupation within a program area.
7. To develop criterion referenced tests for each module.
8. To develop a record keeping system to monitor the progress of students through occupational instruction.
9. To develop criteria for updating and validating the articulation systems.

#### IV. STATEMENT OF THE PROBLEM

##### Statement of the Problem

The trend in programs today is to plan a more efficient means for students to go greater distances without encountering detours or delays in the educational process. Don Gentry, Executive Officer, Indiana State Board of Vocational and Technical Education, stated that secondary and postsecondary program articulation, planning, and coordination will enhance cooperative relationship and encourage all levels of instruction to join this effort of bringing about the best and most complete vocational education opportunities for all citizens in Indiana. Cooperation, coordination, and joint planning is encouraged between program levels and types.<sup>1</sup> Students find it difficult to have accepted what skills and knowledges they already know without some type of program between institutions.

Planned articulation programs between secondary and postsecondary institutions would help solve many of the current concerns between secondary and postsecondary vocational programs. Greater cooperation, coordination, and articulation between program levels are needed.<sup>2</sup>

The lack of instruction on other types of data processing equipment and the need for training beyond the secondary level would solve this problem for Blue River Vocational Technical Center data processing students as well as other area vocational high schools. The articulation of data processing programs between Blue River Vocational Technical Center and Indiana Vocational Technical College-Indianapolis would

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<sup>1</sup>The State of the State in Vocational Education by Don K. Gentry; presented to Indiana's Annual Vocational Education Conference, Indianapolis, Indiana; August 11, 1976. pp. 3-4.

<sup>2</sup>ibid, p. 34.

assure the continuity and compatibility needed to make the transition from secondary level to postsecondary level to employment in the data processing industry.

The project aims to provide a system where competency levels are made clear to students, teachers, and the public. The project will develop written minimal and optimal levels of competency for students by job classifications, thus promoting the acquisition by students of marketable job skills.

The project will develop an articulation model program between an area vocational high school and a postsecondary institution to meet student needs and improve continuity and compatibility to provide competence in obtaining employment in the data processing industry.

Through employer reaction, recommendations made by the data processing advisory committee, and evaluations made by graduates, there is a constant response indicating familiarization and exposure with data processing equipment not available at Blue River Vocational Technical Center. Graduates and employers of data processing graduates strongly suggest the need for postsecondary training in order to achieve advancement and employment opportunities.

The final results of the project will assist other vocational educators in developing valid articulated vocational programs for secondary and postsecondary students.

In summary, the research supports the development of articulation programs between secondary and postsecondary institutions.

In developing the articulation concept, the recommendation is to use a performance-based instructional format. This format can lead to alternative ways in which students might learn to perform the tasks necessary for the chosen occupations.

## V. PRIORITY AREA

### Priority Area

The priority of the project was to develop a planned articulation program between a vocational secondary school and a postsecondary vocational school in data processing.

The program addresses the occupations that could be offered, the hierarchy of occupations in data processing, tasks inventories and curriculum development needed in specific areas of implementation.

## VI. STRATEGIES

### Procedures

The project will be carried out in seven basic steps. In summary the steps are:

1. List all of the occupations that could be offered within a given program area;
2. Decide whether instruction for each listed occupation, within the program area, can be and will be offered in the local program;
3. Develop a Job Mobility Chart to show the basic hierarchy of occupations (beginning level to advanced level occupations) within the program area;
4. Organize the specific curriculum for each occupation within a program area through the use of task inventories;
5. Write instructional modules for each occupation within a program area; and
6. Develop a record keeping system to monitor the progress of students through occupational instruction.
7. Evaluation of the outcomes.

The first step toward the development of curriculum articulation for secondary and postsecondary institutions is to make a list of the occupations that could be offered within the program area. It is not necessary in making this first list to think in terms of certain occupations being taught at the secondary level and other occupations being taught at the postsecondary level; just make the list contain all the occupational titles that fall under the program area.

The second step toward articulation of secondary and postsecondary programs is for instructors from the area vocational secondary school and the postsecondary school to look at the list made in Step One and reduce it down to those occupations which (a) can be taught, (b) will be taught in the local program.



By making a listing of only those occupations which can be taught and will be taught in the local program, think about what is offered in the secondary and postsecondary institutions now. If only the title of the general offering appears, then identify some specific occupations (refer to the list you made in Step One) which are appropriate for students who have completed the general offering.

Next, a determination of what occupations are to be taught at only the postsecondary or only the secondary institutions and what occupations are to be offered at both the postsecondary and the secondary institutions.

The actions suggested below will help as a guide:

1. Select all the occupations within each program area that will be collectively offered in the postsecondary school and at the secondary schools that contribute students to the postsecondary institution. Establish the list as though all occupations would be available at each institution.
2. Rely upon the task inventory to establish the content to be taught in each occupation. The instructors at both secondary and postsecondary levels will be able to communicate about the competencies needed by any person aspiring to a given occupational title.
3. Make as many copies as needed of the list made in Step One. Use one copy of the list to show occupations within the given program area that will be offered at each institution. Eliminate from the list those occupations which will not be offered at that institution because of one or more of the reasons below:
  - A. Students will never have time to acquire the lengthy list of competencies needed for that occupation in the amount of time they can attend.
  - B. Students at that level do not aspire to the occupation.
  - C. Equipment, materials, and instructor time needed to teach the occupation is too expensive to warrant duplication of program offerings.

The third step toward curriculum articulation is the development of Job Mobility Chart.

Using the list of occupations that will be offered in the program area (from Step Two), make a Job Mobility Chart that shows which of

the occupations are prerequisite to other occupations, which are low level occupations, and which are higher level occupations.

Once the Job Mobility Chart is made, show it to the advisory committee and make the necessary modifications. The advisory committee members may need to review the task inventories for the occupations that appear on the chart so that everyone will have a common understanding of what tasks are performed by workers having various occupational titles.

The Job Mobility Chart helps instructors define various occupations in terms of beginning versus more advanced levels, which in turn has implications for which occupations may need to be offered at both secondary and postsecondary institutions. Also, the Job Mobility Chart, when shared with students, helps them understand the range of occupations within a program area. With this kind of information, a student is able to aspire to a more advanced-level occupation at the same time that he/she makes progress toward learning a beginning-level occupation.

The next step, Step Four, is to actually organize the curriculum for each occupation that appears on the list. The sections which follow suggest that the project personnel utilize the task inventories to decide: (a) which tasks for each occupation can be taught and will be taught in your program, (b) how to group those tasks into instructional modules for each occupation, and (c) how to sequence the instructional modules for each occupation within the entire program. All instructors will need to work together to make this outline so that articulation of occupations offered at the secondary and postsecondary institutions is realized.

There are four basic decisions which must be made as a person organizes the curriculum to be offered to students. They are:

Which occupational tasks are you going to teach for each occupation in the program? (These become the terminal performance objectives.)

What enabling objectives need to be included in the modules so that occupational tasks can be performed by students?

How should tasks be grouped into instructional modules?

What sequence of modules should you suggest to students? (Which module should be done first, second, third, etc.?)

Step Five is the development of modules for each occupation being taught at the secondary and postsecondary level.

A suggested format for each module is:

- Purpose of Module
- The Rationale
- Competencies
- Performance Objectives
- The Learning Activities
- Terminology
- Assessment (Criterion Referenced Test)

After steps One through Five toward curriculum articulation have been developed, the next step is the development of a system for keeping track of students who are progressing through modules toward their occupational goals.

## VII. ANALYSIS

The nine major grant components of the project are:

1. To develop a system which will eliminate the duplication of learned skills for secondary vocational students who desire the opportunity to enter the postsecondary school at an advanced level in the area of data processing.
2. To identify program area articulation opportunities at the secondary and postsecondary levels in the data processing occupations.
3. To organize a course of study at the area vocational high school for articulation with the postsecondary levels.
4. To organize a performance-based instructional program for data processing where competencies are set for the secondary and postsecondary levels.
5. To construct the specific curriculum for each occupation within a program area through the use of task inventories.
6. To write instructional modules for each occupation within a program area.
7. To develop criterion referenced tests for each module.
8. To develop a record keeping system to monitor the progress of students through occupational instruction.
9. To develop criteria for updating and validating the articulation system.

The above components were identified as areas of concern by the secondary and postsecondary institutions because of the following weaknesses:

1. A breakdown in communications between schools and programs because their concepts and terminology do not mean the same thing.
2. The inability to objectively or concretely communicate course content between programs because these programs have no common learning content data base upon which they have agreed.

3. The inability to provide continuity for specific career preparation between programs.
4. The lack of a learning content data base which is referenced in industry.

The major step in the development of the project was face to face meetings between secondary and postsecondary faculty. From the meetings, assignments were made and individual faculty did development work.

The review of the competencies by an advisory committee was also an important step. This step needs to be more thorough in any future projects.

## VIII. FINDINGS

The objectives of the grant project which directly addressed the need and concerns already explained will be discussed in this section. The discussion will include the activities and outcomes relative to the objective, an assessment of the objective, followed by recommendation based on the experiences with the project.

### Objective 1

To develop a system which will eliminate the duplication of learned skills for secondary vocational students who desire the opportunity to enter the postsecondary school at an advanced level in the area of data processing.

#### A. Activities and Outcomes

The following sequence of cooperative activities between secondary and postsecondary personnel were determined for implementing the articulated competencies to be taught at each level:

1. Each institution must reach agreement as to which competencies should be taught.
2. Determine which competencies should be taught as the secondary level and which competencies are to be taught as the postsecondary level.
3. Establish the advanced placement or credit granting procedures.
4. Develop and present the list of competencies for approval by secondary and postsecondary representatives.
5. Develop performance objectives for each competency.
6. Develop record keeping system at the secondary and postsecondary levels to record individual student progress.
7. Develop and implement a program of student counseling and student information material which explains the articulated program to students.

The project team consisting of the faculty member from the vocational secondary school and the faculty member from the postsecondary school developed the competencies from several sources. The sources were:

1. Vocational-Technical Education Consortium of States (V'Tecs). Task lists were available for Programmer Chief Business DOT 020168005, Programmer Business, DOT 020188026 and Data Processing Operations.
2. The Center of Vocational Education-Ohio State University Columbus, Ohio.
3. Suburban Hennepin County Area Vocational-Technical Centers, Minneapolis, Minnesota.
4. Kirkwood Community College, Cedar Rapids, Iowa.
5. Computer Program Curriculum at Indiana Vocational Technical College of Central Indiana.
6. Data Processing Curriculum at Blue River Area Vocational School.

See Appendix A for the task identification which indicates the tasks to be taught in the secondary and postsecondary programs.

The competencies were validated by an advisory committee review and reviewed by the faculty at both the secondary and postsecondary institutions.

#### B. Assessment

The objective seemed to have a complex beginning for the faculty who were not familiar with curriculum development and performance-based education, the frustration was alleviated by the assistance of Bill West, State V'Tecs Coordinator and Shirley Smalley of New Castle Community School Corporation. But this occurred late in the project which has caused problems in following the State Plan for Performance-Based Education. If the project staff had been more oriented toward the State plan at the beginning of the project, the results would be different.

### C. Recommendations

The initial start-up research and orientation/in-service time must be provided on the State Plan for Performance-Based Education.

An incorrect analysis because of inadequate project research and understanding at the onset of a project will cost much time and effort in the long run.

A more comprehensive work plan needs to be developed, communicated and followed.

The VTecs material was very useful, but needs to be reviewed and restated to meet program needs.

### Objective II

To identify program area articulation opportunities at the secondary and postsecondary levels in the data processing occupations.

#### A. Activities and Outcomes

The first phase in the development of program area articulation opportunities at the secondary and postsecondary levels in data processing was to identify the occupations that could be offered within the data processing field.

A list of the occupations that could be offered within the program area of data processing was developed by the faculty members from each institution.

A list of occupations that are available in the data processing field are as follows:

#### Data Processing Industry

1. Data Processing Management
  - Manager of Data Processing
  - Assistant Manager of Data Processing
2. Systems Software Programming
  - Manager or Supervisor of Systems Software Programming
  - Systems Software Programmer



3. Systems Analysis and Design
  - Manager or Supervisor of Computer Systems Analysis and Design
  - Lead Computer Systems Analyst
  - Senior Computer Systems Analyst
  - Junior Computer Systems Analyst
  - Lead Computer Systems Analyst and Programmer
  - Senior Computer Systems Analyst and Programmer
  - Junior Computer Systems Analyst and Programmer
4. Computer Programming
  - Manager or Supervisor of Programming
  - Lead Computer Programmer
  - Senior Computer Programmer
  - Junior Computer Programmer
  - Computer Programmer Trainee
5. Computer Operations
  - JCL Technician
  - Manager or Supervisor of Computer Operations
  - Lead Computer Operator
  - Senior Computer Operator
  - Junior Computer Operator
  - Computer Input/Output Control Supervisor
  - Tape Librarian
6. Data Entry
  - Data Entry Supervisor
  - Lead Data Entry Operator
  - Senior Data Entry Operator
  - Junior Data Entry Operator

The second phase in the development of an articulated program between secondary and postsecondary in data processing was to review the list and identify only the occupations that could be taught.

Occupations that could be taught in the data processing field are:

1. Computer Programmer
  - Junior Computer Programmer
  - Computer Programmer Trainee
2. Computer Operations
  - Junior Computer Operator
3. Data Entry
  - Junior Data Entry Operator

At this point the question related to: What occupations are to be taught at the secondary level and what occupations are to be offered at both the secondary and postsecondary and what occupations are to be taught at only postsecondary?

The secondary school indicated offering the following programs:

Junior Data Entry Operator  
Computer Operator  
Fundamentals of Computer Programming

The postsecondary school indicated offering the following programs:

Junior Data Entry Operator-11 week program, Certificate of Proficiency  
Computer Operator-33 week program, Technical Certificate  
Computer Programmer-66 week program, Associate Degree

The competency lists for secondary and postsecondary have been identified in Appendix A for the above three occupations.

#### B. Assessment

The objective was successful in terms of identifying the jobs available. The survey sent to industry indicated a new job title that was not on the survey. The job title was JCL Technician (Job Control Language).

What is the cost effectiveness of Performance-Based Education? From the experience so far, it does not have to cost any more than regular instruction—and it may be more cost effective if more students can be accommodated in variable entry/exit classes.

According to the Indiana Plan for Performance-Based Education aimed at providing options for students, would be efficient in terms of time, energy, and dollars.

#### C. Recommendations

One problem that caused frustration was the curriculum development terminology. In other projects, the problems of terminology needs corrected by clearly defining and communicating to all involved. Both the process and the design plan need to be coordinated in an effective in-service program—either one-on-one or group.

### Objective III

To organize a course of study at the area vocational high school for articulation with the postsecondary level.

#### A. Activities and Outcomes

Using the list of occupations that was developed by the faculty from the secondary and postsecondary schools, two items were developed:

1. The program matrix, and
2. The job mobility chart (see Appendix B)

The analysis of the charts indicate beginning level occupations and advanced occupations. The occupations being offered at this time are indicated as offered.

The programs not offered may represent new program areas or areas that required experience and more education.

The course of study at the secondary and postsecondary level is identified by a topical outline (see Appendix C).

The competencies for the various programs have been identified in Appendix A.

#### B. Assessment

The approach used is helpful for faculty and others to define the various occupations in a field of study and to determine relationships of the occupations.

If the information is shared with students, the charts can help in understanding the range of job opportunities related in a field. Students enroll in a program to prepare for employment and if options are understood in relation to job openings, students can make more informed judgements.

### C. Recommendations

The involvement and utilization of advisory committees should be early in the project as such a committee will provide needed assistance.

A system needs to be developed to provide followup information on revising curricula as a result of technology changes.

### Objective IV

To organize a performance-based instructional program for data processing where competencies are set for the secondary and postsecondary levels.

#### A. Activities and Outcomes

Competency lists the three occupations that were developed for data entry, computer operations and computer programmer. For each competency that appears on the competency list for each occupation, determination was made through faculty review and advisory committee review if the competency should be taught. The V-Tecs materials indicate if the majority of the programmers in the occupation perform the task.

The next question that needs answered is: Can and will the competency be taught? To answer this question you need to know:

1. Is equipment available or accessible?
2. Is the cost justified?
3. Are instructors available?
4. Where should the competency be taught, secondary or post-secondary or both?
5. How much time is required?
6. What prerequisites are necessary?

#### B. Assessment

This was a very difficult step because many of the task/competency lists had to be reviewed and rewritten to meet program needs.

#### C. Recommendations

Two areas that need more consideration in the development of a

performance-based program is student characteristics and the role of related and general education.

#### Objective V

To construct the specific curriculum for each occupation within a program area through the use of task inventories.

##### A. Activities and Outcomes

The first step in organizing a curriculum was to group related competencies together. In recent terminology this is a domain. Appendix A which indicates the competencies taught at the secondary and postsecondary level also reflect the grouping of competencies which are similar.

A program matrix which reflects the courses for each curriculum area is displayed in Appendix D.

##### B. Assessment

The procedure proved particularly beneficial with the faculty. The process required each faculty to evaluate the competencies and how each fit into the curriculum.

The faculty had to determine how the task was performed on the job, what prerequisite skills or knowledge were necessary, and what equipment was necessary in the performance of the task.

##### C. Recommendation

The refinement of the competencies must be done with full cooperation of the secondary and postsecondary institutions, as this is a very time consuming process.

#### Objective VI

To write instructional modules for each occupation within a program area.

#### A. Activities and Outcomes

The performance-based modules consisted of the purpose of the module, rationale, competencies, performance objectives, learning activities, terminology and assessment. See Appendix E for examples of the modules.

Along with the module development, an analysis of some tasks were accomplished.

#### B. Assessment

The procedure proved particularly useful for the instructor or for new instructors just beginning to teach data processing. Because of the late start on using the Indiana Plan for Performance-Based Education not all tasks have been analyzed properly. This can be done as continued development of the program progresses.

#### C. Recommendations

If schools are going to implement articulation programs, some policy are needed for awarding credit, advanced placement, and charging fees. Each program should be allowed flexibility based on its physical resources, number of materials and students, and type of instructors. But if previous competencies are identified and agreed upon, many problems will be resolved.

#### Objective VII

To develop criterion referenced tests for each module.

#### A. Activities and Outcomes

The criterion referenced test consisted mainly of post-assessment options for each unit (domain) and each module. For the most part, domains were developed using the criterion referenced testing plan. See Appendix E for examples of criterion referenced tests.

## B. Assessment

For students who have had training in the secondary schools, the use of the tests can serve as a way to place students into advanced levels of the program. The test out option it is hoped will provide motivation for students who have skills in data processing. The model can also be used in other programs.

## C. Recommendations

The criterion referenced tests that are developed need to be item analyzed and questions that are missed by students can serve as a review point for the instructional module.

### Objective VIII

To develop a record keeping system to monitor the progress of students through occupational instruction.

#### A. Activities and Outcomes

The record keeping system is a method to record students' progress toward the occupational goals. One system which has been suggested is to computerize the student record keeping, or the performance-based educational system can record student progress by making appropriate checklists.

The system would record appropriate measure on a checklist each time a student completes a module or some other measure. In this project the module was used as the proficiency level.

Another record that may be recorded is the amount of time required to complete each module. This will provide data for computing the average amount of time it takes students to acquire various competencies.

The checklist the project faculty developed is displayed in Appendix F.

#### B. Assessment

The record keeping system used gets side tracked by personal preference.

The system suggested in this project is a compromise of several recommendations.

### C. Recommendations

Policies should be developed on grading, because in most school systems the completion of competencies will eventually be converted to a letter grade.

If grades are to be assigned, they should be based on information related to the following:

1. The level of performance is higher than the minimum specified in the module objective(s) in terms of (a) the time taken to complete the activity called for in the outcome statement, (b) the number or proportion of successful attempts, and (c) the quality of the results that are considered acceptable.
2. The amount of time taken by the student to complete all of the modules in the instructional program is less than the amount of time required by the average student.
3. The high number of optional activities elected and completed by the student.

### Objective IX

To develop criteria for updating and validating the articulation system.

#### A. Activities and Outcomes

The project team developed a design for studying the performance-based curriculum and the articulation process. The components of the evaluation are: students, the institution, the instructional program, the attainment of competence, and the administrative/organization climate.

The approach in updating and validating the articulation system using the described components will be descriptive. Variables that are easily understood will be utilized. Reporting and discussion will serve as a means of sensitizing faculty and administration at both the secondary and postsecondary levels to articulation of programs.



The major questions to be explored under each component are identified as follows:

#### Students

1. How many students attend postsecondary institutions under an articulation program?
2. How many credits are students receiving under an articulated program?
3. How do the characteristics selected for study relate to other variables?
4. How do characteristics change for entering students as the performance-based curriculum becomes a part of the institution?
5. What differences emerge between students at the secondary and postsecondary institutions before the performance-based curriculum was introduced and the students on the program?

The following kinds of information will be gathered to answer the questions:

1. Background information
2. Student self-assessment scores
3. Enrollment data
4. Measures of cognitive and psychomotor development
5. Longitudinal studies

#### The Institution

1. What does the College look like as an institution?
2. What recruiting measures are used?
3. What is the total commitment to performance-based education?
4. What expertise does the institution have in performance-based education?
5. To what degree does the curriculum and the climate in which performance-based education occurs reflect the goals and objectives of the institutions?
6. What policies relate to performance-based education?

The following kinds of information will be gathered to answer these questions:

1. Instructional attitudes toward performance-based education.
2. What personnel would be committed to performance-based education?
3. Collection of critical incidents for both positive and negative reactions?

#### The Instructional Program

1. What are the intended outcomes of the instructional program?
2. What are the observed outcomes of instruction?
3. What unexpected outcomes occurred?
4. What are the possible and actual options available for students?
5. What are the strengths and weaknesses of the program?
6. What special faculty development programs do faculty need for performance-based instruction.

The following kinds of information will be gathered:

1. Course syllabi, modules, objectives, evaluations criteria and standards will be developed, reviewed, and updated.
2. Course information material will be placed with both the secondary and postsecondary institutions for feedback from students, faculty and administration.
3. Formative evaluations will be suggested as a method for continuous evaluation.
4. The number and quality of instructional material will be evaluated.
5. Ratings by students.
6. Program evaluation.

#### The Attainment of Competence

1. What are entering levels of performance?
2. How much growth occurs toward performance with various learning experiences?
3. What levels of performance are attained by students?

4. How valid are performance measures compared to other appropriate criteria?
5. How can the selection of minimum standards on performance measures be supported or justified?

The following kinds of information are to be planned and data gathered:

1. Test data for each module, course, etc.
2. Records of sequences and lengths of study and number of attempts to be evaluated as competent.
3. Case studies of students who are not successful and successful in achieving competence.
4. Analysis of measurement techniques to establish validity and reliability.

#### The Administrative/Organizational Climate

1. What day-to-day operations are required for performance-based education?
2. What management training is required for performance-based education?
3. What financial support is available toward the development and implementation of performance-based education?
4. What comprehensive planning procedures are needed for performance-based education?

The following kinds of information are to be planned and data gathered:

1. The identification of administrative activities related to performance-based education.
2. Survey administration to determine perceived needs.
3. Investigate the sources of funds for performance-based education.
4. Survey other schools involved in performance-based education to determine the problems, concerns, and strengths.

#### Objective X

To identify and visit an exemplary site that has developed performance-based educational programs.

## A. Activities and Outcomes

The objective was not stated in the original proposal but is added here to be able to report a visit made to Suburban Hennepin County Area Vocational Technical Center and Normandale Community College, Minneapolis, Minnesota on December 1, 1978.

Suburban Hennepin Voc-Tech Center provided an interesting visitation in many respects. It was obvious that the State of Minnesota was committed to vocational-technical education, i.e., facilities, equipment, free tuition until 20 years of age.

1. Decentralized Learning Resource Areas - philosophically provide Hennepin students ease of access to video, audio, and printed materials for supplementing their educational programs and possibly providing learning alternatives. An excellent cross-section of books, magazines, and media was seen in a shared health/business area. A non-teaching person was provided to assist students. No students were seen utilizing this facility nor were students within any related programs questioned as to its usage.
2. An individualized format was the primary instructional method, varying by program. It appeared to function very well, and I was particularly impressed with the students' level of maturity in such a system. They appeared to be seriously involved in their educational pursuit. A greater exposure to this would provide a better basis for judgment. The concept of manager of learning came through, but many managers appeared to be under-utilizing available resources.

The uniform procedure used for the instructional development, called learning paks are as follows:

- a. An occupational description.
  - b. Occupational competencies.
  - c. Program blocking.
  - d. Task listing sheet.
  - e. Task detailing sheet.
  - f. Student characteristic sheet.
  - g. General and specific performance objectives.
  - h. Evaluation for performance objectives.
3. Staff Development - Special facilities and personnel were provided to assist staff while administratively, instructional staff used two hours a day plus two weeks each year to work on program improvements under an MBO program. Three video taping crews were available for concentrated development as well as other media to support personnel.

4. Variable Entry - Was defined as program entry more than once per year and each program determined how this would occur. It should be noted that single person entry was not a positive aspect for certain programs. Each program or cluster area needs to carefully study what variable entry should mean.

All programs run 12 months a year serving both secondary and post-secondary students. All programs shut-down for a two-week period during the year so that faculty may spend time on curriculum development.

The second college visited was Normandale Community College which is a two-year public community college with programs in liberal arts, pre-professional and occupational programs.

The Individualized Competence Based Education (ICBE) program is an individually tailored, student-designed program leading to the Associate in Arts Degree for transfer to selected upper division institutions. The ICBE program is designed (1) for students desiring an alternative form for their education, (2) for students desiring assessment of experiential learning for credit equivalence, and (3) for students needing non-traditional learning resources or opportunities not ordinarily in the curriculum. The largest areas of student interest have been in the areas of human services, business and liberal studies. (The program is not recommended for those planning to enter pre-law, engineering, pre-med, technical sciences, architecture or for teacher certification.)

The unique qualities of the ICBE program are as follows:

- a. Flexible educational programs enabling students to use the varied learning resources available in the community, educational institutions, business, government agencies, and others.
- b. Opportunities to present non-college learning to be evaluated for credit equivalence, e.g. military schooling, on-the-job training, seminars, professional development, civic competence, and self-generated learning.
- c. Individualized, student-designed degree plans.
- d. Expression of the knowledge and accomplishments of the student in narrative terms as competence statements. (A traditional transcript giving titles and credits is also available.)

## IX. EVALUATION

The secondary and postsecondary faculty and administrators served as critique and review personnel.

A number of factors were examined during the year to determine the success of the project, such as the development of task lists, cooperation of faculty, effectiveness of the process and procedures. The main evaluation technique was comparing stated objectives against results.

The overall evaluation of the projects indicates the objectives were accomplished.

The procedures and process have been well defined for any future projects. The evaluation indicates that objective six was not developed to the quantity that was desired.

The evaluation also indicates some weaknesses in the use of the Indiana State Plan for Performance-Based Education. This has been previously pointed out because of late understanding by the faculty and project staff as to the plan.

The in-service training needed early in the project was not accomplished which also caused some problems with the project.

In the future an evaluation plan will consist of the following components:

1. The effectiveness of the process and procedures in terms of implementing and conducting the curricula.
2. The study of the performance-based curriculum development by survey results from students, instructors and administration.
3. Effects of performance-based curriculum upon student enrollment, student retention and student placement.
4. Effects of performance-based curriculum upon employer and student satisfaction in the employment place.

## X. CONCLUSIONS AND RECOMMENDATIONS

Project analysis and direction must not be slighted at the beginning of the project because the resulting information will be crucial in providing direction for the duration of the project. Decision makers and key participants need to be identified and their commitment secured at the onset of the project.

A project plan needs to be developed that is relevant to the project goals and setting and which includes a functional communication network, a development procedure, and a timeline of tasks. Based on reliable feedback and formative evaluation techniques, the plan should be refined and/or revised as the project continues.

When developing performance-based education curriculum, obtain and review existing sources of competencies and employment trends. Then actively involve an advisory committee as they will be able to provide more relevant information on curriculum/employment needs in the occupation.

If a competency survey is going to be utilized to validate the competencies, a computerized system for analysis and reporting is the most efficient.

Frustration about how, who, and what to do next, can be alleviated through an active, organized project orientation which clearly and concisely communicates the process model and tasks involved to the project staff.

Faculty support as well as budgetary support must be available to adequately develop curriculum in the performance-based format.

An assessment or evaluation procedure which assists in ascertaining project results, outcomes and products should be devised early in the project and followed in order to provide data for accurate revision and refinement of the activities.

The two institutions made good progress towards articulation but the following areas need additional development:

1. Content identification and test development.
2. Field testing the articulation plan.
3. Performance-based curriculum development in new job titles.

The recommendations from the project are related to two areas: problems of implementation and critical elements.

1. Problem of Implementation
  - a. A task force should be appointed from each institution involved in an articulation program to formulate overall objectives and a plan for achieving and implementing the program.
  - b. Effective design and implementation of performance-based curricula involves the use of a wider range of instructional materials than required by more traditional programs. Faculty will also need program materials oriented toward varying student abilities and backgrounds. Such materials must be developed for they are seldom available in a form usable by faculty in a given program. This means that faculty must have the time to develop such resources and the financial support to secure the needed materials. Such demands must be anticipated.
  - c. The performance demands placed on students in a performance-based curriculum differ from the demands of a more traditional program. Acceptable (or competent) work means precisely that. Progress up to the proficiency level marked as competent is necessary but unacceptable for purposes of certification. Students must be led to think in terms of competency and not semester averages or group norms. Evaluation is individual and criterion referenced under a performance-based curriculum and students tend to underestimate the importance of immediate attention to performance levels. Hence, unless students are well prepared for a performance-based curriculum, much friction tends to develop as a result of the unrealistic expectations they bring to the program deriving from past educational experiences.
  - d. There is a tendency in a performance-based curriculum to think of student performance in terms of either competent or incompetent and to neglect detailed and specific feedback to students as to their areas of strength and weakness. In order to combat this tendency, extensive diagnostic assessment and feedback prior to and during any given



curricular program must be undertaken. Students can improve their proficiency only as they become aware of the nature of their deficiencies. Effective diagnostic instruments must be devised and administered and students effectively counseled as to their progress. Otherwise, an unnecessarily rigid and misunderstood system of requirements emerges which benefits neither students nor faculty.

- e. An immediate problem emerges when a performance-based curriculum is initiated and student progress toward competency does not keep pace with the established course offerings. Students who need further work in a given area must be handled. This means a grading (or record) system must be devised which allows for individual progress but also respects faculty time and energy.
- f. Many student competencies can be assessed in limited course experiences or by appropriate single test measuring procedures. However, some competencies will take time to develop and students will need continued feedback on their progress toward those competencies. Longitudinal evaluation structures are necessary.
- g. It is advisable to allow adequate lead time in order to experiment with evaluation criteria and instructional designs in the movement toward performance-based programs. Otherwise, much dissatisfaction may arise from unrealistic evaluation criteria or unmanageable instructional experiences. Such lead time in experimentation will also provide the necessary data for identifying reasonable time expectations in which students can be moved successfully toward competency.

## 2. Critical Elements

- a. Entrance into the establishment of a full performance-based curriculum takes a strong commitment on the part of the administration at both secondary and postsecondary institutes to provide the leadership necessary to see the program through. This leadership must have both a long-range vision and an ability to engage in an extended process of institutional development without losing the vision. It also takes key faculty who are willing to give the time and energy to sustain a long-term project and who can be led to share the vision. These faculty leaders must be capable of motivating others as well as learning themselves. Such endeavors take money for released time for faculty, consultants, and particularly for a person to oversee the program who understands the concept.
- b. A radical change in the reward system--one which will provide more than a pat on the back for those who commit themselves to the program--is essential. Faculty must be convinced that the administration views this change as a major one and one for which rewards are available for efforts at both the change to and maintenance of a new curricular concept.

- c. Implementation of a performance-based curriculum requires faith to take initial steps without seeing clearly the concrete forms of final results. The implementation of a performance-based curriculum is a process which secures changes in faculty self-perceptions and the teaching models utilized. This is a long-range development with the results being genuine change in the design of daily learning experiences and not just in course or curricular labels. But such change is not brought about immediately or easily. It involves the change of persons and their professional attitudes.

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XI. FINANCIAL STATEMENT

See financial statement prepared by Executive Headquarters.

## XII. SUPPLEMENTAL AND APPENDIX

<u>Appendix</u>	<u>Title</u>
A . . . . .	Data Processing Competencies
B . . . . .	Program Matrix and Job Mobility Chart
C . . . . .	Course of Study Secondary and Postsecondary
D . . . . .	Curriculum Matrix for Data Processing
E . . . . .	Examples of Modules
F . . . . .	Student Progress Checklist Examples
G . . . . .	Task Analysis Guide

APPENDIX A  
DATA PROCESSING COMPETENCIES

**DATA PROCESSING COMPETENCIES**  
**COMPUTER PROGRAMMING TECHNOLOGY**



# DATA PROCESSING COMPETENCIES

## COMPETENCIES WHICH HAVE BEEN IDENTIFIED

## VITECS COMPETENCIES WHICH RELATE

### 01 - Data Processing Fundamentals

- \*1. Trace the history of the development of data processing.
- \*2. Describe data processing career paths, duties, and responsibilities.
- \*3. Describe similarities and differences between types of data processing systems.
- \*4. Describe the operations and functions of the principle input and output devices.
- \*5. Interpret punch card code.
- \*6. Interpret EBCDIC Coding system.
- \*7. Interpret hexadecimal coding system
- \*\*8. Operate an Interactive terminal or computer.
- \*9. Operate a batch terminal.
- \*10. Operate data entry equipment.
- \*11. Identify a Cobol, Fortran, PL/I, RPG, and ALC programs. (Secondary does not do ALC)
- \*12. Describe the use of program flowcharts and elementary programming logic in solving a programming problems.

Convert numbers manually from one number system to another.

\* - Taught at both secondary and postsecondary

\*\* - Taught at postsecondary

\*\*\* - Taught at secondary

## DATA PROCESSING COMPETENCIES

### COMPETENCIES WHICH HAVE BEEN IDENTIFIED

### VITECS COMPETENCIES WHICH RELATE

#### \*02 - Programming Skills and Techniques

B1 - Apply computer installation guidelines during analysis.

B2 - Apply organization guidelines during analysis.

B4 - Consult technical references during analysis.

B6 - Determine input format for job.

B7 - Determine machine format for input.

B8 - Determine machine format for output.

B9 - Determine output format for job.

B11 - Examine existing utility programs for application to a job.

D1 - Adapt programs to process on different computer configurations.

D9 - Code programs incorporating standard routines.

D17 - Prepare program routines.

#### 02 - 1 Assembler Language

\*\*1. Identify assembler language characteristics.

\*\*2. Identify assembler language rules.

\*\*3. Create a logic flowchart to analyze a problem using assembler language.

\*\*4. Generate Assembler Source Program.

\*\*5. Transform assembler language code to machine readable form.

\*\*6. Desk check source programs prior to assembly.

E8 - Desk check source programs for keypunching errors prior to assembly or compilation.

Assemble program.

## DATA PROCESSING COMPETENCIES

### COMPETENCIES WHICH HAVE BEEN IDENTIFIED

- \*\*8. Determine errors in assembly source listing.
- \*\*9. Debug program and make corrections.
- \*\*10. Devise and run tests on simulated data to check out program changes and corrections that ensure desirable effects in the program.

### VITECS COMPETENCIES WHICH RELATE

- E9 - Desk check source program listing after assembly or compilation.
- E6 - Debug programs
- A12 - Evaluate program test results.
- A22 - Review completed programs for accuracy.
- E1 - Analyze computer input for test run.
- E2 - Analyze computer output following test run.
- E4 - Analyze program processing efficiency during test run.
- E5 - Correct programming errors discovered during testing.
- E7 - Design test data for use in program testing.
- E10 - Recommend solutions to undesirable conditions discovered during tests.
- E11 - Test programs for accuracy.
- E12 - Test programs for efficiency.
- E13 - Test programs for flexibility.

## DATA PROCESSING COMPETENCIES

### COMPETENCIES WHICH HAVE BEEN IDENTIFIED

- \*\*11. Document a program by appropriate commentary, input-output definition, program listings, test data, methodology, and special features.

8\*

### 02 - 2 Cobol Language

- \*1. Identify cobol language characteristics.
- \*2. Identify cobol language rules.
- \*3. Apply file management techniques.
- \*4. Create a logic flowchart to analyze a problem for the cobol language.
- \*5. Generate cobol source program.
- \*6. Transform cobol program to machine readable form.
- \*7. Desk check.
- \*8. Compile cobol program.

### VITECS COMPETENCIES WHICH RELATE

- A10 - Evaluate program documentation for correct procedures.
- A24 - Review documentation of programs.
- F2 - Develop documentation narrative.
- F3 - Develop listing of all programs.
- F5 - Prepare console operator's run books with necessary instructions and messages.
- F8 - Write definition of input.
- F9 - Write definition of output.
- D9 - Code programs incorporating standard routines.
- D17 - Prepare program routines.

- E8 - Desk check source programs for keypunching errors prior to assembly or compilation.

## DATA PROCESSING COMPETENCIES

### COMPETENCIES WHICH HAVE BEEN IDENTIFIED

- \*9. Determine errors in cobol source listing and make corrections.
- \*10. Devise and run tests on simulated data to check out program changes and corrections that ensure desirable effects in the program.
- \*11. Document a program by appropriate commentary, input-output definition program listings, test data, methodology, and special features.
- \*\*12. Generate cobol programs using structured design and techniques.

### VITECS COMPETENCIES WHICH RELATE

- E9 - Desk check source program listing after assembly or compilation.
- E6 - Debug programs.
- A12 - Evaluate program test results.
- A22 - Review completed programs for accuracy.
- E1 - Analyze computer input for test run.
- E2 - Analyze computer output following test run.
- E4 - Analyze program processing efficiency during test run.
- E5 - Correct programming errors discovered during testing.
- E7 - Design test data for use in program testing.
- E10 - Recommend solutions to undesirable conditions discovered during tests.
- E11 - Test programs for accuracy.
- E12 - Test programs for efficiency.
- E13 - Test programs for flexibility.
- A10 - Evaluate program documentation for correct procedures.
- A24 - Review documentation of programs.
- F2 - Develop documentation narrative.
- F3 - Develop listing of all programs.
- F5 - Prepare console operator's run books with necessary instructions and messages.

# DATA PROCESSING COMPETENCIES

## COMPETENCIES WHICH HAVE BEEN IDENTIFIED

## VITECS COMPETENCIES WHICH RELATE

\*02 - 3 RPG-11 Language

- \*\*1. Identify RPG-11 language characteristics.
- \*2. Identify RPG-11 language rules.
- \*3. Apply file management techniques.
- \*\*4. Create a logic flowchart to analyze a problem for the RPG-11 language.
- \*\*5. Generate RPG-11 code program.
- \*\*6. Transform RPG-11 program to machine readable form.
- \*\*7. Desk check.
- \*\*8. Compile RPG-11 program.
- \*\*9. Determine errors in RPG-11 source listing.

F8 - Write definition of input.

F9 - Write definition of output.

D2 - Code computer applications using a utility report program generator.

09 - Code programs incorporating standard routines.

D17 - Prepare program routines.

E8 - Desk check source programs for keypunching errors prior to assembly or compilation.

E9 - Desk check source program listing after assembly or compilation.

E6 - Debug programs.

# DATA PROCESSING COMPETENCIES

## COMPETENCIES WHICH HAVE BEEN IDENTIFIED

10. Devise and run tests on simulated data to check out program changes and corrections that ensure desirable effects in the program.

11. Document a program by appropriate commentary, input-output definition program listings, test data, methodology, and special features.

## VITECS COMPETENCIES WHICH RELATE

- A12 - Evaluate program test results.
- A22 - Review completed programs for accuracy.
- E1 - Analyze computer input for test run.
- E2 - Analyze computer output following test run.
- E4 - Analyze program processing efficiency during test run.
- E5 - Correct programming errors discovered during testing.
- E7 - Design test data for use in program testing.
- E10 - Recommend solutions to undesirable conditions discovered during tests.
- E11 - Test programs for accuracy.
- E12 - Test programs for efficiency.
- E13 - Test programs for flexibility.
- A10 - Evaluate program documentation for correct procedures.
- A24 - Review documentation of programs.
- F2 - Develop documentation narrative.
- F3 - Develop listing of all programs.
- F5 - Prepare consoleoperator's run books with necessary instructions and messages.
- F8 - Write definition of input.
- F9 - Write definition of output.

## DATA PROCESSING COMPETENCIES

### COMPETENCIES WHICH HAVE BEEN IDENTIFIED

### VITECS COMPETENCIES WHICH RELATE

#### \*03 - Utilization of Programming and Debugging Techniques

D15 - Determine how data records are to be processed.

\*\*1. Utilize data base organization.

D3 - Code data-base update programs.

\*2. Utilize sequential access method.

\*3. Utilize Indexed sequential access method.

\*4. Utilize random access method.

\*5. Utilize virtual storage access method.

\*6. Utilize blocking.

\*7. Utilize checksumming, hashing and parity.

\*8. Utilize packing and unpacking.

\*9. Utilize sequential search.

\*10. Utilize binary search.

\*11. Utilize existing sort/merge programs with control cards.

D7 - Code programs for inquiry device.

\*12. Utilize modular organization of a program and its data.

\*13. Utilize table driven program and data driven program.

\*14. Utilize programmed switches.

\*\*15. Utilize structured coding.

\*16. Utilize table look up for finding function values.

\*17. Utilize packed decimal arithmetic.



# DATA PROCESSING COMPETENCIES

## COMPETENCIES WHICH HAVE BEEN IDENTIFIED

- \*\*18. Utilize mode conversion rules and mixed mode arithmetic.
- \*\*19. Utilize error returns from subroutines.
- \*20. Utilize traces, snapshots, and diagnostic messages.
- \*\*21. Utilize cross-reference table, memory and file dumps.
- \*22. Code and develop subroutines.
- \*23. Correct program when problem occurs.
- \*24. Update existing programs with changes.

## VITECS COMPETENCIES WHICH RELATE

- E15 - Utilize memory maps in testing.
- E3 - Analyze core dumps.
- D11 - Code subroutines.
- D16 - Develop subroutines.
- G3 - Correct program when "Blow Up" occurs.
- G9 - Update existing programs with changes.

COMPETENCIES WHICH HAVE BEEN IDENTIFIED

VITECS COMPETENCIES WHICH RELATE

04 - Problem Solving Techniques and Concepts

- \*1. Identify flowchart symbols and tools.
- \*2. Prepare detailed flowcharts from general flowcharts and program specifications.
- \*\*3. Identify decision table concepts.
- \*\*4. Prepare decision tables from general flowcharts and program specifications.
- \*5. Identify and apply JCL requirements.
- \*6. Determine logic sequence of programs.
- \*7. Prepare systems flowchart.
- \*8. Prepare input/output operations flowchart for machine operators.

C5 - Prepare detail flowchart.

A23 - Review detail flowcharts for preparation of programs.

F4 - Develop program job control statements.

C1 - Detail all specified calculations.

C7 - Prepare systems flowchart.

C6 - Prepare input/output operations flowchart for machine operators.

# DATA PROCESSING COMPETENCIES

## COMPETENCIES WHICH HAVE BEEN IDENTIFIED

## VITECS COMPETENCIES WHICH RELATE

### 05 - Advanced Data Processing Concepts

- \*1. Describe type of data communications system.
- \*2. Describe advantages and disadvantages of data communications systems.
- \*3. Describe data communications applications.
- \*\*4. Design a data communications network.
- \*\*5. Identify data base management components and functions.
- \*6. Identify information systems analysis concepts.
- \*7. Analyze and design forms.
- \*8. Identify card-tape-disk operating systems.
- \*\*9. Identify virtual storage and virtual memory concepts.
- \*10. Demonstrate detailed systems investigation and analysis techniques.
- \*11. Evaluate system efficiency, effectiveness and cost.
- \*\*12. Use various scheduling technique as PERT and CPM.

B5 - Design record layouts.

**DATA PROCESSING COMPEJENCIES**

**COMPUTER OPERATIONS**

71

## COMPUTER OPERATIONS COMPETENCE

### COMPETENCIES WHICH HAVE BEEN IDENTIFIED

#### 01 - Supervising Data Service

- \*\*1. Analyze company operations for beneficial use of the computer.
- \*\*2. Analyze data processed for modification and/or combination reports.
- \*3. Analyze functional area reports for error correction.
- \*\*4. Assist in planning facility modification.
- \*\*5. Assist with data processing facility staffing.
- \*\*6. Consult with supervisors concerning problem areas.
- \*\*7. Coordinate activities with data control unit.
- \*\*8. Determine destruction dates of computer files.
- \*9. Handle special requests for data processing services.
- \*\*10. Update training records for data services personnel.
- \*11. Make periodic checks to clarify correctness of output.
- \*\*12. Monitor compliance with machine utilization log procedures.
- \*13. Monitor the meeting of deadlines.
- \*\*14. Notify appropriate person or office of new or revised reporting requirements.
- \*\*15. Orient newly assigned data service personnel.
- \*\*16. Plan and schedule routine data services work assignments.
- \*\*17. Prepare correspondence concerning data services.

\* - Taught at both secondary and postsecondary

\*\* - Taught at postsecondary

\*\*\* - Taught at secondary

## COMPUTER OPERATIONS COMPETENCE

### COMPETENCIES WHICH HAVE BEEN IDENTIFIED

#### 02 - Supervising Automatic Data Processing Operations

- \*1. Assign priorities to computer jobs.
- \*\*\*2. Brief oncoming shift supervisor.
- \*\*3. Coordinate scheduling of machine work load.
- \*4. Determine cause of faulty output.
- \*5. Develop computer operating instructions.
- \*\*6. Maintain operating manuals and directives affecting machine room functions.
- \*\*7. Maintain records of machine performance.
- \*\*8. Monitor jobs processed and pending.
- \*\*9. Orient new operators to basic services offered by the data processing center.
- \*\*\*10. Conduct on-the-job training in equipment operations.
- \*11. Instruct new operators in the use of operations manuals.

#### 03 - Performing Data Control Functions

- \*\*1. Analyze data processed to make sure that desired information is obtained.
- \*\*\*2. Analyze documentation for completeness and accuracy.
- \*\*\*3. Arrange reruns to correct final output.
- \*\*\*4. Balance output data.
- \*\*\*5. Check error with appropriate staff and arrange for correction.
- \*\*\*6. Control basic input into data processing system.

## COMPUTER OPERATIONS COMPETENCE

### COMPETENCIES WHICH HAVE BEEN IDENTIFIED

- \*\*\*7. Coordinate functions of data control with operations.
- \*\*\*8. Distribute printed output to users.
- \*\*9. Develop procedures relative to computer input and output.
- \*\*\*10. Maintain files pertaining to data systems.
- \*\*\*11. Plan card layouts.
- \*\*\*12. Code input data for computer entry.
- \*\*\*13. Provide input on jobs to operations unit.
- \*\*\*14. Release jobs for processing.
- \*\*\*15. Schedule keypunching.
- \*\*\*16. Screen cards for errors and initiate corrections.
- \*\*\*17. Store cards that have been removed from machine.
- \*\*\*18. Train personnel in methods of handling output.

### 04 - Preparing for Computer Processing Operations

- \*\*\*1. Clear memory on computer.
- \*2. Determine the availability of the peripheral devices needed for a specific job.
- \*3. Determine the forms needed for job.
- \*4. Determine priority of jobs to be run on the computer.
- \*5. Determine steps in running a job.
- \*6. Determine type of information needed to run a job.
- \*\*7. Locate tapes in storage.

## COMPUTER OPERATIONS COMPETENCE

### COMPETENCIES WHICH HAVE BEEN IDENTIFIED

\*8. Power up computer and I/O devices.

\*\*\*9. Receive turnover on jobs from another shift.

\*\*10. Schedule peripheral devices to be used for jobs.

### 05 - Operating Electronic Computers

\*1. Activate reader to read job into the system.

### 06 - Preparing for Computer Processing Operations

\*1. Check JCL to see that it corresponds to the job to be run.

### 07 - Operating Electronic Computers

\*1. Check output material to determine that work is complete.

\*2. Catalog card input.

\*3. Communicate with the computer through the console.

\*4. Determine cause of incorrect output.

\*5. Determine cause of a machine malfunction.

\*6. Initialize disk pack.

\*\*7. Initialize tape.

\*8. Load the supervisor.

\*9. Interpret display lights on computer.

\*10. Load JCL cards and input data into reader.

\*11. Load programs.

\*12. Make necessary changes in JCL cards.



## COMPUTER OPERATIONS COMPETENCE

### COMPETENCIES WHICH HAVE BEEN IDENTIFIED

- \*13. Observe for abnormal termination of job.
- \*14. Observe for faulty output.
- \*15. Observe for verification printouts which indicate end of job or job steps.
- \*16. Perform halt/restart procedures.
- \*17. Reload the supervisor.
- \*18. Remove JCL cards from job deck.
- \*\*\*19. Remove output from machine.
- \*20. Run test of new program for systems/programming.
- \*\*\*21. Set control switches on central processor.
- \*\*\*22. Set load unit address.
- \*\*\*23. Use a sort-merge utility program to sort cards.
- \*24. Utilize operator's manuals.
- \*25. Utilize utility program.

### 08 - Operating Computer Peripheral Equipment

- \*1. Assign disk drives to appropriate logical address.
- \*2. Determine proper forms for printer.
- \*3. Determine carriage tape needed to control spacing/skipping of printer.
- \*4. Load cards into card reader or card punch.
- \*\*\*5. Load continuous forms in printer.
- \*\*\*6. Load paper tape on paper tape reader.

## COMPUTER OPERATIONS COMPETENCE

### COMPETENCIES WHICH HAVE BEEN IDENTIFIED

- \*\*\*7. Operate card reader or card punch.
- \*\*\*8. Operate disk drive.
- \*\*\*9. Perform peripheral conversion operations.
- \*\*\*10. Place carriage control tape in printer.
- \*\*11. Punch carriage tapes to control skipping and spacing of forms.
- \*\*\*12. Adjust print density.

### 09 - Operating Unit Record Equipment

- \*1. Correct cards on the keypunch.
- \*2. Key punch cards from source documents.
- \*\*\*3. Load card hopper.
- \*\*\*4. Mount program card on drum of keypunch machine.
- \*\*\*5. Operate interpreter to print data on punched cards.
- \*\*\*6. Operate reproducer to gangpunch cards.
- \*7. Operate reproducer to reproduce cards.
- \*\*\*8. Operate sorter for alphabetic sorting.
- \*\*\*9. Operate sorter for numeric sorting.
- \*\*\*10. Operate sorter to select specified cards.
- \*\*\*11. Punch Program card for keypunching from source document.
- \*12. Reproduce cards on the keypunch.
- \*\*\*13. Select specified wired control panel for use.

## COMPUTER OPERATIONS COMPETENCE

### COMPETENCIES WHICH HAVE BEEN IDENTIFIED

- \*14. Set up keypunch machine for punching cards.
- \*\*\*15. Verify cards to check accuracy of keypunching.
- \*16. Visually interpret punched cards.
- \*\*\*17. Wire interpreter control panel.
- \*\*\*18. Wire reproducer control panel.

### 010 - Maintaining Equipment and Records

- \*\*\*1. Clear card jams.
- \*\*2. Cut tape and position new load point marker.
- \*\*3. Handle service calls on equipment.
- \*4. Maintain card files for JCL cards.
- \*5. Maintain computer log.
- \*6. Maintain files on procedural changes.
- \*7. Perform routine housekeeping duties.
- \*8. Perform routine operator maintenance on machines.
- \*9. Place cards, tape, or disk packs in storage.
- \*\*\*10. Prepare external labels for cataloging files.
- \*\*\*11. Separate printed output forms using decollator.

**DATA PROCESSING COMPETENCIES**

**KEY PUNCH OPERATOR**

## KEY PUNCH OPERATOR COMPETENCIES

### COMPETENCIES WHICH HAVE BEEN IDENTIFIED

#### 01 - Key Device

- \*1. Recognize a data recording problem as it pertains to key device equipment and program the equipment satisfactorily to meet the recording problem.
- \*2. Identify the care, functions, and operations of the key device and verifying equipment.
- \*3. Develop skill through progressively difficult practice exercises and simulated business data recording problems.
- \*4. Comprehend and use articulately the commonly used data processing terms associated with key device equipment.
- \*5. Demonstrate specified standards of speed and accuracy on key device equipment which will enable the student to gain entry-level employment.
- \*6. Develop keypunch verification sheet.

- \* - Taught at both secondary and postsecondary
- \*\* - Taught at postsecondary
- \*\*\* - Taught at secondary

GENERAL AND RELATED COMPETENCIES  
FOR  
COMPUTER PROGRAMMING TECHNOLOGY

## DATA PROCESSING COMPETENCIES

### COMPETENCIES WHICH HAVE BEEN IDENTIFIED

#### Q6 - Human Relations And Supervisory Skills

1. Demonstrate effective listening.
2. Demonstrate gentle and precise questioning.
3. Accept responsibility for own mistakes.
4. Demonstrate ability to work as a team member with praise and criticism being given to the team rather than to the individual.
5. Demonstrate initiative and persistence to accomplish assignments.
6. Apply realistic goal setting.
7. Interact with customer and user personnel to establish programming requirements and data flows.
8. Consult with programming associates to determine detailed design and to discuss required data designs and program flows.
9. Consult with colleagues or supervisors for the purpose of acquiring technical programming guidance or system knowledge.
10. Demonstrate adaptability to various tasks and situations.
11. Consult with operations on adequate preparation of computer operating instructions.
12. Consult with system designers on programming requirements of new systems.

### VITECS COMPETENCIES WHICH RELATE

A13 - Function as part of a team to solve user problems in information processing.

A2 - Consult with operations on adequate preparation of computer operating instructions.

A3 - Consult with systems designers on programming requirements of new system(s).

## DATA PROCESSING, COMPETENCIES

### COMPETENCIES WHICH HAVE BEEN IDENTIFIED

13. Recommend modification of systems to management.
14. Recommend modification of systems to users.
15. Review programs for adherence to programming standards.

### VITECS COMPETENCIES WHICH RELATE

- A20 - Recommend modification of systems to management.
- A21 - Recommend modifications of systems to users.
- A25 - Review programs for adherence to programming standards.



## DATA PROCESSING COMPETENCIES

### 07 -- Mathematics

1. Add, subtract, multiply, and divide whole numbers.
2. Add, subtract, multiply and divide common fractions (including mixed numbers).
3. Add, subtract, multiply and divide decimal numbers.
4. Convert fractions to decimals.
5. Convert decimals to fractions.
6. Simplify arithmetic expressions involving addition and/or subtraction and/or multiplication and/or division using the proper order for all operations.
7. Write and simplify ratios.
8. Change a percent to a decimal or fraction.
9. Change a decimal or fraction to a percent.
10. Solve percentage, base, rate problems for any one of the three.
11. Add, subtract, multiply and divide signed numbers.
12. Raise a number to a positive whole number power or negative whole number power.
13. Find the square root of a positive number.
14. Perform fundamental operations using powers of ten.
15. Perform fundamental operations using scientific notation.
16. Read instruments (gauges and meters).
17. Use the rules of measurement (accuracy, precision) to properly round off answers to arithmetic problems.
18. Use the English system of measurement.
19. Use the metric system of measurement.

20. Convert measurements from one unit to another within each system and between the English and metric systems.
21. Evaluate algebraic expressions.
22. Add, subtract, multiply and divide single term algebraic expressions.
23. Simplify expressions involving grouping symbols (parentheses, brackets, braces).
24. Add, subtract, multiply and divide polynomial algebraic expressions.
25. Solve non-fractional linear equations in one unknown.
26. Solve work problems using non-fractional linear equations.
27. Use formulas to solve for an unknown.
28. Graph a linear equation in two unknowns.
29. Solve two equations/two unknown problems by graphing, addition-subtraction method and substitution method.
30. Solve word problems using two equations and two unknowns.
31. Understand binary, octal and hexadecimal number systems.
32. Add, subtract and multiply binary numbers.
33. Add and subtract octal and hexadecimal numbers.
34. Use set notation to describe well-defined sets.
35. Combine sets using union and intersection.
36. Find complement and subsets of a given set.
37. Define common symbols used in flowcharting.
38. Given a verbal or written description, construct a flowchart.
39. Given a problem in set notation, construct a flowchart.
40. Write truth tables using and, or, negation, if-then, if-and-only-if.
41. Given a truth table, construct a flowchart.

42. Simplify using the summation (  $\Sigma$  ) symbol.
43. Organize data using charts, tables, graphs (bar, line, circle) and histograms.
44. Find mean, median and mode of ungrouped data.
45. Find mean, median and modal class of grouped data.
46. Find standard deviation for ungrouped and grouped data.
47. Change a ran. score to a score.
48. Find the value of a combination.
49. Find the value of a per
50. Define and use the term probability.
51. Write a
52. Define a normal distribution and its characteristics.
53. Use the normal distribution to approximate a
54. Use hypotheses testing to evaluate sample data.

71

## DATA PROCESSING COMPETENCIES

### COMPETENCIES WHICH HAVE BEEN IDENTIFIED

#### 08 - Communication Skills

1. Apply the convention of English grammar, usage and styles.
2. Apply the convention of punctuation and spelling.
3. Demonstrate reading comprehension skills.
4. Interpret data in a graphic aid.
5. Write a letter of application.
6. Write resume.
7. Prepare visual and graphic aids.
8. Compose routine informational communications.
9. Compose conciliatory communications.
10. Compose negative (bad news) communications.
11. Compose persuasive communications.
12. Apply the principles of effective reporting.
13. Compose memos.
14. Assess own communicative image.
15. Deliver an informative oral presentation.
16. Conduct an oral training presentation.
17. Deliver a persuasive oral presentation.
18. Apply principles of effective conference communications.
19. Apply principles of effective communications in interviews.

72

## DATA PROCESSING COMPETENCIES

### COMPETENCIES WHICH HAVE BEEN IDENTIFIED

20. Demonstrate comprehension of verbal and non-verbal communication.
21. Demonstrate active listening skills.

73

## DATA PROCESSING COMPETENCIES

### COMPETENCIES WHICH HAVE BEEN IDENTIFIED

### VITECS COMPETENCIES WHICH RELATE

#### 09 - Accounting Skills

1. Construct a balance sheet.
2. Journalize transactions.
3. Prepare income statement, balance sheet, and capital statement.
4. Prepare closing entries.
5. Journalize special journals and post to ledgers.
6. Make adjusting entries, journalize, and post.
7. Complete the worksheet, make closing entries, and take postclosing trial balance.
8. Make reversing entries.
9. Prepare individual income tax returns.
10. Determine audit objective and opinions.
11. Complete a payroll journal including the calculation of amounts of federal income tax, state income tax, and social security tax to be withheld.
12. Record the expenses and liabilities arising from (a) weekly payroll disbursement including the required monthly deposit of income and FICA taxes in the bank, (b) computation of the amount of state unemployment tax for a quarterly period.