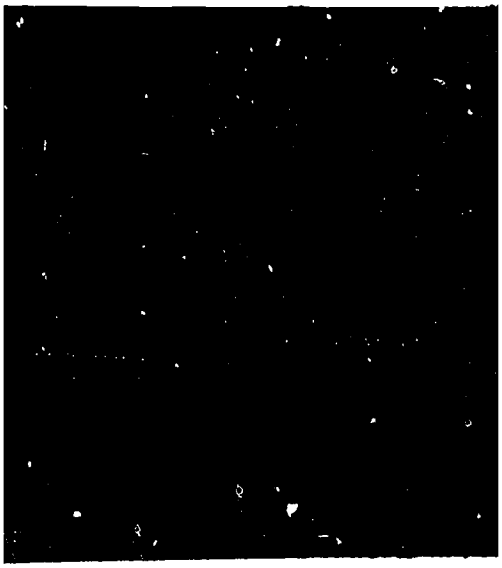

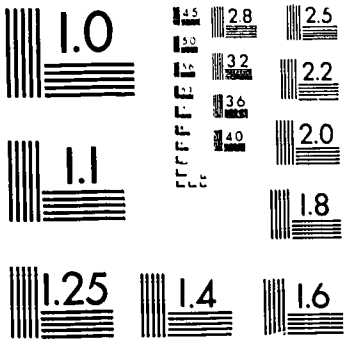

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ABSTRACT

The vocational education programs in the 14 Southern Regional Education Board (SREB) member states were examined in order to obtain an overview of the objectives of vocational education and the coordination of vocational programs between secondary and postsecondary institutions in those states. It was determined that 3.5 million high school students in the SREB region were enrolled in vocational education programs in 1980-81. While the fundamental purpose of vocational education, at least from the federal perspective, is to prepare individuals for gainful employment, many SREB member states have developed their own philosophies and directions for vocational education. Thus, the policies of different states reflect varying degrees of concern for basic skills preparation, occupationally specific training, on-the-job and cooperative training programs, and exploratory or prevocational education. To maximize the efficient delivery of occupational training, educational policymakers and planners in SREB member states must coordinate the activities of the secondary and postsecondary sectors. The development of adequate coordination among secondary and postsecondary institutions in any one area requires that planners define articulation issues, reassess the relevancy of program offerings to market needs, and address the issues of program capacity and governance. (MN)

Issues in Vocational Education

Eva C. Galambos

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SREB

Southern Regional Education Board

Foreword

The SREB Task Force on Higher Education and the Schools, in its 1983 assessment of educational progress in the South relative to its 1981 recommendations, commented, "Perhaps in no other area addressed in *The Need for Quality* has so little progress been made as in improving vocational education in secondary and postsecondary institutions." The successor group to the Task Force, SREB's new Commission for Educational Quality, suggests that many important decisions for improving vocational education in the region will not be made until the issues are more clearly drawn and discussed by state policymakers. This report by Dr. Eva Galambos is designed to help states define the issues and reach decisions.

Vocational education is currently under considerable scrutiny on the national scene, in preparation for possible reauthorization of the federal vocational program. While much discussion centers on funding the various sections of the federal acts that support particular objectives, such as sex equity, training of the disadvantaged, or consumer and homemaking education, this SREB report focuses on the more generic aspects of vocational education, such as the basic purpose of the vocational programs in secondary schools and questions of unnecessary duplication.

Legislators and other policymakers have voiced concern about duplication of publicly-funded occupational programs. This report is premised on the assumption that states must make more precise decisions about the purpose of vocational education in the secondary schools before they can proceed with elimination of unwarranted duplication between programs offered at the high school level and in various types of postsecondary programs.

For every dollar that the federal government spends on vocational education, states and local districts spend at least eight dollars. Given

this substantial financial commitment, it would appear reasonable that state and local policymakers would want to assume the major responsibility in shaping the direction of programs in their states.

A preliminary draft of this report was reviewed by Dr. Stuart Rosenfeld, Dr. Gene Bottoms, Dr. Lamont Carter, and Dr. John Lawrence. Acknowledgment is made of the valuable criticisms offered by each of the reviewers. The conclusions and opinions expressed in the report are, of course, the responsibility of the author.

Winfred L. Godwin
President

Table of Contents

The SREB Task Force on Higher Education and the Schools, in its initial report in 1981 and again in 1983, called for state reviews of vocational education systems. In its 1983 report, *Meeting The Need for Quality: Action in the South*, the Task Force specified that such reviews, "should include evaluation of the objectives of vocational education in the high schools, of duplicated occupational offerings by the various sectors of education, and of the market relevancy and quality standards of available programs." The Task Force also recommended that SREB should delineate the issues on directions for improving vocational education.

The following report is a response to the latter recommendation, and addresses the following issues.

Policy Issues in Vocational Education

1. What is the primary purpose of vocational education in the high schools: a) pre-vocational and career exploration, b) training for specific trades, or c) basic skills instruction through vocational applications?
2. Can secondary schools successfully address all three objectives, or should the mission of a school be limited?
3. Is it realistic to expect the numerous comprehensive high schools to offer quality vocational programs that entail preparation for specific trades? If so, in what variety?
4. What opportunities exist to expand on-the-job training (cooperative training) alternatives to job skills training within comprehensive high schools?
5. "Consumer and homemaking" and many of the industrial arts courses, from an employment standpoint, may be more akin to general education than to vocational preparation. Might these courses be considered as electives in the regular general education program of secondary schools, with a shift of the vocational funds that are now allocated for these areas to occupationally specific courses?
6. Can basic skills instruction be integrated into vocational courses? Will this improve basic skills instruction for students who have limited interest in academic subjects?

7. Is the image of vocational education in the high school enhanced through opportunities for joint enrollment of high school students in postsecondary vocational programs?
8. If the mission of both high schools and postsecondary institutions is to offer training for specific trades, what opportunities exist for improved utilization of available resources and programs by both sectors, and for facilitating progress of students?
9. For both secondary and postsecondary levels, how relevant are current program offerings to market demands? Does the current share of vocational enrollments in technical programs (below 1 percent and 7 percent at the secondary and postsecondary levels, respectively) reflect the realities of future labor market demands?
10. To what extent is analysis of the foregoing questions dependent on forms of governance?

This report focuses on the objectives of vocational education and the coordination of programs between secondary and postsecondary institutions. These major issues are within the purview of state policy. In 1980-81, state and local governments spent $8 for every dollar the federal government spent for vocational education; states have a heavy stake in how those funds are used.

This report is not a comprehensive analysis of all the issues concerning vocational education. For example, important questions relating to the distribution of vocational students by race and sex are not addressed. Neither is the specific issue of intrastate distribution of vocational education funds considered, except indirectly through analysis of the distribution of funded students who are enrolled across programs and at various levels of the educational establishment.

Section I is an overview of occupational offerings in both secondary and postsecondary education. Section II deals with vocational education in the high schools, with special emphasis on various purposes of vocational education at that level. Section III deals with coordination of vocational education between secondary and postsecondary institutions, and within the postsecondary sector. Relevancy of programs to labor market needs and the extent to which programs are fully utilized are included as factors that should enter into decisions on whether there is justification for duplication of programs.

Section I

Where Is Occupational Preparation Offered?

Current state efforts to improve the effectiveness of vocational education generally begin with the problem of better coordination between the variety of institutions that offer occupational training—some 27,000 institutions in the United States offer occupational training. The scope of this variety is illustrated in Table 1. The inventory in Table 1 does not include several other agencies, such as state correctional facilities or manpower training programs, which also offer occupational preparation.

In 1980-81, private schools accounted for 76 percent of total enrollments in *noncollegiate* postsecondary schools with occupational programs. Of the private schools, 88 percent are classified as "proprietary."

Concern about the fragmented condition of occupational training has led some states to analyze this problem. A 1982 report commissioned by the Texas legislature identifies 16 state agencies and five state commissions having state statutory responsibility or authority for provision of occupational training.

Occupational Training under the Vocational Education Act

The number of institutions that provide programs funded in part by the federal Vocational Education Act (VEA) is less than the total number that offer occupational preparation. At the secondary level, most public comprehensive and vocational high schools and the area vocational centers are partially funded under VEA. At the postsecondary level, about three-fourths of all two-year institutions offer VEA programs. Smaller shares of public noncollegiate schools receive VEA funds and are covered by the state vocational education plans.

Vocational education funds going to four-year institutions that offer associate degree occupational programs are minimal. Virtually none of the private, postsecondary, noncollegiate schools receive VEA funds. The state plans for vocational education determine participation of institutions under VEA, given the constraints of the federal legislation.

Table 1

Institutions With Occupational Programs, United States

Secondary Institutions	Public	Private
General High Schools	10,851	586
Comprehensive High Schools	4,879	
Vocational High Schools	225	
Area Vocational Centers	1,395	
Total Secondary	17,350	586
Postsecondary Institutions		
Noncollegiate		
Vocational-Technical	611	123
Technical Institutes	8	149
Business-Commercial	5	1,282
Cosmetology/Barber	6	2,171
Flight Schools	7	792
Trade Schools	11	736
Art/Design Schools	1	247
Hospital/Allied Health	206	941
Other Schools	1	297
Collegiate		
Community/Junior College	820	197
College/University	228	369
Total Postsecondary	1,904	7,304

Sources: Gene Bottoms and Patricia Copa, "A Perspective on Vocational Education Today," *Phi Delta Kappan*, January 1983, p. 350; *Survey of Non-collegiate Postsecondary Institutions Offering Occupational Programs*, National Center for Education Statistics, Washington, D.C., 1983; and *The Condition of Vocational Education*, National Center for Education Statistics, 1981, p. 8.

Total vocational education enrollment in the United States in 1980-81 was 16.3 million, with 62 percent of the total in secondary schools, and 38 percent in postsecondary institutions. Two-thirds of the postsecondary enrollments are in degree-granting institutions, which are primarily community or junior colleges and technical institutions.

The percentage distribution for the region of vocational education enrollments, by secondary and postsecondary institutions is shown in Table 2. The distribution of funding for vocational education between secondary and postsecondary institutions parallels the enrollment percentages. For 1980-81, the national split for total vocational education expenditures was 64 percent for secondary programs and 36 percent for postsecondary ones; the regional distribution is similar—67 percent secondary, 33 percent postsecondary. North Carolina and Virginia show the sharpest divergence, in opposite directions, from this pattern—28 percent and 86 percent, as the respective shares for secondary vocational education.

The distribution of postsecondary enrollments in 1980-81 by program areas is shown in Table 3. This distribution reflects only those enrollments that are funded by the Vocational Education Act, and is not the same as the distribution that results when all postsecondary occupational programs are examined. The distribution of enrollments in Table 3 includes what are designated in the VEA terminology as both "occupationally specific" and "non-occupationally specific." Occupationally specific programs train for specific occupations, while non-occupationally specific enrollments at the postsecondary level largely represent students who have not yet narrowed their majors to a specific specialty within a broad field. Yet, for the most part, these students are in the process of preparing themselves for specific occupations.

Coordination of vocational education across over 19,000 institutions participating in the VEA programs, with some 83 percent of them being secondary schools, depends initially on defining the roles of vocational education in the various sectors. If the role of the high school in vocational education is to train for specific occupations, which clearly

Table 2

Vocational Education Enrollment Distribution, 1980-81

	Total Enrollment		Postsecondary Enrollment by Type of Institution	
	Secondary	Postsecondary	Degree Granting	Other
United States	62%	38%	66%	34%
SREB Region	62	38	57	43
Alabama	71	29	21	79
Arkansas	76	24	1	99
Florida	64	36	49	51
Georgia	77	23	4	96
Kentucky	61	39	6	84
Louisiana	67	33	0	100
Maryland	68	32	73	27
Mississippi	60	40	28	72
North Carolina	43	57	100	0
South Carolina	67	33	61	39
Tennessee	60	40	43	57
Texas	54	46	79	21
Virginia	63	37	64	36
West Virginia	81	19	70	30

Source: U.S. Department of Education, National Center for Education Statistics, Vocational Education Data System, preliminary data, December 1, 1982.

is the mission of postsecondary vocational education, there may be duplication of effort between the two sectors. If the purpose of vocational education at the high school level is quite different from the purpose in postsecondary institutions, then duplication would appear less likely. Section II of this report delves into vocational education at the high school because until the purpose at that level is defined, a rational division of labor will be difficult.

Table 3

Postsecondary Vocational Enrollments, By Occupational Area, 1980-81

	Agriculture	Distribution	Health	Occupational Home Economics	Office Occupations	Technical	Trade & Industry	Consumer & Home-making	Industrial Arts	Other	Total*
United States	2.8%	8.6%	11.8%	3.1%	24.0%	7.4%	29.4%	10.0%	0.1%	2.9%	100%
SREB Region	2.5	6.8	13.0	3.0	20.8	6.3	30.8	12.2	——	4.9	100
Alabama	2.0	2.7	12.6	2.8	24.1	3.4	48.0	——	——	4.1	100
Arkansas	2.0	1.7	19.3	3.2	19.8	0.1	47.7	6.1	——	0.1	100
Florida	1.4	9.2	16.8	6.7	18.1	4.3	26.3	10.9	——	6.3	100
Georgia	0.5	4.0	9.6	5.0	23.6	5.7	33.1	10.0	——	8.5	100
Kentucky	4.0	2.3	5.5	0.9	8.7	0.8	54.4	17.7	——	5.3	100
Louisiana	0.3	2.5	13.2	1.3	25.7	2.3	54.6	——	——	——	100
Maryland	0.6	5.3	10.2	0.3	40.2	17.8	15.3	10.0	——	0.3	100
Mississippi	2.8	5.9	12.7	2.6	21.7	11.2	43.1	——	——	——	100
North Carolina	1.8	6.9	17.5	3.9	16.4	5.5	30.3	13.6	——	2.0	100
South Carolina	8.8	3.4	9.1	0.7	27.8	13.6	26.7	9.9	——	——	100
Tennessee	3.4	3.1	5.5	1.5	24.8	11.9	15.6	33.6	——	0.7	100
Texas	2.5	11.3	10.0	1.9	21.4	6.6	32.1	13.6	0.1	0.5	100
Virginia	3.1	8.2	3.9	0.3	23.1	7.5	18.8	5.4	0.3	29.3	100
West Virginia	2.8	3.2	24.2	0.7	16.8	7.4	26.0	7.5	——	11.3	100

*Totals may not equal 100% due to rounding.

Source: U.S. Department of Education, National Center for Education Statistics, Vocational Education Data System, May 1, 1983.

Section II

Vocational Education in the High School

An Overview

Approximately 3.5 million high school students in the Southern region in 1980-81 were enrolled in vocational education programs administered under the Vocational Education Act.*

Taken at face value, this means that almost two-thirds of all students in grades 7-12 were enrolled in at least one vocational education course. This proportion is somewhat exaggerated because the Vocational Education Data System has not eliminated all double-counting of nonoccupationally specific courses, such as industrial arts and home economics. Many of these enrollments represent students who are not pursuing a vocational program. College-bound and general program students take vocational courses as electives (see Table 4).

Another measure of participation in high school vocational education programs comes from the National Longitudinal Study of the Class of 1980. The proportions of public school graduates who reported themselves by type of high school program they pursued are as follows:

Academic	34%
General	39
Vocational	27

The percentage of students who reported taking at least 2 years of vocational curriculum is shown below:

	All Students	Vocational Program Students
Business Sales	27%	42%
Trade Industry	13	26
Technical	10	17
Other	12	27

These proportions indicate that most students who pursued a vocational program did not take two years of such coursework.

*This section deals with enrollments funded under the VEA when reference is made to vocational education. Some data collection problems of vocational education enrollments persist, but the data presented herein are generally congruent.

Most high school students do not concentrate their vocational studies in one occupational area. An analysis of the transcripts of a set of high school graduates classified them by their participation in vocational courses.[2] "Concentrators," defined as having taken six or more Carnegie units (usually over three years) in a vocational specialty, account for only 11 percent of all graduates. "Limited Concentrators," who averaged three units in a specialty area, represent another 18 percent.

Table 4
Vocational Education Enrollments in Secondary Schools, 1980-81

	Vocational Education Enrollments	Vocational Education as Percent of Enrollment in Grades 7-12	Occupationally Specific Enrollments as Percent of Vocational Education Enrollments
United States	10,065,664	60%	29%
SREB Region	3,511,670	64	26
Alabama	162,004	47	36
Arkansas	104,562	51	30
Florida	750,842	104*	17
Georgia	433,899	105*	22
Kentucky	190,785	84	27
Louisiana	151,268	63	22
Maryland	182,737	48	33
Mississippi	112,426	54	22
North Carolina	277,796	80	28
South Carolina	141,696	73	38
Tennessee	192,650	57	35
Texas	487,720	38	28
Virginia	250,629	65	27
West Virginia	72,656	48	29

* Vocational education enrollments in the non-occupationally specific programs (e.g., home economics and industrial arts) may not be headcount enrollments in some states, and may double-count individual students. This accounts for the percentages in excess of 100%, and is probably also a factor in states with less than 100%.

Sources: U.S. Department of Education, National Center for Education Statistics, preliminary data, December 1, 1982, and National Education Association, *Estimates of School Statistics, 1981-82*

The remaining three-fifths, however, is comprised of those who took no vocational courses (22 percent) or who took one or more courses—not always in the same specialty—for personal or exploratory purposes.

Of total high school vocational enrollments in the region, only 26 percent are in occupationally specific programs. By federal definition, occupationally specific courses include only those taught at the 11th and 12th grade levels, and exclude all enrollments in industrial arts and consumer and homemaking courses.

The national distribution, by programs, of the 71 percent in the non-occupationally specific secondary vocational programs is shown in Table 5.

Vocational education in occupational areas below the 11th grade and in industrial arts are designated as "pre-vocational" by vocational educators. These courses are designed to introduce participants to broad vocational areas and to the tools, materials, and processes used in each.

In summary, nationally, of all high school students in vocational courses, 29 percent are enrolled in occupationally specific courses in the 11th and 12th grades, 40 percent are taking consumer and homemaking and industrial arts (which are not meant to be occupationally specific preparation), and the remaining 31 percent are younger high school students enrolled in occupationally specific programs below the 11th grade, where such subjects do not count as "occupationally specific." The regional distribution is similar.

The distribution of the occupationally specific high school enrollments, by program, is shown in Table 6. Office occupations (with predominantly female enrollments) represent the largest program area; trade and industry (primarily the traditional "blue collar" occupations, consisting mostly of male students) is the second largest group. Less than one percent nationally and regionally are enrolled in technical programs—areas that relate to the rapid expansion in high technology occupations—although this proportion is higher when some of the technically oriented programs in the office occupations are included.

By contrast, agriculture, which covers agribusiness as well as agricultural production, represents one-tenth of occupationally specific enrollments. Although enrollments have declined in this area in recent years, the magnitude of the programs does not appear to reflect labor market trends.

Table 5

Percentage Distribution of Secondary Vocational Enrollments, United States and SREB States, 1980-81

	United States		SREB States	
	Percent of Total	Percent of Non-occupationally Specific**	Percent of Total	Percent of Non-occupationally Specific
Occupationally Specific	29%	———	26%	———
Non-occupationally Specific				
Consumer & Homemaking		35%		35%
Industrial Arts		21		19
Agriculture		5		8
Distribution		1		1
Health		1		1
Occupational Home Economics		3		4
Office		14		14
Technical		*		*
Trade & Industry		6		5
Other	71	13	74	13
	100%	99% †	100%	100%

* Less than 1 percent.

† Total less than 100% due to rounding.

** Including "prevocational" occupational areas.

Source: U.S. Department of Education, National Center for Education Statistics. Vocational Education Data System, May 1, 1983.

Table 6

Distribution of Occupationally Specific Secondary School Enrollment, By Programs, 1980-81

Percent of Enrollments

	Agriculture	Distribution	Health	Occupational Home Economics	Office Occupations	Technical	Trade & Industry	Other	Total*
United States	10.7%	10.0%	3.4%	5.8%	36.4%	0.8%	31.6%	1.3%	100%
SREB Region	11.4	12.0	3.3	5.7	33.1	0.2	32.3	2.0	100
Alabama	17.2	10.2	4.6	8.0	24.8	——	35.1	——	100
Arkansas	30.2	10.2	2.2	3.1	32.6	——	21.7	——	100
Florida	7.2	14.3	2.8	5.3	41.9	0.2	19.5	8.8	100
Georgia	8.0	6.2	2.9	2.9	47.7	——	32.3	——	100
Kentucky	11.6	11.1	3.4	3.2	37.8	0.2	32.7	——	100
Louisiana	9.9	12.2	1.4	5.5	52.9	——	18.2	——	100
Maryland	3.5	5.1	1.9	1.4	53.6	0.3	23.7	10.5	100
Mississippi	24.5	18.4	0.5	4.5	11.2	——	40.9	——	100
North Carolina	12.2	14.5	7.5	6.4	15.2	——	44.2	——	100
South Carolina	8.3	7.8	1.7	3.0	42.9	——	36.2	——	100
Tennessee	9.1	10.9	4.4	7.1	21.1	——	47.3	——	100
Texas	17.2	17.0	3.3	11.7	16.2	0.7	33.9	——	100
Virginia	6.6	14.5	2.7	4.5	37.7	——	33.6	——	100
West Virginia	6.9	10.1	4.3	3.3	35.0	2.4	38.0	——	100

*Totals may not equal 100% due to rounding.

Source: U.S. Department of Education, National Center for Education Statistics, Vocational Education Data System, preliminary data, December 1, 1982.

What Is the Purpose of Vocational Education in the High School?

From the federal perspective, the fundamental purpose of vocational education is to prepare individuals for gainful employment. The Declaration of Purpose of the Vocational Education Act of 1976 clearly indicates that gainful employment is the objective of the programs supported by the Act. Over the years, various other objectives, such as meeting the needs of the handicapped and overcoming sex stereotypes in occupational preparation, have been included in the federal legislation on vocational education.

Although gainful employment may be the ultimate goal of vocational education, opinions vary about what kind of education is needed in secondary schools to attain this objective. Is it to create career awareness in early adolescence, to introduce students to broad vocational subjects, such as industrial tools in various occupational clusters, or is it to train for specific occupations so that high school graduates will have job-entry skills? Is the major responsibility of high schools in preparing youth for work to provide them with the basic skills of communication and mathematics that are needed in all occupational pursuits?

Daniel B. Dunham, who headed the Office of Vocational and Adult Education of the U.S. Department of Education, describes three views on the purposes of high school vocational education.[3] One views vocational education as skill training, with occupational specialization. Another stresses exploration of career alternatives, guidance services, and information on occupational choice-making, but would leave specific skills training to industry or to postsecondary programs. The third philosophy tries to capture the best of both worlds,"with linkages between vocational and academic training and on-the-job experience as part of the programs."

Within the context of the federal legislation, some states have developed their own philosophies and directions. For example, while the specified federal minimum "set-aside" of vocational education

funds for postsecondary education has been 15 percent, there is considerable difference among states in how they assign the responsibility for occupationally specific training between secondary and postsecondary schools.

In 1980-81, nationally, for every 100 vocational enrollments in postsecondary institutions, there were 45 high school enrollees in occupationally specific programs. In Wisconsin, however, where a deliberate state philosophy emphasizes occupational training at the postsecondary level, high school occupationally specific enrollments constituted only seven percent of postsecondary vocational enrollments.

The proportion of secondary occupationally specific enrollments in the region in 1981 relative to VEA postsecondary enrollments is shown in Table 7.* In the region, for every 100 postsecondary vocational students there are 40 high school students in occupationally specific programs.

Some states are revising their policies on the objectives of vocational education at various educational levels. In Tennessee, for example, in 1982, the Board of Education (which also serves as the State Board of Vocational Education) adopted a policy that stresses the career exploration and information aspects of vocational education and development of positive work attitudes at the secondary school level. While this policy does not eliminate occupationally specific training in high schools, it stresses the role of the postsecondary institutions toward this objective.[4]

Typically, state policies on secondary vocational education embrace all aspects—exploratory, career information, training for specific trades, and sometimes the development of basic skills. The 5-year "State Plan," required by the federal legislation, is often the source of a state's philosophy on vocational education. The Georgia plan calls for exploratory and industrial arts programs at the middle-school level.

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*These distributions reflect enrollments that are partially funded under the VEA. States may have different enrollment distribution patterns if data were available for total enrollments, regardless of how they are funded.

Table 7

Occupationally Specific High School Enrollments Relative to Vocational Postsecondary Enrollments, 1980-81

	Secondary School Occupationally Specific Vocational Enrollments	Total Postsecondary Vocational Enrollments	Percent Secondary Occupationally Specific of Total VEA Postsecondary Enrollments
United States	2,857,759	6,395,597	45%
SREB Region	910,435	2,231,407	40
Alabama	58,986	65,924	89
Arkansas	30,970	33,270	93
Florida	130,309	425,589	31
Georgia	94,750	130,026	73
Kentucky	52,194	119,695	44
Louisiana	33,761	76,088	44
Maryland	60,102	86,074	70
Mississippi	24,687	74,963	33
North Carolina	76,431	369,659	21
South Carolina	54,282	69,483	78
Tennessee	67,697	145,771	46
Texas	137,672	429,119	32
Virginia	67,922	149,641	45
West Virginia	20,672	56,105	37

Source: U.S. Department of Education, National Center for Education Statistics, Vocational Education Data System, March 3, 1983.

Objectives at the high school level include exploratory and pre-vocational industrial arts, pre-vocational programs in occupational clusters, as well as training in a single occupational skill for entry-level employment.[5]

This comprehensive array is fairly typical of the overall state policy for high school vocational education. It frequently embraces all objectives, rather than making a deliberate choice of vocational education priorities in secondary schools. Yet, the explicitly stated objectives do not usually specify the development of basic communication and computation skills.

Basic Skills and Secondary Vocational Education

The current ferment to revitalize and improve secondary education in the United States is focused on academic subjects. High school graduation requirements are being increased throughout the South, with 20 units of study rapidly becoming the required *minimum.* These units center around the basic academic disciplines—English, mathematics, social studies, and science. The emphasis on academics is a reaction to a period during which high school students were given latitude to choose among a variety of subjects, including vocational courses. The declining performance of secondary school graduates on a number of achievement measures has led to the current re-emphasis on a common academic core for all students.

Employers are contributing to this movement as they shift from previous emphasis on preparation for specific trades to the priority of well-developed communication skills and a general alertness that will enable high school graduates to learn on the job. For example, in Tennessee, where employers were interviewed in connection with a report from a governor-appointed Job Skills Task Force, greater emphasis on basic skills training emerged as a primary concern.

Peter J. Ellman, a business executive in South Carolina, illustrates this view in recent remarks to vocational educators: "There is no way possible you can keep up with the technological changes in industry. That is the fundamental thing for vocational educators to realize." Instead, he urges the public schools to teach basic skills.[6]

The Council of Chief State School Officers also has stressed the priority of basic skills, as well as emphasis on developing an understanding of the realities of the workplace (standards of behavior, positive attitudes toward work, discipline, and accomplishment) in preparing youth for employment.[7]

The importance of basic skills in vocational preparation is justified by some critics, who contrast the current economy to earlier economic conditions. While the traditional main divisions within vocational education (agriculture, domestic education, industrial education, and business and commercial education) may have served a less complex

society, they suggest the difficulty of providing a vocational curriculum core that suits increasing occupational specialization. "It has become increasingly obvious to many educators that the most useful vocational skills include the very basic capacities to read quickly, comprehend easily, write clearly, and calculate accurately. Inasmuch as specific kinds of skill capacities quickly become dated, general verbal and numerical abilities which can be translated into specific skill attributes with additional training, provide essential preparation for long-term career success. Thus the two best predictors of earnings throughout one's working career are one's overall verbal ability and the years one has remained in school."[8]

Vocational education has sometimes been viewed as a dumping ground for students of low academic achievement. Data from the National Longitudinal Study of the Class of 1980 indicate lower scores on standardized tests for seniors who report they are in vocational programs as compared with those in academic programs, but only slightly lower scores than for those in the general program.[9] Although some educators favor a similar curriculum for all students in high school, a "pragmatic" approach maintains that an academic program may be suited to the 50 percent who are college-bound, but that a more "relevant" curriculum is needed for the others. "The problems of alienation and dropping out have increased as an ever-larger proportion of youths go to high school. These problems can be overcome with the hands-on approach to learning that vocational education affords."[10]

The idea that some students should be "relegated" to vocational education if they do not perform well in academic courses has been criticized as undemocratic and unjust. "Narrow vocational training is given to the children of the disadvantaged, who then enter the kinds of jobs that technology is eliminating. This system is also becoming economically untenable, since automation has a tendency to wipe out some of the jobs for which vocational education prepares youngsters."[11] James O'Toole maintains that sound, basic education, which will allow young people to adapt as jobs change, is more valuable than preparation for job-entry skills.

A contrasting view is that if vocational education may hold students in school and prevent dropouts, students will benefit merely by earning

a high school diploma, since high school graduates, regardless of the program they have pursued, earn more than dropouts. However, evidence on whether vocational education reduces dropout rates is inconclusive. Some earlier studies found negative effects,[12] while another study[13] noted that positive effects were limited to participation in office programs. The longitudinal study of 1980 high school sophomores and seniors found a higher dropout rate for sophomores in vocational programs than in the general program.[14]

The notion that vocational courses can serve as a vehicle through which basic skills are taught is increasingly offered. In other words, some students are more apt to learn matnematics when applied to a practical problem than when taught in the abstract. However, the extent to which basic skills instruction is currently being integrated into vocational instruction is questionable. Vocational educators testifying last year to the American Vocational Association noted "the relative indifference of secondary vocational education to academic and general subjects (which) means that its graduates are not likely to be held accountable for competency in the basic skills."[15]

The same hearing produced testimony that vocational educators should develop "vocational basics" courses, such as vocational English courses that would count toward graduation requirements in English. Failure to develop such courses would cause a loss of vocational enrollments, as the trend to more required units cuts into elective courses.

The success of a strategy that would emphasize vocational education as a vehicle to focus on the teaching of academic skills through practical applications will depend on joint efforts by both academic and vocational teachers. It may not be fair to expect that a vocational educator using practical applications will suddenly succeed in teaching subject matter which students failed to grasp through years of the traditional academic instruction. But such learning might become feasible if academic and vocational teachers together examine this approach and design curriculum that teaches geometry, for example, through wood shop training to students who have difficulty in grasping abstract concepts through the traditional approaches.

Occupationally Specific Preparation in High Schools

If the major objective of vocational education in the high schools is to prepare students for specific trades through occupationally specific programs, then it becomes important to examine whether high schools have the resources to succeed in this endeavor.

Of the approximately 16,000 high schools in the United States, 31 percent are comprehensive high schools, and one percent are vocational high schools. A comprehensive school is generally defined as one that offers both academic and vocational programs, with at least six courses in the vocational area. As one critic notes, "Some would claim it an exaggeration to regard high schools as comprehensive when the choices are so limited."[16]

High school size is a limiting factor to offering a choice of vocational programs. A high school with an enrollment of 1,000 in grades 9-12 would have at most 500 students in grades 11 and 12. (In 1979, only 31 percent of all public high schools had enrollments of at least 1,000.) If 40 percent are taking a vocational program, that represents 200 students. Assuming an average class size of 20, this yields only 10 classes across the two grade levels, which explains why it is nearly impossible to offer a varied vocational education program in most comprehensive high schools.

At a recent hearing on vocational education in comprehensive high schools, critics voiced concerns about the ability of comprehensive high schools to respond to changing technology in business and industry and to labor market trends.[17]

Peterson and Rabe in their review of urban vocational education in Atlanta, Chicago, San Francisco, and Rochester note: "The problems faced by the comprehensive high schools were noticed with such regularity in all four cities that one cannot begin but to wonder whether this institution has begun to outlive its original purpose."[18]

The difficulty of offering quality and varied occupational specialization in a comprehensive high school has led to the development of 1) vocational high schools and 2) area vocational centers. The first is a specialized high school where most students are pursuing vocational

programs; the second is a shared-time facility attended part-time by students from feeder high schools where students take their academic subjects. Both types may serve either one district or several districts.

In 1978, there were only 225 vocational high schools in the U.S., and 1,395 area vocational centers. The distribution of the area vocational centers, by states, is shown in Table 8. At that time, the Southern region accounted for almost half of all area vocational centers in the nation. This attests to the region's efforts to improve the delivery of vocational education.

According to one analyst, 90 percent of secondary vocational education enrollments are found in comprehensive high schools.*[19] Yet critics agree that the comprehensive high schools are considerably weaker than specialized high schools or area centers because of their disadvantage in a) providing a wide enough choice of occupational programs, b) obtaining sufficient and up-to-date equipment, c) employing experienced teachers, and d) developing ties with business and industry.

On-the-Job Training

There has been much emphasis in recent years on integrating classroom teaching in vocational areas with on-the-job training by employers. Reasons for promoting such cooperative programs include the greater likelihood of exposing students to the up-to-date equipment in actual job settings, relative to what comprehensive and even vocational high school programs can provide.

Despite the advantages of cooperative programs, the percentage of vocational students who participate in these activities is fairly low (see Table 9). The Southern region, however, has developed more such programs than the nation as a whole. The primary occupations involved in cooperative training are limited to retailing, secretarial, and food services. A review of participation in cooperative programs by program areas reveals that very low percentages are in the industry and trades and the technical education programs (7 and 2 percent, respectively).

*Of course, some of the comprehensive high schools do utilize area centers. To the extent that they do, the criticisms directed at comprehensive high schools would not be applicable.

Table 8

Number of Secondary Area Vocational Centers, United States and SREB States, 19[illegible]3

United States	1,395
SREB Region	655
Alabama	113
Arkansas	9
Florida	28
Georgia	26
Kentucky	72
Louisiana	18
Maryland	19
Mississippi	61
North Carolina	8
South Carolina	33
Tennessee	62
Texas	117
Virginia	39
West Virginia	50

Source: National Center for Education Statistics *The Condition of Vocational Education*, pp. 8 and 93, 1981.

Machine shop cooperative enrollment, for example, accounted for 6 percent of the total machine shop enrollments in 1978. Cooperative vocational education is not making a dent in what many consider to be critical skills occupations.[20]

It is unlikely that cooperative arrangements will show much growth unless a way is found to substantially increase employer involvement in the development of such programs. Schools cannot promote such programs without intensive assistance by local employers. Also the

variety of cooperative programs in any one locality will always be limited to the industrial mix that exists there. This places rural districts at a substantial disadvantage.

Although cooperative vocational education is limited, the vast majority of high school students do work, primarily as waiters and

Table 9

Percent of Occupationally Specific Enrollments in Cooperative Programs, 1980 [illegible]

	Secondary Institution	Post-secondary Institution		
	Percent Cooperative	Percent Cooperative	Percent Apprenticeship	Total Cooperative & Apprenticeship
[illegible]	[illegible]	[illegible]	4.0	7.6
[illegible]	[illegible]	[illegible]	6.1	9.7
[illegible]	[illegible]	*	4.1	4.1
[illegible]	[illegible]	0	8.8	8.8
[illegible]	[illegible]	[illegible]	2.9	3.9
[illegible]	[illegible]	0	5.8	5.8
[illegible]	[illegible]	[illegible]	11.7	18.2
[illegible]	[illegible]	*	9.9	9.9
[illegible]	[illegible]	4.0	not reported	4.0
[illegible]	[illegible]	0	14.4	14.4
[illegible]	[illegible]	[illegible]	2.0	3.9
[illegible]	[illegible]		not reported	
[illegible]	[illegible]	1.4	1.0	2.4
[illegible]	[illegible]	[illegible]	6.4	19.7
[illegible]	[illegible]	[illegible]	7.0	9.6
[illegible]	[illegible]	[illegible]	not reported	3.6

[illegible]

[illegible] [illegible] U.S. [illegible] National Center for Education Statistics, Vocational Education [illegible]

waitresses or as store clerks. (In the United States Department of Education survey of the class of 1980, 63 percent of all high school seniors reported they were employed.) Thus, many high school students have job exposure that may develop the discipline of the work place, but they are not learning skills that are likely to lead to craft and technical occupations.

Economic Outcomes of Vocational Education

If, as is the premise of federal legislation, the fundamental goal of vocational education is gainful employment, then vocational education must be evaluated in terms of economic outcomes that relate to this objective.

There has been a great deal of research on the effects of vocational education on high school students. Some studies do find higher labor force participation rates for vocational education graduates, as compared to all other graduates.[21] This result, however, is not surprising, since the non-vocational graduates include the college-bound, who are expected to have lower labor force participation rates while they are college students.

Most of the research that compares vocational education graduates to general program graduates finds no substantial lasting difference on unemployment rates, occupational status, and annual earnings for males, although females who complete a business program in high schools do enjoy economic advantages.[22] Even when high school students are classified by the extent to which they participated in vocational education, the findings support these conclusions. Concentration in vocational education (as opposed to lesser exposure to vocational courses) confers some advantage to female students, but not to males.[23]

When work experience of graduates is followed beyond entrance into the labor market, the findings are generally the same. Initially, that is, immediately following high school graduation, economic advantages are observed—especially for women and to some extent for men, but these advantages disappear for males after eight years in the labor market.[24]

For the class of 1980, vocational education students were found more likely to work while in high school than general program participants.[25] Exposure to the labor market is viewed by Peterson and Rabe as one of the most crucial elements in the transition of youth from school to work. They, therefore, evaluate vocational education by its potential in managing this transition, rather than on the basis of long-term economic advantages that are difficult to substantiate.[26]

If vocational education is evaluated in terms other than strictly economic ones, the results also are not conclusive. Approximately half of the graduates do end up in training-related jobs. Job satisfaction appears to be high for vocational education graduates, but is not significantly different from that of students who completed general programs.[27]

Contrary to the findings on vocational education in the high schools, postsecondary training below the baccalaureate in any kind of program, including employer training and manpower programs, confers economic advantages. There is an abundance of evidence that postsecondary training in a variety of occupational areas results in higher earnings when comparisons are made with individuals who have no postsecondary training of any kind.

The "Exploratory" Purpose of Vocational Education

Industrial arts represent over one-fifth of high school enrollments in the non-occupationally specific vocational education courses. It is often thought of as a program that is "pre-vocational" and that, by exposure to various occupational clusters, it will aid youngsters in making choices about vocational directions. Since the program accounts for substantial enrollments, it merits further consideration.

A major national study that queried industrial arts teachers, principals, and guidance counselors found that they see the major purpose of the industrial arts courses to provide skills with tools and machines, and that making informed educational-occupational choices has a lower priority.[28] A large proportion of the respondents view industrial arts as general education, rather than as vocational preparation. This

is congruent with the fact that large numbers of college-bound students take industrial arts as a high school elective.

The extent to which industrial arts courses serve to expose students to various occupational clusters is problematical. Most enrollments in industrial arts courses at all grade levels are still found in courses that focus on a narrow area (e.g., woods, metals, or mechanical drawing).[29] Choice-making implies exposure to a variety of occupational clusters, so that completion of a sequence of industrial arts courses in various clusters, rather than limited exposure, would be needed to make choices.

Consumer and homemaking (C&H) courses represent one-quarter of all secondary vocational enrollments and over one-third of those in non-occupationally specific vocational courses. Consumer and homemaking courses address areas such as child rearing, budgeting, and household management, and do not purport to lead to gainful employment. Unlike other vocational program areas, consumer and homemaking is funded by a separate title of the Vocational Education Act. In evaluating this program, the National Institute of Education concludes, "significant evidence that students' attitudes and behavior are affected is lacking."[30]

Florida passed legislation in 1983 limiting state reimbursements to local districts for industrial arts, home economics, and pre-vocational exploratory courses. Students who have taken more than three years in the first two areas combined, or two years in the exploratory courses, will not be included in the full-time enrollment count on which state funding is based.

Section III

Coordinating Vocational Education

The efficient delivery of occupational training requires coordination between the secondary and postsecondary sectors, as well as between the various types of postsecondary institutions in any one area.

> There have been continuing efforts in recent years, in which both the AVA and the American Association of Junior and Community Colleges have been active participants, to build bridges between the secondary and postsecondary levels of vocational education. Nevertheless, the criticism is frequent that what is variously called collaboration, cooperation, or articulation between the two remains grossly inadequate. Advances have been made in collaboration and the means of effecting it in programmatic, curricular, and planning terms. Yet, the two levels operate largely as separate systems with consequent costs in the ineffective utilization of resources, in redundancy in program offerings and requirements, and in the narrowing of opportunities for students.
>
> Henry David[31]

Defining Duplication and Articulation Issues

Secondary and Postsecondary Programs

The problem of duplication of offerings in secondary and postsecondary institutions is not unique to vocational preparation. Repetition of academic subject matter in high school and college courses has been a long-standing issue.

If the mission of vocational education in the secondary schools is limited either to basic skills preparation or to pre-vocational exploration, then no problem of duplication arises vis-a-vis the postsecondary sector which does specialize in occupational skills training. In this case, issues of articulation for students with vocational aspirations would center around the following questions:

- To what extent could students who have completed high school pre-vocational courses and who have mastered basic skills enroll in postsecondary occupational training programs while attending high school?
- To what extent is such joint enrollment of high school students in postsecondary vocational programs feasible in terms of program capacity?
- How accessible are postsecondary programs to high school students in various portions of the state?

If the mission of vocational education in secondary schools does include specific occupational preparation, then an issue of duplication of offerings with respect to the postsecondary sector arises. The articulation issues then become as follows:

- Are programs in both secondary and postsecondary institutions in various specialties used to the fullest extent so that dual programming is necessary, or is there excess capacity in either sector, which might indicate unwarranted duplication of programs?
- Is the quality of occupational skills preparation offered by high schools comparable to what students could obtain if they were enrolled in postsecondary programs?
- Given what is known about the difficulty of offering a sufficient variety of quality vocational programs in comprehensive high schools, is the maintenance of such programs justified?
- Does the content of training in postsecondary programs overlap the content offered in secondary programs? If the same material is covered in both sectors in a given locality, this constitutes duplication and might be unwarranted if neither program is at capacity.

To some extent, both sectors must cover the same content. The postsecondary programs must cover the less complex or introductory aspects of occupational skills preparation, just as high schools do, or students without prior skills preparation could not enroll in those programs. Obviously, postsecondary institutions do offer more advanced training than secondary schools do. The programs in community colleges and in other postsecondary occupational programs move beyond

the content that typically is offered in secondary vocational training for specific trades, especially in the comprehensive high schools. The issue is then one of articulation, just as it is for academic subjects in colleges vis-a-vis high schools.

- Do students repeat material in postsecondary programs which was already covered in high school, or are they given advanced status according to their proven competencies when they enroll in postsecondary programs? Is the student duplicating effort? What can be done to prevent this in vocational education?
- How justified is the practice of assigning students to different program levels for occupationally specific training according to age and prior credentials?

While joint enrollments* in academic areas have become more numerous, this practice is rare for vocational programs. Yet such a practice might add prestige to vocational programs for high school youths. Adults who enroll in occupationally specific courses are seldom assigned to the same classes as high school students, and are placed in separate programs. Are there sound educational or other reasons for this practice, or is it a matter of tradition?

In some localities, vocational-technical schools serve both secondary and postsecondary students in the same facility. Many of the Florida centers, while geared primarily toward the adult population, enroll high school students either on a full- or part-time basis. Ridge Area Vocational-Technical Center in Winter Haven, Florida, is an example of a school that serves not only both populations, but enrolls them in the same classes.

In Tennessee, the State Board policy declares that where appropriate programs are not available in secondary schools, the postsecondary vocational-technical schools should serve high school students.[32]

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*High school and postsecondary credits are earned simultaneously while the high school student attends a postsecondary institution.

Postsecondary Programs

Many of the articulation issues between secondary and postsecondary vocational programs are equally applicable between various postsecondary institutions. To the extent that various types of postsecondary programs offer sequences in overlapping occupational areas, unwarranted duplication exists if the programs are not fully utilized, or if they train too many individuals for occupations with insufficient job openings. Additionally, the transfer of credits from one postsecondary program to another may pose problems that are similar to those encountered by high school vocational students who pursue postsecondary vocational training.

The organization of the public postsecondary occupational programs differs among states. In some states, the community college/vocational-technical offerings exist on unified campuses; North Carolina has this arrangement. In other states, there are separate vocational-technical institutes and/or area schools as well as community or junior colleges, some of which are in close proximity to each other. As the community colleges have added occupational programs, it has become difficult to distinguish between the missions of the various institutions, and the need to manage duplication and possibly unwarranted proliferation of programs has arisen. Georgia is an example of this situation; here the governor has appointed a study commission to recommend solutions for better coordination.

The duplication of offerings between various types of postsecondary institutions with occupational training in Tennessee led to 1983 legislation that shifts the governance of these institutions to one agency (see page 32).

Assigning Students According to their Vocational Competencies

If students are to avoid repeating the same content in their occupational training as they move from one institution (e.g., high school) to another facility (e.g., a vocational-technical institute), there is a need for a standard measure to determine what competencies students have already mastered. If instructional units are built around such competencies, students may then move on to the study of those competencies they have not yet learned.

Such a system has been initiated through the Vocational Technical Education Consortium of the States (V-TECS), a project of the Southern Association of Colleges and Schools. V-TECS has developed detailed performance or competency objectives for the component tasks of some 300 occupations. These objectives can be translated into competency tests that would certify for individual students how far they have moved in mastery of a continuum of tasks.* Then as a student moves on to another level of vocational preparation, he or she can proceed with occupational objectives not yet certified.

Unfortunately, this system has taken shape more in concept than in practice. Eleven states belong to this consortium, and the primary use that is being made of V-TECS now is for development of curriculum and of teaching guides—not for expediting students' progress across institutional levels.

Relevancy of Program Offerings to Market Needs

If occupational programs are aimed at preparation of students for gainful employment, they must be related to labor market needs. Assuming unduplicated programs that facilitate transfer of acquired skills as students move between programs, if such programs fail to reflect future occupational demands, the system is still ineffective.

As was shown in Tables 6 and 3, less than one percent of the students in the secondary vocational programs and only 6 percent of those in postsecondary programs† in the South are enrolled in "technical" areas, such as instrument maintenance and electronic technologies. This lack of emphasis on technical vocational fields is out of sync with current employment trends. Similarly, enrollments in high school agricultural programs, which are more than ten times as high as the number in technical fields, do not reflect labor market demand.

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*Unfortunately, occupational licensing requirements are usually prescribed in terms of credits earned at the postsecondary level rather than on the basis of certified competencies.

†At the postsecondary level, the "vocational" enrollment distribution does not provide a true picture of the distribution of students in various fields, since many students participate in occupational programs that are not funded under VEA. Some students in non-technical programs, as for example in some office occupation programs, receive technical training, but are not included under the VEA definition of "technical" programs.

Generally, the postsecondary programs are recognized as staying in closer touch with market realities than is the case for secondary programs. The effectiveness of advisory councils, through which employers advise on the quality and relevancy of vocational programs, declines progressively from those relating to postsecondary programs, to vocational area centers, to comprehensive high schools.[33] In any one labor market, the scarcity of employers who can give sufficient time to advisory councils suggests it is more likely that employers will interact with a single postsecondary institution than with numerous comprehensive high schools. Thus, the pressure to maintain secondary school programs for which teachers have been trained, regardless of their relevancy, faces less countervailing opposition at that level than in postsecondary institutions.

The relevancy of programs to labor market needs is also promoted at the postsecondary level because students pay tuition. This places a greater responsibility on the institutions to prepare students for jobs that do exist than is the case for "captive" students at the secondary level. Also, the competition from proprietary programs, which sink if they do not succeed in placing students in jobs, helps the public postsecondary sector maintain greater relevancy to the labor market, as compared to secondary school programs.

The Capacity Question

Is there excess capacity in vocational programs, which might indicate unwarranted duplication between secondary and postsecondary institutions? Although this question is fundamental to rational consideration of the duplication problem, there is little information on the subject.

A national survey of utilization of vocational facilities was conducted in 1978. It found longer hours of operation and a greater likelihood of extended day, evening, and summer programs among postsecondary institutions than in high schools. On the other hand, the survey found greater levels of utlilization during the hours in operation at secondary schools than in the postsecondary sector.[34]

Another measure of the extent to which secondary and postsecondary institutions are utilized might be the degree to which they share resources. Approximately 38 percent of the secondary schools reported

they are located in an area served by a postsecondary institution; and 10 percent of these do use facilities of such postsecondary institutions for their vocational education programs, while 19 percent indicate their students take shop courses at the postsecondary institutions. At most, then, according to this 1978 survey, approximately one-tenth of the secondary vocational programs have access to postsecondary programs to serve their students. On the other hand, from the answers provided by postsecondary institutions, one-third of these report offering vocational programs that serve high school students.

From the inverse perspective, less than 10 percent of the postsecondary institutions reported that their students take vocational courses at secondary schools.

A national survey is unlikely to provide the necessary detail on utilization of vocational training facilities in any one state. Such analysis is urgently needed in each state. A 1980 report to the governor of Tennessee on job training in the Memphis area (which preceded the statewide changes of vocational education in that state) directed the Department of Education "to proceed with an immediate and thorough on-site inventory of vocational education equipment in the area's schools." The report added, "What appears to still be lacking is an indication of a) how much of the equipment is actually in use for courses officially 'in operation,' and b) the condition of equipment. The possibility of a substantial amount of idle equipment on the secondary level appears to be rather high."[35]

The Issue Of Governance

A frequent response to the problem of how to coordinate occupational training among the various providers in a state is to revise governance. Such changes have sometimes included a prior consideration of the purposes of vocational education at the various levels. However, this step has not always preceded the reorganization of the structural arrangements.

Among the 14 Southern states, four have revised their structure for governing vocational programs in the last two years. Arkansas has separated the State Department of Education into two divisions—General Education and Vocational-Technical Education, with

two co-equal directors. The State Board of Education also serves as the State Board of Vocational and Technical Education with general control and supervision of all vocational programs in public education facilities. The Division of Vocational-Technical Education is responsible for occupational programs in elementary, secondary, and higher education institutions.

Mississippi created a separate Board of Vocational and Technical Education in 1981 to channel funds to high schools, junior colleges, and regional vocational-technical centers. In 1983, Tennessee transferred governance of the public postsecondary institutions that offer occupational training to the State Board of Regents, which already governed the 10 community colleges and six regional universities.

In Georgia, a new coordinating board has been established including representation from both the Board of Regents and the Board of Education. It is the function of this new board to reduce duplication of programs and to establish new programs, where needed, for the various types of existing public postsecondary institutions that offer occupational training.

Some states have taken other routes to improve coordination. In Florida, 28 Regional Coordinating Councils coordinate vocational education in high schools and postsecondary institutions. Local superintendents and directors of vocational education and college deans comprise part of the required membership of these councils. At least half of the members of each council are lay people, appointed by the governor. According to recent legislation, these councils will make recommendations on creation and termination of programs to the relevant governing authorities. They will also promote agreements on programmatic responsibilities of the various sectors.

In South Carolina, in 1982, the directors of the State Board of Technical and Comprehensive Education (TEC) and of the Office of Vocational Education in the State Department of Education signed agreements to give high school vocational students advanced standing when they enroll in TEC programs. This policy, which may provide for TEC utilization of area center facilities, is applied through local agreements between officials of the institutions at both levels.

Questions Each State Should Address

Rationalizing publicly funded vocational preparation in any one state depends on a forthright appraisal of the following issues:

1. What is the primary objective of vocational education in the high schools? How likely is it that comprehensive high schools can achieve a variety of objectives in vocational education?
2. If it is the role of secondary schools to train youths for entry-level jobs with specific occupational skills, should major parts of this training be shifted to area vocational centers and to postsecondary institutions? Although office skills preparation in comprehensive high schools has produced tangible economic results for vocational education students, it is almost impossible to expect these schools to offer quality programs in a broad variety of occupational areas.
3. To what extent can employers be mobilized to offer more on-the-job training in conjunction with high school vocational programs?
4. If basic skills training is the highest priority for youths with low academic aptitudes, can a massive effort be mounted to use vocational courses as a vehicle for applied instruction in basic skills? Would current vocational teachers be up to this task? What are the prospects for achieving such a redirection of purpose of vocational courses?
5. To what extent are the current vocational offerings, at the respective educational levels, relevant to the labor market needs in the state?
6. Is there unwarranted duplication of offerings in various fields between levels, or within the postsecondary sector?
7. Given detailed information on the foregoing issues, what structural changes might be warranted to improve the effectiveness of occupational programs?

The data on duplicated occupational training programs between secondary and various postsecondary institutions, relative to labor market demands, can be assembled, in detail, by each state. Only on the basis of such an analysis will changes in governance be likely to lead to a more effective system of occupational preparation.

Notes

1. "A Capsule Description of High School Students," *High School and Beyond*, National Center for Education Statistics, May 1982.
2. Paul B. Campbell, et al., *High School Vocational Graduates: Which Doors Are Open?* National Center for Research in Vocational Education, Ohio State University, 1982, p. 3.
3. Daniel B. Dunham, *Vocational Education: Policies, Issues, and Politics*, National Center for Research in Vocational Education, Ohio State University, 1980, p. 2.
4. *Tennessee Comprehensive Education Study, 1981-82*, Task Force Review of Public Education, Nashville, 1982, p. 271.
5. *Georgia Five Year State Plan for the Administration of Vocational Education, 1983-1987*, Georgia Department of Education, Atlanta, pp. 209-210.
6. As quoted in *The State*, Columbia, S.C., July 26, 1983, p. 2-C.
7. *Youth Education and Employment*, Council of Chief State School Officers, Washington, D.C., 1981, p. 7.
8. Paul E. Peterson and Barry G. Rabe, "Urban Vocational Education and Managing the Transition from School to Work: A Review of a Series of Case Studies of Vocational Education Programs in Four Cities," unpublished, University of Chicago Committee on Public Policy Studies, 1981, p. 6.
9. Mary A. Golladay, *The Condition of Vocational Education*, National Center for Education Statistics, Washington, D.C., 1981, p. 69.
10. Gordon I. Swanson, "Is High School the Place for Vocational Education?" *Vocational Education*, September 1982, p. 31.
11. James O'Toole, "Liberal Education for a Technical Age," *Spring Education Review, Washington Post*, January 9, 1983, p. 16.
12. Donna M. Mertens, *The Effects of Vocational Education on Participants*, National Center for Research in Vocational Education, Ohio State University, 1981, p. 8.
13. John T. Grasso and John R. Shea, *Vocational Education and Training: Impact on Youth*, Carnegie Foundation, 1979, p. 156.
14. "High School Dropouts: Descriptive Information from *High School and Beyond*," National Center for Education Statistics, November, 1983.
15. *Vocational Education in the Comprehensive High School*, American Vocational Association, Arlington, Va., 1983, pp. 20-26.

16 Alan Weisberg, "What Research Has to Say About Vocational Education and the High Schools," *Phi Delta Kappan*, January 1983, p. 356.

17 *Vocational Education in the Comprehensive High School*, pp. 20-26.

18 Peterson and Rabe, *op. cit.*, p. 25.

19 Weisberg, *op. cit.*, p. 356.

20 Richard D. Ruff, *An Examination of the Desirability of Expanding Cooperative-Type Work Experience Efforts*, National Center for Research in Vocational Education, Ohio State University, 1982, p. 3.

21 "Gainful Employment Among High School Youth," National Center for Education Statistics, Bulletin 81-249b, Washington, D.C., 1981.

22 Peterson and Rabe, *op. cit.*

23 *Standards for Industrial Arts Program Project, Report Survey Data*, Virginia Polytechnic Institute and State University, Blacksburg, Va., 1980, pp. 25-28, and 32-34.

24 Ibid., p. 54.

25 *The Vocational Education Study: The Final Report*, Publication No. 8, National Institute of Education, Washington, D.C., 1981, pp. 21-25.

26 Mertens, *op. cit.*, p. 3.

27 Grasso and Shea, *op. cit.*, p. 156; Mertens, *op. cit.*, pp. 6-9; and *The Vocational Education Study: The Final Report*, pp. VII—7-17.

28 Campbell, et al. *op. cit.*, pp. 64-67.

29 Robert H. Myers, *An Economic Analysis of High School Vocational Education, IV*. The Labor Market Effects of Vocational Education, The Urban Institute, Washington, D.C., 1981, p. 34.

30 *The Vocational Education Study: The Final Report*, p. VI—25.

31 *Vocational Education in the Comprehensive High School*, p. 22.

32 *Tennessee Comprehensive Education Study*, p. 272.

33 Peterson and Rabe, *op. cit.*, pp. 18-25.

34 *National Study of Vocational Education Systems and Facilities*, Volume I, Westat, Inc., Rockville, Md., and Institutional Development Associates, Inc., Silver Springs, Md., 1978, pp. 137-146.

35 Report to Governor Alexander, Memphis Area Job Training Team, November 24, 1980, (not published), p. 12.