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ABSTRACT

This publication presents a data collection system useful in measuring the success of vocational programs for special needs populations as well as current descriptive/demographic information on special needs populations nationwide. The first of four chapters provides a general characterization of special populations and specific definitions for each subgroup commonly designated as a special needs population. U.S. Office of Education data (1976), discussed in chapter 2, give an indication of the responsiveness of vocational education programs to the needs of special groups nationwide. Chapter 2 also discusses some of the problems of collecting and analyzing data about special needs group. Each profile is followed by a summary of pertinent literature on the needs of that special population in vocational education programs. The final chapter explores data needs for effective program planning and describes an exemplary data collection system. (LRA)

Research & Development Series No. 176

"It Isn't Easy Being Special"

LET'S FIND THE SPECIAL PEOPLE:

Identifying and Locating Special Needs Learners

The National Center for Research in Vocational Education
The Ohio State University
1960 Kenny Road
Columbus, Ohio 43210
1979

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- Generating knowledge through research
- Developing educational programs and products
- Evaluating individual program needs and outcomes
- Installing educational programs and products
- Operating information systems and services
- Conducting leadership development and training programs

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FOREWORD

Planning effective vocational programs for special needs populations requires complete, accurate, and timely data on the numbers and distribution of the entire spectrum of special learners. It also requires data useful in measuring the success of those programs and in assessing how well they serve special populations. This publication presents a data collection system to meet those requirements as well as current descriptive/demographic information on special needs populations nationwide.

Let's Find the Special People: Identifying and Locating Special Needs Learners is one of a series of National Center publications devoted to issues, problems, and answers in serving special needs learners. This ongoing series, "IT ISN'T EASY BEING SPECIAL", reflects the National Center's commitment to improving vocational education programs and services for special needs populations.

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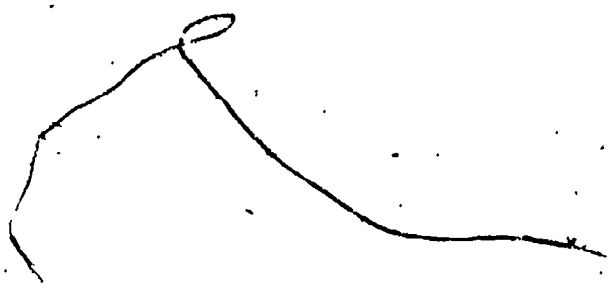
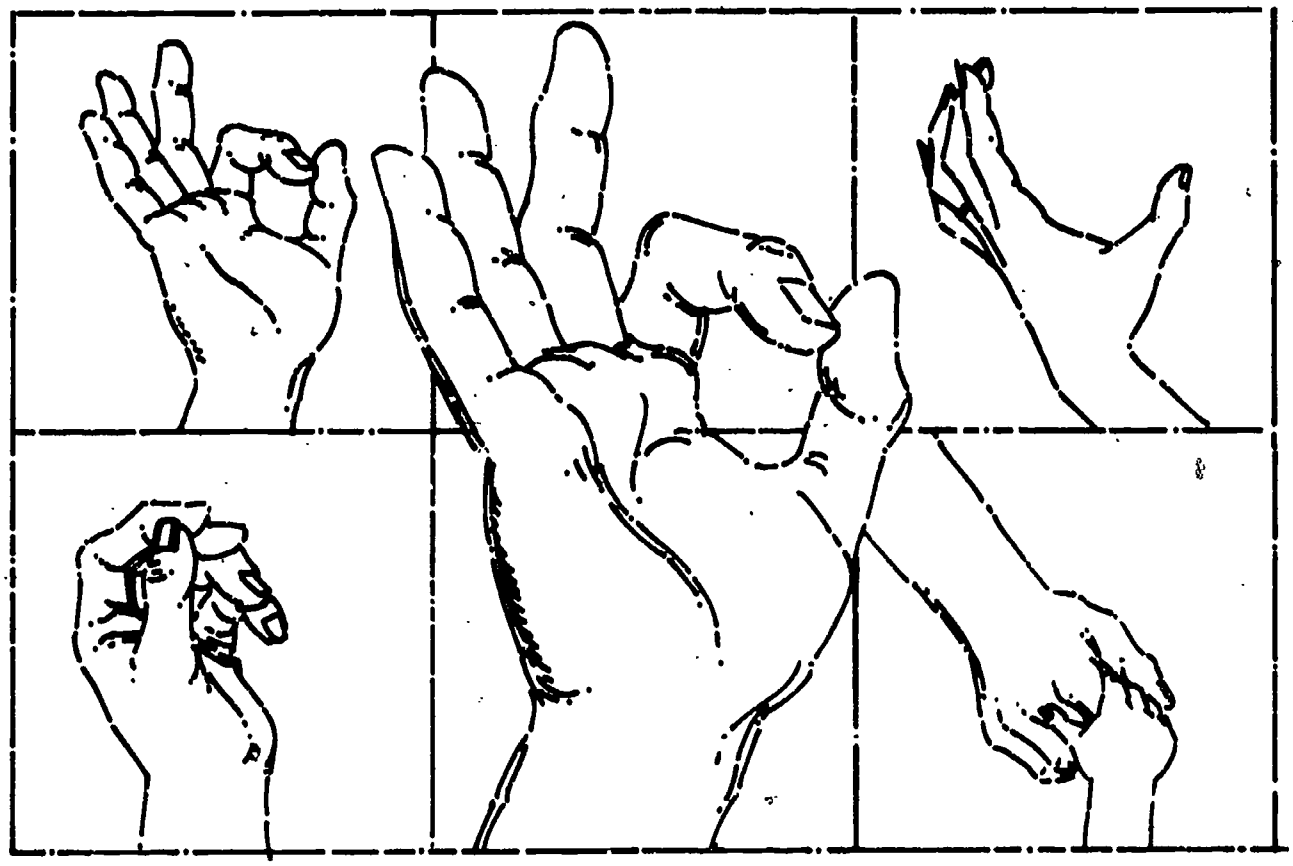


INTRODUCTION

Before we can plan and implement effective vocational programs to serve special populations, we must determine who they are and where they are. *Let's Find the Special People* will help you begin.

Chapter I provides a general characterization of special populations and specific definitions for each subgroup commonly designated as a special needs population. U.S. Office of Education data (1976) discussed in Chapter II give an indication of the responsiveness of vocational education programs to the needs of special groups nationwide. Chapter II also diacusses some of the problems of collecting and analyzing data about special needs populations.

In Chapter III you will find a demographic profile of each special needs group. Each profile is followed by a summary of pertinent literature on the needs of that special population in vocational education programs. Chapter IV explores data needs for effective program planning and describes an exemplary data collection system.



CHAPTER I

SPECIAL NEEDS POPULATIONS: HOW ARE THEY DEFINED?

Providing appropriate vocational and career opportunities to special needs populations is a priority in vocational education. The Vocational Education Amendments of 1968 focused attention on and allocated resources to programs serving the disadvantaged and handicapped. The federal mandate to guarantee all handicapped children a free, appropriate, public education and related services to meet their unique needs was established through the Education for All Handicapped Children Act of 1975 (Public Law 94-142). This commitment was specifically extended to vocational programs at all levels through the Vocational Education Amendments of 1976.

A report to the U.S. Office of Education and the National Advisory Council on Vocational Education (Lee, 1976), stated that the definition of "special needs populations" was substantially limited to two special groups: the handicapped and the disadvantaged. As the commitment to special needs populations has grown, the description and definition of each group has been expanded and clarified. "Special needs populations" include persons who require special help or services in order to enter, to perform successfully in, and to complete a regular vocational program. Members of the special needs subpopulations identified in this study are bilinguals or linguistically different, migrants, handicapped, gifted and talented, members of ethnic and racial minorities, and persons in correctional systems.

Special needs populations are:

- Ethnic and racial minorities, including the following groups:
  - Black Americans, Hispanics (Mexican Americans, Puerto Ricans, Cubans, Latin Americans), American Indians, Alaskan Natives or Aleuts, Hawaiians, Asian Americans, Appalachian Whites

- Disadvantaged — Persons (other than handicapped persons) who have academic or economic handicaps and who require special services and assistance to enable them to succeed in vocational education programs. (Public Law 94-482, 1976)

- Handicapped — A person who is (1) mentally retarded; (2) hard of hearing; (3) deaf; (4) speech impaired; (5) visually handicapped; (6) seriously emotionally disturbed; (7) orthopedically impaired; or (8) other health impaired persons with specific learning disabilities and who, by reason of the above (a) require special education and related services; (b) cannot succeed in the regular vocational education program without special educational assistance; or (c) require a modified vocational education program. (Federal Register Volume 42, No. 191, 1977)

- Gifted and Talented — Those persons who can be identified by professionally qualified people as showing high performance and demonstrated achievement in general intellectual ability, creative or productive thinking, specific ability, visual and performing arts, and psychomotor abilities. (Marland, 1972)

- Linguistically different (including bilinguals) – Persons who are severely restricted by their English-speaking ability because they come from environments where the dominant language is other than English. (Federal Register Volume 42, No. 191, 1977)

- Migrant* – A child is considered migrant and eligible to participate (under Title I ESEA) if he or she has moved with his or her family from one school district to another during the past year in order that a parent or other family member may work in agriculture or related food processing activities. They can be considered migrant children for five years after their parents have settled in one place. (Title I ESEA, 1965)

  *Adult migratory workers are included as a target population for the purposes of this study.

- The Incarcerated – Persons who are under the jurisdiction of correctional systems. These systems include all government agencies, facilities, programs, procedures, personnel, and techniques concerned with the investigation, intake, custody, confinement, supervision, or treatment of alleged adjudicated adult offenders, delinquents, or status offenders. (SEARCH Group, Incorporated, 1976)

Although laws have defined special populations, and have mandated that special groups be accommodated in regular or self-contained programs, vocational educators have yet to discharge their responsibilities adequately to students who require special attention. Vocational educators must look beyond enrollment data and strengthen their commitment to serving special groups not because educators have a legal obligation to ensure equal access, but because they have a moral obligation to prepare them to succeed.

CHAPTER II

VOCATIONAL EDUCATION AND THE SPECIAL NEEDS LEARNER: A REVIEW

Is vocational education serving the needs of these special groups? To what degree are the various special needs populations served?

Answers to these very basic questions are difficult to ascertain. Presently, the U.S. Office of Education collects data from states only on those disadvantaged and handicapped students who are in special vocational education classes or who are receiving special services. Even so, for the period 1972 through 1976, vocational education services to these broadly defined special groups appear, at best, to be at maintenance level only (Table I). While actual numbers of special learners have increased for each of these years, the percentage of the total vocational enrollments they represent is unchanged if not lessened.

TABLE 1: Disadvantaged and Handicapped Students in Vocational Education 1972 through 1976

Categories	*Years 1972-73*	*Years 1973-74*	*Years 1974-75*	*Years 1975-76*
Reported enrollment of disadvantaged students in Vocational Education	1,581,025	1,631,922	1,799,977	1,873,304
Percent of disadvantaged students in total Vocational Education Enrollments	13.1	12.1	11.6	12.4
Reported Enrollments of Handicapped Students in Vocational Education	222,713	234,469	266,744	284,231
Percent of Handicapped Students in Total Vocational Education Enrollments	1.9	1.7	1.7	1.9

Source: U.S. Office of Education Forms 3138 and 346-3 U.S. Department of Health, Education and Welfare, Washington, D.C. FY 1971 through 1976

Data from the various states are also difficult to interpret with any validity. The lack of clarity in defining "socioeconomically disadvantaged" and "handicapped" makes the task of collecting and analyzing data about these groups difficult. Those responsible for collecting and compiling these demographic data must ask who is to be counted with little, if any, direction or clarification. Those responsible for analyzing and interpreting the data must ask who was included and how they were categorized.

Each state has its own methods and systems for collecting and reporting enrollment statistics. Definitions and categories of special needs learners appear to be inconsistent across the states. Data from various states show a great disparity in the percentage of disadvantaged students enrolled in vocational programs. Enrollments range from a high of 48.6 percent in Connecticut to a low of 2.4 percent in Montana. Table II shows the eight states with the highest representation (all above 25 percent) of disadvantaged students in vocational programs for FY 1976. Thirteen states reported enrollments of less than 5 percent for the same fiscal year (see Table III). Vocational enrollments for the handicapped also vary. Only four states reported enrollments above 5 percent for handicapped learners, and seven states have handicapped student enrollments of less than 1 percent (see Tables IV and V). The range of state-by-state enrollments of handicapped students (approximately 9 percentage points) is not as great as the range of enrollments for disadvantaged students. Delaware reported the highest representation at 9.3 percent, and Texas the lowest, with only .33 percent of the total vocational enrollment classified as handicapped.

TABLE 2: Enrollment of Disadvantaged Vocational Education Students as a Percent of Total Vocational Education Enrollment and Change: Fiscal Years 1971, 1973, 1974, 1975, and 1976 for Eight States

	FY 1971	*FY 1973*	*FY 1974*	*FY 1975*	*FY 1976*	*Difference in Percentage Points FY 71-76*
ARKANSAS	28.41	20.08	26.49	26.26	27.41	1.00–
CONNECTICUT	29.36	42.37	40.03	49.41	48.06	18.70
DELAWARE	29.23	25.38	23.73	23.08	24.61	4.62–
DIST. OF COLUMBIA	18.23	43.82	46.90	40.30	40.77	25.54
HAWAII	16.99	18.10	20.57	21.98	24.96	7.97
LOUISIANA	31.87	40.74	38.06	38.06	39.73	7.86
NEW YORK	20.93	25.42	22.97	25.40	27.60	6.67
PUERTO RICO	41.85	43.66	42.18	38.85	37.52	4.33–

Source: U.S. Office of Education Forms 3138 and 346-3, U.S. Department of Health, Education and Welfare, Washington, D.C. FY 1971 through 1976

TABLE 3: Enrollment of Disadvantaged Vocational Education Students as a Percent of Total Vocational Enrollment and Change: Fiscal Years 1971, 1973, 1974, 1975, 1976 for Thirteen States

	FY 1971	*FY 1973*	*FY 1974*	*FY 1975*	*FY 1976*	*Difference in Percentage Points FY 71-76*
COLORADO	3.84	2.08	5.70	4.00	4.83	0.99
GEORGIA	25.35	18.58	2.74	2.16	2.49	22.86–
IDAHO	2.90	4.06	4.92	3.91	3.71	0.81
INDIANA	3.02	2.91	4.54	5.58	4.32	1.30
MAINE	2.53	6.63	6.57	5.45	3.71	1.18
MARYLAND	19.04	5.16	7.32	4.91	4.26	14.78–
MICHIGAN	6.05	2.27	2.44	3.04	3.71	2.34
MINNESOTA	3.80	2.64	2.55	8.06	3.40	0.40–
MONTANA	10.91	5.37	4.13	3.18	2.36	8.57–
NEW HAMPSHIRE	1.24	5.29	4.23	7.04	3.13	1.89
NORTH DAKOTA	20.51	25.86	19.15	16.89	3.77	16.74–
S. CAROLINA	18.87	4.58	4.78	3.70	4.58	14.29–
SOUTH DAKOTA	14.78	5.87	2.41	2.09	3.92	10.86–

TABLE 4: Enrollment of Handicapped Vocational Education Students as a Percent of Total Vocational Education Enrollment and Change: Fiscal Years 1971, 1973, 1974, 1975, 1976 for Four States

	FY 1971	*FY 1973*	*FY 1974*	*FY 1975*	*FY 1976*	*Difference in Percentage Points FY 71-76*
ALASKA	4.78	1.26	2.14	10.00	7.94	3.16
DELAWARE	1.39	10.35	9.56	9.27	9.27	7.88
DIST. OF COLUMBIA	2.02	2.42	6.53	5.54	5.61	3.59
OKLAHOMA	3.92	9.20	8.07	6.48	6.42	2.50

TABLE 5: Enrollment of Handicapped Vocational Education Students as a Percent of Total Vocational Education Enrollment and Change: Fiscal Years 1971, 1973, 1974, 1975, 1976 for Seven States

	FY 1971	*FY 1973*	*FY 1974*	*FY 1975*	*FY 1976*	*Difference in Percentage Points FY 71-76*
GEORGIA	7.71	3.51	0.81	0.58	0.63	7.08–
IDAHO	0.67	0.83	0.88	0.86	0.89	0.22
LOUISIANA	0.60	0.70	1.03	1.46	0.05	0.55–
MAINE	0.75	0.99	1.61	0.81	0.83	0.08
NORTH DAKOTA	2.95	3.44	3.41	2.81	0.93	2.02–
SOUTH DAKOTA	3.61	0.81	0.50	0.93	0.58	3.03–
TEXAS	0.58	1.68	0.56	0.44	0.33	0.25–

For FY 1976, vocational education enrollment of racial and ethnic minority groups was a little over 3 million students or approximately one-fifth of the total enrollment nationwide.

Table VI summarizes national enrollments by racial/ethnic category and shows the percentage of total vocational enrollments represented by each group.

A state-by-state comparison of minority group enrollment data is difficult. Vocational enrollments of minority groups should only be viewed relative to that group's representation in the total population of each state. Several ethnic populations are concentrated in one or a few regions.

TABLE 6: Vocational Education by Racial/Ethnic Group as a Percent of Total Vocational Education Enrollment: Fiscal Year 1976

Racial/Ethnic Category	*No.*	*Percent*
American Indian or Native Alaskan	112,811	0.75
Black, not of Hispanic Origin	2,028,978	14.07
Asian or Pacific Islander	160,522	1.07
Hispanic	729,618	4.82
White, not of Hispanic Origin	11,156,474	73.73
Other: Race Unaccounted for	843,046	5.56
Total Vocational Education Enrollment	15,128,060	

Source: U.S. Office of Education Form 346-3, U.S. Department of Health, Education and Welfare, Washington, D.C. FY 1976

States differ in reporting vocational enrollments by racial/ethnic group. Connecticut and Puerto Rico did not report enrollment by race in FY 1976. Approximately 850,000 students (5.6 percent) enrolled in vocational programs nationwide are classified only as "other—race unaccounted for".

National data are not available for enrollments of migrant populations, those of limited English proficiency, the gifted and talented, or the incarcerated. It is generally assumed that, at least in some states, vocational programs are available to these groups. These programs exist primarily at the local level, and data are either unavailable or are not transferable beyond the jurisdiction of the local agency or institution.

Do these data validly portray the actual commitment of each state to serve "special" students? We must remember that no single definition of "handicapped" or "disadvantaged" exists for all states; that each state categorizes its special populations and programs designed to serve them in its own way; that the U.S. Office of Education data include only those special needs learners who are in special programs or who receive special services.

CHAPTER 3

SPECIAL NEEDS LEARNERS: WHERE THEY ARE AND HOW VOCATIONAL EDUCATION CAN HELP

To ensure effective vocational programs for special needs populations, vocational education teachers, administrators, and program planners must identify, locate, and be informed about each special group. In this section, we will present data about the numbers and distribution of special needs persons nationally, and review information about the relationship of the various special needs groups to vocational education.

The data and information that you will find in this chapter are from a comprehensive literature review and five database sources. The literature review identifies and documents both common and unique needs and interventions related to access and performance of special students in vocational education programs. The five data sources include

- state department of education personnel responsible for special needs populations
- Bureau of Census: 1970 Census of Populations: Final Reports
- the Statistical Abstracts of the United States, 1977
- the 1978 edition of the Directory of Juvenile and Adult Correctional Departments, Institutions, Agencies, and Paroling Authorities
- special needs data from the U.S. Office of Education reporting forms compiled and submitted by each state.

Here are summary statements of descriptive and demographic information about the following special groups and their relationship to vocational education.

- Handicapped
- Black Americans
- American Indians
- Hispanics
- Appalachian Whites
- Asian Americans
- Migrants
- Incarcerated
- Limited-English Proficiency
- Gifted and Talented

SUMMARY STATEMENT 1: THE HANDICAPPED

There are over three and one-half million handicapped persons in the United States. Ten states, California (with 9.0 percent of the total handicapped population), New York (6.5 percent), Texas (6.3 percent), Illinois (6.2 percent), Pennsylvania (5.6 percent), Ohio (4.6 percent), Michigan (4.1 percent), New Jersey (4.0 percent), Massachusetts (3.6 percent), and Florida (3.2 percent) collectively contain over one and three-quarter million handicapped individuals, nearly one-half of the total handicapped population reported. The percentage of the total population of each state reported as handicapped ranges from 3.1 percent of the population in Utah to 0.7 percent of the population in Vermont. Vermont reports the fewest number of handicapped persons, slightly over 6,000.

Individualized Education Programs (IEPs) for all handicapped students in vocational education programs, as well as other areas of education, have been mandated by P.L. 94-142. Individualization of educational programs is necessary due to the variety of physical or mental impairments that make coping in the educational environment difficult. "The IEP concentrates on eliminating academic, occupational, attitudinal and social obstacles which may prevent the student from succeeding" (Huffman, 1973). It is a written commitment of educational resources that is designed to meet each handicapped child's unique needs (Hayes and Higgins, 1978). Individualized programming is also recommended by many teachers to foster successful learning on the part of all students, the handicapped and nonhandicapped as well (Paul, Turnbull, Cruikshank, 1977; Management Analysis Center, 1975; Wargo, 1977; Adelman and Phelps, 1978).

The need for an interdisciplinary team approach involving both special education and vocational education teachers in implementing individualized education plans is widely supported as an effective way of meeting the handicapped student's needs (Bureau of Occupational and Adult Education, *Mainstreaming the Handicapped, in Preparatory Occupational Education Programs in North Carolina,* 1978; Massachusetts State Department of Education, 1972; Phelps and Lutz, 1977).

The medical needs of handicapped students are somewhat different and more intense than those of others, requiring the provision of support services based upon the nature of the disability. Information about the health needs of the handicapped student must also be made available to the vocational teacher and staff (Schneps, 1976; Love, 1971; Kelly, 1977). Also crucial to handicapped students in adapting to the classroom social environment are the attitudes of vocational teachers, and their high or low level of expectancy for student success (Larsen, 1975; Gold, 1973; Ramey, 1967). Acceptance and positive regard on the part of vocational educators will facilitate the handicapped student's social adjustment in the vocational education program (Foster, et al., 1971).

Sensory impairments or physical disabilities may necessitate modifications in the learning environment to eliminate physical barriers, to ensure safe handling of tools and equipment while the student is receiving instruction. Some examples of environmental modifications are the removal of architectural barriers to permit wheelchair access to facilities (Love, 1971; Kelly, 1977). Also, adjustments to the height of work surfaces, benches and storage cabinets, and modification of tools and machine controls may be necessary. Modification or provision of special curriculum materials and supplies may also be needed, i.e., braille texts, tape recorders and audio-visual equipment with large print letters (Adelman and Phelps, 1978; Wargo, 1977). In addition, there are numerous teaching strategies that can be implemented, such as

- multisensory communication training for speech impaired students (Myers and Hammill, 1969; and Gearheart, 1974)
- mobility training for visually impaired students to provide orientation in the environment (Selvin, 1976; Nenni, 1971; Wardell, 1973; and Kakalik, et al., 1974)
- multisensory perceptual integration training for learning disabled students (Coss, 1969; Gearheart, 1977; and Tindall, 1977)
- sign language orientation for vocational teachers and peers of deaf students (Nober, 1977; and Bolton, 1974)
- the total communication approach (oral and "signing") for instruction of deaf students (Macer and Buffer, 1978; and Wargo, 1977)

These are just a few examples of the many special teaching techniques that may be used in vocational education programs for handicapped students. Prevocational training assistance is also an important intervention strategy in acclimating the handicapped student to vocational training requirements (Bureau of Education for the Handicapped, *Proceedings of the Conference on Research Needs Related to Career Education for the Handicapped,* 1975; Windham Southeast Supervisory Union, 1976; American Personnel and Guidance Association, 1978).

Inservice and preservice training will be required to enable vocational teachers to adapt the vocational education program environment and teaching strategies to the needs of handicapped students (Gardner and Warren, 1978; Iowa State Department of Public Institutions, 1974).

SUMMARY STATEMENT 2: BLACK AMERICANS

Black Americans represent about 10 percent of the total population in the United States. Nine states have Black American populations in excess of one million. These states are New York (9.6 percent of the Black American population), Illinois (6.3 percent), California (6.2 percent), Texas (6.2 percent), Georgia (5.3 percent, North Carolina (5.0 percent), Louisiana (4.8 percent), Florida (4.6 percent), and Pennsylvania (4.5 percent). Vermont, Montana, and South Dakota report Black American populations of less than 2,000.

A proportionately larger number of black students are enrolled in vocational education programs than their white peers (Lee, 1976; Moody and Sheppard, 1976). They have been largely concentrated in the industrial trades and service occupations with limited access to more highly skilled technical occupations and thus are being funneled into lower-paying jobs (Love, 1970; Moody and Sheppard, 1976; Cummings, 1977). Black students should receive vocational training in a variety of areas, not just a few stereotyped areas of occupational training (Phelps, 1977; and King, 1977). Career counseling should avoid the stereotyped presentation of vocational information and should give the minority students information about the degree of autonomy that is acceptable in various types of occupations (Griffith, 1977). The need for work experience is especially critical for disadvantaged Black Americans; it provides financial remuneration and enables them to develop specific job skills, knowledge of acceptable work habits and attitudes, consumer economic skills, and to learn about the world of work. Vocational educators should encourage minority students to actively participate in vocational youth organizations which cultivate leadership potential, provide a bridge from adolescence to adulthood, and offer a variety of valuable work experiences (Lee, Jasper, 1976; Gibson, 1977).

The frequent complaint of high school youth, especially minority students, is that their teachers cannot relate to them (Heath, 1970). Vocational teachers will need to develop greater sensitivity to the cultural differences that affect student attitudes and performance (Payne, 1977; Moody and Sheppard, 1976; Scott, 1976; American Vocational Association, 1978).

Some important strategies for improving the access and performance levels of disadvantaged Black Americans are

- individualized instruction (Passow, Goldberg, Tannenbaum, 1967; Smith, Mark, 1976; Johnson, 1975)
- team teaching (Florida State University, College of Education, 1971; Robinson, 1976)
- peer teaching and peer counseling (American Vocational Association, 1976; Passow, Goldberg, Tannenbaum, 1967; Forbes, 1971)
- role models (Florida State University, College of Education, 1971; Cummings, 1977)
- basic vocabulary and academic skills aimed at specific job skills (Love, 1970)

SUMMARY STATEMENT 3: AMERICAN INDIANS

Over 45 percent of the American Indian population resides in four states – Oklahoma (12.7 percent), Arizona (12.4 percent), California (11.6 percent), and New Mexico (9.4 percent), with more than 70,000 American Indians reported in each of these states. Minnesota, Montana, New York, North Carolina, North Dakota, and Washington all report American Indian populations of 20,000 or more. Eight other states report at least 10,000 American Indians in the total state population.

Most American Indians living on reservations do not have access to vocational education programs due to the inaccessibility of facilities and the lack of adequate transportation services or residential accommodations (Oklahoma State Department of Vocational and Technical Education, 1976-77; Blank, et al., 1976; and Coalition of Indian Controlled School Boards, Inc., 1977). Frequently there is a lack of overall planning for vocational education programming that will meet the local tribe's needs for job skill training (Blank, et al., 1976). Trained staff are needed that are sensitive to cultural and language differences and that know the local labor market needs for trained workers (Kinzer, 1972; Blank, et al., 1976; and Coalition of Indian Controlled School Boards, Inc., 1977). Career counseling services are vital to Indian students to enable them to gain knowledge of and adjust to the demands of the world of work (Dupree, 1974; Coalition of Indian Controlled School Boards, Inc., 1977). Vocational education programs with bilingual and bicultural enrichment activities are recommended by Demmert (1976), Kinzer (1972). Alexander (1972) and Purley (1974) expressed the need to improve the performance levels of Indian students to spark their interest in learning various vocational skills. Some recommended interventions are

- mobile vocational training units and facilities (Smith, 1974)
- involvement of Indian parents and tribal members as resource people for cultural enrichment of the vocational education program at all levels (Kinzer, 1972; Coalition of Indian Controlled School Boards, Inc., 1977)
- the provision of bilingual/bicultural staff and teacher aides to assist in the delivery of vocational instructional programs (Alexander, 1972; Kinzer, 1972; Locke, et al., 1977)
- the provision of culturally oriented curricula that are consistent with Indian identity and value systems (Oklahoma State Department of Vocational and Technical Education, 1977; Purley, 1974; Smith, 1974; Coalition of Indian Controlled School Boards, Inc., 1977)
- the provision of on-the-job training opportunities to provide needed income and to promote interest in vocational training (Kinzer, 1972)

SUMMARY STATEMENT 4: HISPANICS

There are over 9 million Hispanics in the United States. Over five and one-half million Hispanics (59 percent) reside in the states of California (25.2 percent), Texas (19.6 percent), and New York (14.4 percent). Ten other states report Hispanic populations of over 100,000. New Mexico has the highest percentage of Hispanics (26.9 percent of the state population) among the fifty states.

The Hispanic population is largely comprised of Mexican Americans and Puerto Ricans (Russell, 1978) for whom English is a second language.

In serving Hispanics

- vocational education personnel should explore the employment needs of local industry and encourage students to explore these career possibilities. One study discovered that some manufacturing plants were searching for qualified bilingual supervisory personnel in a location with a large Hispanic population (Guerro and Arellano, 1973)

- identification with one's family is an important factor in the vocational preparation of Hispanic youth; therefore, parental and community involvement is a contributing factor to the success of the Hispanic student (Ramirez, 1971; Bottoms and Scott, 1976; Schulman, 1973)

- experience-based career education should be provided with an emphasis on career planning and decision-making skills (Heller, 1966; U.S. Office of Education, Educational Programs That Work, 1976; Guerra and Schulman, 1974)

- crosscultural teaching methods are recommended by Burger (1971) and Arechiga (1978), i.e., the use of minority group language, culturally relevant testing and curricula, and the representation of minority group members in decision-making positions for vocational education programs

- positive teacher attitudes are an important factor in the successful performance of Hispanic students (Olsen, 1967) and an understanding of their ethnicity will do much to encourage them (Garcia, 1978). Vocational teachers need to be alert to the culturally unique learning styles of Hispanic populations and to gear instruction appropriately (Lesser, Fifer and Clark, 1965).

SUMMARY STATEMENT 5: APPALACHIAN WHITES

Appalachia is defined as the highland region of the eastern United States, including the central and southern Appalachian Mountains. This area is characterized by economic depression and poverty.

Many Appalachian students have not participated in vocational education programs because of the inaccessibility of programs; adequate transportation is not available (Appalachian Regional Commission, "A Look at Vocational Education in Appalachia", 1970; Manthe, 1970). Many Appalachian youths have only rudimentary academic skills and lack awareness of vocational opportunities and appropriate training to compete for the few skilled jobs in their local area. Poverty is also a problem for many (Appalachian Educational Laboratory, 1971; Appalachian Regional Commission, 1970; Love, 1971). Some Appalachian schools lack adequate counseling services, and occupational information is critically needed (Bureau of Vocational Technical and Adult Education, Division of Vocational Education, 1972). Some suggestions to meet the needs of the Appalachian community are

- remedial education and tutoring in academic skills necessary in trade training areas (Appalachia Regional Commission, 1970; Nystrom, Bayne, and McClellan, 1977).
- intensive guidance and counseling programs to enable Appalachian students to make realistic career choices based on knowledge of the current employment market (Bureau of Vocational, Technical, and Adult Education, Division of Vocational Education, 1972; Detamore, 1972).
- support services such as transportation and welfare assistance on the basis of individual need (Appalachian Regional Commission, 1970; Love, 1971)
- inservice training for teachers with special attention to knowledge of local vocational opportunities (Morse and Morton, 1970; Bureau of the Vocational, Technical and Adult Education, Division of Vocational Education, 1972).

For Appalachian students to succeed in vocational programs, teachers, counselors, administrators, community leaders, employers, and parents must be actively involved (Bureau of Vocational, Technical and Adult Education, Division of Vocational Education, 1972).

SUMMARY STATEMENT 6: ASIAN AMERICANS

California has the largest Asian American population, reporting 39.5 percent of the national total. California's Asian American population is twice as large as that of New York (19.0 percent), the second ranking state. California, New York, and Hawaii (12.2 percent) contain over 70 percent of the total Asian American population in the nation. Only two other states report Asian American populations of more than 10,000.

There is very little available research on vocational education programming for Asian Americans (Sue, Stanley, 1977; Picou and Campbell, 1975; Kitano and Sue, 1973). There is evidence, however, that discrimination is a problem for Asian American students in vocational education (Sue, Stanley, 1977; Kalish and Moriwaki, 1973) and that training opportunities, both in the classroom and on the job, are insufficient in number and variety to meet the needs of the growing Asian American population and those displaced from jobs in traditional industries (New York State Committee, 1977). Other important needs of Asian American students are the need for English proficiency programming (Watanabe, 1973; Kitano, 1971; and Leary, 1971); unbiased assessment (Webster, 1966; and Campbell, 1975); and family input in the student's career decision-making (Levine and Montero, 1973).

An important intervention strategy that was recommended by several sources is the use of paraprofessional teacher and counselor aides from the appropriate minority group to serve as role models and language interpreters; some possibilities are retired people, parents, students in preservice training programs, employees, and workers from social agencies (Stone and DeNevi, 1971; Caudill and DeVos, 1966; and Endo, 1975).

ETHNIC/RACIAL MINORITIES

The access and performance needs of various ethnic/racial minority groups in vocational education have been addressed. While these minority groups are heterogeneous, each has unique vocational needs; however, some commonalities exist with respect to vocational education programming.

- On the whole, acceptance of minority members in vocational education programs and in the labor market has been minimal due to the persistence of negative attitudes (Sue, Stanley, 1977; U.S. Commission on Civil Rights, 1972; Kalish and Moriwaki, 1973; Murase, 1973). As a result, culture conflicts, stress in social adjustment, and low self-esteem are characteristic of many minority group members (Fong, 1973; Kitano and Sue, 1973)

- The cultural differences of minority groups have created a need for an increased number of experiences and activities in vocational education programs that will enable them to explore their personal and cultural heritages (Love, 1970; American Vocational Association, 1978; Forbes, 1971; Cross, Baker, Stiles, 1977; Moody and Sheppard, 1976; Payne, 1977; Kemp, 1966). Minority students also need to understand how differences in their value system or culture may be interpreted by others outside the culture (Payne, 1977).

- The following interventions have been recommended as being important in the vocational education of minority group members:

  1) parent and community involvement especially to add cultural and linguistic enrichment to programs
  2) culturally unbiased or sensitive assessment techniques
  3) individualized training

4) exposure to successful role models in the community
5) vocational training that is more relevant to the demands of the labor market via input from employers
6) career counseling that provides information on locally available employment opportunities (New York State Committee, 1977; Webster, 1966; Campbell, 1975; Blank, et al., 1976; Oklahoma State Department of Vocational and Technical Education, 1977; Heller, 1966; Johnson, 1975).

SUMMARY STATEMENT 7: MIGRANTS

Because of the seasonal nature of their employment, migrant populations are usually transient. Their mobility makes the collection of demographic statistics difficult, but that does not minimize their need for vocational training.

Migrants as a group have been considered to be functionally illiterate in the use of the English language. Seventy-five percent of them are Mexican-Americans whose first language is Spanish (Lynch and Smith, 1977). Most of the literature that addresses this group is focused on the broad topic of migrant education and is not specific to migrant vocational education. Consequently, there is a need for research on the needs and participation patterns of migrant students in vocational education programs. The most critical need for migrant students is the continuity of their instructional program, due to the transitory nature of their lifestyles (Lynch and Smith, 1977; Mattera and Steel, 1974; Lynch, 1978; Guerra, 1976). Some strategies to promote continuity of learning are

- the development of short-term educational/vocational programs (Lynch and Smith, 1977)
- the use of the Migrant Student Record Transfer System (MSRTS) (Lynch and Smith, 1977)
- increased coordination among/across school districts (California State Department of Education, 1970)
- providing sequential educational experiences and assistance (Guerra, 1976).

Migrant students are generally poor, and thus have major health and social needs for adequate medical care, nutritional assistance, housing and child care services (Mattera and Steel, 1974). Supplemental support services involving community resources and practitioners in vocational education programs have been recommended by many sources (Guerra, 1976; U.S. Government Printing Office, *Federal and State Statutes Relating to Farmworkers: A Compilation,* 1976; Lynch and Smith, 1977, and Lynch, 1978). The right climate for learning will be enhanced by the acceptance and involvement of community members and parents in the vocational programs of migrant students (University of the State of New York, and the State Education Department, *Educating Migrant Children,* 1968; Guerra, 1976). Bilingual migrant students, as well as others, evidence a vital need for improved language communication skills (Guerra, 1976; U.S. Government Printing Office, *Federal and State Statutes Relating to Farmworkers: A Compilation,* 1976; Mattera and Steel, 1974; and Henson, 1972). Providing bilingual/bicultural aides and materials will meet the need for improved communication skills. Preservice education programs for personnel working with migrants will enable them to develop needed competencies in language and instruction (Lynch, 1978). The lack of appropriate career models for migrant students underscores the need for career awareness, counseling, and career development programs (Guerra, 1976; Lynch, 1978; California State Department of Education, 1970). Pre-vocational orientation to vocational skill training was another important intervention mentioned by Mattera and Steel, 1974; Guerra, 1976; and U.S. Government Printing Office, *Federal and State Statutes Relating to Farmworkers: A Compilation,* 1976. To summarize, educational experiences to strengthen the self-confidence, self-concept and self-direction of migrant students should be offered through the vocational education curriculum. The review of literature indicates that little is known about environmental community variables, influences, and motivational factors which affect the learning processes of migrant students. Research should focus on identifying the specific learning needs and modalities of migrant students.

SUMMARY STATEMENT 8: THE INCARCERATED

Generally, the population in correctional institutions is concentrated in the most populous states. Nine states — Texas (8.3 percent of the total incarcerated in the United States), California (8 percent), New York (7.5 percent), Florida (5.9 percent), North Carolina (5.7 percent), Ohio (5.1 percent), Michigan (5 percent), Georgia (4.7 percent), Illinois (4.1 percent) contain nearly 55 percent of the total incarcerated population in the country. Wyoming, Vermont, North Dakota, and New Hampshire have fewer than 500 incarcerated.

The incarcerated face the difficult transition from correctional institutions to the world of work. Most offenders are unsuccessful in making the transition. This is evidenced by high national recidivism rates: 40 percent return after one year; 60 percent return after two years; and 90 percent return in five years (Braswell and Fondren, 1976). The offenders with the greatest rehabilitation potential are those who are out of the institution in prerelease programs or in community correctional programs. They stand a better chance of being reintegrated into community life (Braswell and Fondren, 1976). To enable them to make the transition the following needs are crucial

- vocational and career guidance
- intensive support services at release
- job placement assistance and follow-up

(National Advisory Commission on Criminal Justice Standards and Godal, *Corrections,* 1973; Taggart, 1972; Roberts, 1971).

Also, because 81 percent of the inmates in federal and state correctional institutions are school dropouts, their need for a good program of basic academic training to supplement their vocational training programs is evident (Roberts, 1971; Correctional Education Project, Education Commission of the States, *Correctional Education: Forgotten Human Service,* 1976; Chandler, 1973; Jones, 1977; and Reagan and Stougten, 1976). Some important barriers to the effectiveness of vocational education training of offenders are the lack of up-to-date equipment and training methods (Taggart, 1972; Whitson, 1977); the time scheduling constraints of the prison environment (Reagan and Stougten, 1976); and the restrictions of some jobs for licensing ex-offenders (Chandler, 1973). A number of effective interventions to increase access and performance levels are

- flexible scheduling (Jones, 1977; National Advisory Commission on Criminal Justice Standards and Goals, *Corrections,* 1973; Roberts, 1971)
- curricula divided into short, intense modules (National Advisory Commission on Criminal Justice Standards and Goals, *Corrections,* 1973)
- cooperative work release programs with business and industry (Roberts, 1971; National Advisory Commission on Criminal Justice Standards and Goals, *Corrections,* 1973; Taggart, 1972; Reagan and Stougten, 1973)
- labor market/employer input on training techniques (Whitson, 1977; National Advisory Commission on Criminal Justice Standards and Goals, *Corrections,* 1973); provision of a social education program including group guidance with peers and non-offenders (Roberts, 1971; and Braswell and Fondren, 1976)
- individualized instructional programming (Roberts, 1971; National Advisory Commission on Criminal Justice Standards and Goals, *Corrections,* 1973)
- well-trained vocational instructional staff (Chandler, 1973; Jones, 1977; and Roberts, 1971)
- pre-vocational skill training (Reagan and Stougten, 1976).

In summary, planning, flexibility, and individualization will enable correctional vocational education programs to be more responsive to the needs of the correctional population.

SUMMARY STATEMENT 9: THOSE WITH LIMITED ENGLISH PROFICIENCY

No specific demographic data are available for those categorized as having limited proficiency in the English language. This population includes those who are linguistically different because of their ethnic or cultural heritage. Generally, members of this group are fluent in a language other than English.

Vocational education programs have not recognized the diverse needs and backgrounds of linguistically different students (Justiz and Osberg, 1977; Inter-American Research Associates, *The Third Annual Report of the National Advisory Council on Bilingual Education*, 1977). Barriers that inhibit the access and performance levels of limited English or non-English speakers are

- language and communication barriers
- inadequate assessment instrumentation
- lack of bilingual/bicultural curricula; vocational and career related materials are not readily available in a bilingual format
- vocational education staff with no training in bilingual instruction
- lack of parental and community involvement in vocational education programming (Rios and Hansen, 1978; Cortines, 1975; Cordasco, 1972; and Justin, 1972).

To meet these needs, many sources recommend the development of fully integrated bilingual vocational education programs that are staffed with bilingual instructors and that include the provision of bilingual/bicultural instructional materials (Alexander and Nava, 1976; Justiz and Osberg, 1977; Inter-America Research Associates, 1977; Salazar and Christensen, 1976). Community involvement provides essential assistance in bicultural/bilingual programming. The development of linkages with social service agencies assisting disadvantaged, limited English-speaking persons was recommended by Ochoa (1977). Selection and placement of students in bilingual vocational programs should be based on language proficiency and dominance rather than on the use of intelligence tests (Ballesteros, 1978). Criterion-referenced tests also provide a meaningful assessment technique for bilingual students. The development of individualized materials, methods, and approaches was recommended by Ochoa (1977) to increase comprehensive training opportunities for individuals with limited English-speaking ability. Cultural awareness training programs for vocational educators were seen as an important intervention by many sources (Development Associates, Inc., 1976; Purley, 1974; and Ulibarri, 1978). The need for expanding bilingual/bicultural vocational education programs to assist bilingual students to receive appropriate vocational training is critical (Justiz and Osberg, 1977; and Ballesteros, 1977).

SUMMARY STATEMENT 10: THE GIFTED AND TALENTED

Classifying individuals as gifted and talented is difficult. Educators, psychologists, and others have not reached a consensus as to a single or universal quantifiable measure of these characteristics. In addition, population data on those designated as gifted and talented are generally not aggregated beyond the local or state levels.

Identifying the gifted and talented in vocational education, as well as in general education, remains a problem of considerable magnitude (Khatena, 1978; Malone, 1975; Ciha, 1974). The identification process should be based on a variety of information to reflect several indicators of superior performance or potential (Renzulli and Smith, 1977). Some research indicates that teachers have problems in accurately identifying gifted students (Gear, 1976), while parents apparently make this identification more accurately (Ciha, 1974). It was explained that counselors, in particular, must be alert to potential cultural and racial bias inherent in most commonly used intelligence and aptitude tests (Ciha, 1974).

Career awareness for the gifted has not received sufficient attention, and some evidence exists that gifted and talented youths are systematically counseled away from vocational education (Bachtold, 1978; Zaffrann and Colangelo, 1977; Pulvino, 1976; Ellis, 1976; and Herr, 1976). Fox and Rodenstein (1977) both argue that career awareness is especially critical to careers for gifted girls and women. Differential counseling, that is, individualized counseling which is appropriate to the characteristics of gifted students, is one strategy thought to alleviate career counseling deficiencies (Zaffrann and Colangelo, 1977).

Performance of the gifted and talented in vocational education has varied, but little research has been directed to this issue. Gallagher (1975) reported that gifted male and female school dropouts expressed concern that schools were not preparing students for the real world and were not meeting either their vocational or professional needs. Conversely, Fisher and Scheider (1976), and Beam (1976), report successful experiences of gifted students in vocational agriculture.

Numerous teacher, counselor, or curriculum strategies are advocated for enhancing school programs for gifted and talented youth. Stanley (1976) advocated curriculum enrichment and acceleration. Terman's (1977) studies show that acceleration is beneficial to most students. Others suggest extracurricular activities, ability groupings, and special interest groups (Trezise, 1976; Bachtold, 1978; and Khatena, 1977). In vocational education, flexible programming and individualized instruction are the most frequently named interventions (Beam, 1976; Lee, 1976; and Milne, 1976). Diehl (1976) specifically names student organizations as a positive approach to enable gifted students to achieve in vocational education.

We have reviewed summary information about ten special groups and their relationship to vocational education. These summary statements identified the states in which the majority and in some cases the fewest number of persons in each special group reside. There are many more people with these same special needs across the nation. The following table (Table 7) presents composite population data by state for Black Americans, Hispanics, American Indians, Asian Americans, the incarcerated, and the handicapped.

TABLE 7

SUMMARY DATA OF STATE POPULATION STATISTICS BY SUBPOPULATION

	Total State Population	Black Americans	Hispanics	American Indians	Asian Americans	Corrections	Handicapped
Alabama							
Males		422,539	18,702	1,074	237	3,300	
Females		480,461	20,146	1,089	230	200	
Total	3,614,000	903,000	38,848	2,163	467	3,500	53,987
Alaska							
Males		5,188	2,623	8,377	124	686	
Females		3,672	1,975	7,703	59	28	
Total	352,000	8,860	4,598	16,080	183	714	9,598
Arizona							
Males		26,468	130,518	46,267	1,944	3,173	
Females		26,331	134,252	48,043	1,795	172	
Total	2,224,000	52,799	264,770	94,310	3,739	3,345	43,046
Arkansas							
Males		167,098	11,935	1,087	453	2,070	
Females		185,441	12,423	1,001	451	106	
Total	2,116,000	352,539	24,358	2,088	904	2,176	28,487
California							
Males		681,815	1,171,946	44,303	88,286	19,064	
Females		716,683	1,197,346	43,960	82,133	1,081	
Total	21,185,000	1,398,498	2,369,292	88,263	170,419	20,145	332,291
Colorado							
Males		33,888	110,935	4,242	877	2,342	
Females		32,178	114,571	3,760	728	66	
Total	2,534,000	66,066	225,506	8,002	1,605	2,408	47,944
Connecticut							
Males		85,975	32,342	1,113	942	3,063	
Females		95,499	33,116	1,209	791	138	
Total	3,095,000	181,474	65,458	2,322	1,733	3,201	62,085
Delaware							
Males		37,579	4,265	204	253	902	
Females		40,726	4,212	275	255	42	
Total	579,000	78,305	8,477	479	508	944	14,307
Florida							
Males		498,535	191,077	3,100	1,640	14,455	
Females		543,431	213,959	3,292	1,400	370	
Total	8,357,000	1,041,966	405,036	6,392	3,040	14,825	117,258
Georgia							
Males		556,242	21,744	1,245	689	11,200	
Females		627,820	23,545	1,026	638	600	
Total	4,926,000	1,184,062	45,289	2,271	1,327	11,800	85,209

TABLE 7 (continued)

SUMMARY DATA OF STATE POPULATION STATISTICS
BY SUBPOPULATION

	Total State Population	Black Americans	Hispanics	American Indians	Asian Americans	Corrections	Handicapped
Hawaii							
Males		5,046	13,061	667	26,412	512	
Females		2,553	11,760	501	26,171	21	
Total	865,000	7,599	24,821	1,168	52,583	533	10,545
Idaho							
Males		1,298	7,787	3,274	326	765	
Females		739	8,290	3,372	248	26	
Total	779,000	2,037	16,077	6,646	574	791	14,573
Illinois							
Males		671,631	199,272	4,918	7,601	10,152	
Females		750,722	193,932	5,386	6,476	285	
Total	11,145,000	1,422,353	393,204	10,304	14,077	10,437	229,797
Indiana							
Males		171,333	56,567	1,562	969	4,775	
Females		185,046	55,905	1,743	957	137	
Total	5,311,000	356,379	112,472	3,305	1,926	4,912	87,645
Iowa							
Males		15,856	10,741	1,348	536	2,010	
Females		16,686	10,276	1,576	421	87	
Total	2,870,000	32,542	21,017	2,924	957	2,097	51,056
Kansas							
Males		52,607	27,333	4,141	659	2,120	
Females		53,717	26,792	4,120	458	91	
Total	2,267,000	106,324	54,125	8,261	1,117	2,211	37,623
Kentucky							
Males		111,198	22,286	682	318	3,500	
Females		119,165	22,463	640	247	130	
Total	3,396,000	230,363	44,749	1,322	565	3,630	57,058
Louisiana							
Males		514,013	34,667	2,293	685	6,595	
Females		571,214	35,856	2,226	476	213	
Total	3,791,000	1,085,227	70,523	4,519	1,161	6,808	86,989
Maine							
Males		1,679	1,246	916	51	638	
Females		1,137	1,187	956	38	11	
Total	1,059,000	2,816	2,433	1,872	89	649	23,702
Maryland							
Males		336,565	22,671	1,985	2,852	8,219	
Females		361,929	22,790	1,901	3,109	272	
Total	4,098,000	698,494	45,461	3,886	5,961	8,491	84,184

TABLE 7 (continued)

SUMMARY DATA OF STATE POPULATION STATISTICS BY SUBPOPULATION

	Total State Population	Black Americans	Hispanics	American Indians	Asian Americans	Corrections	Handicapped
Massachusetts							
Males		81,532	32,342	1,998	7,593	2,702	
Females		92,165	33,804	2,239	6,425	108	
Total	5,828,000	173,697	66,146	4,237	14,018	2,810	131,992
Michigan							
Males		478,675	76,269	7,696	3,521	12,219	
Females		511,988	74,801	8,316	3,090	446	
Total	9,157,000	990,663	151,070	16,012	6,611	12,665	153,113
Minnesota							
Males		17,506	18,228	10,818	1,118	1,729	
Females		17,215	19,028	11,504	874	57	
Total	3,926,000	34,721	37,256	22,322	1,992	1,786	72,136
Mississippi							
Males		386,693	7,532	1,781	606	1,646	
Females		428,933	8,283	2,010	569	25	
Total	2,346,000	815,626	15,815	3,791	1,175	1,671	29,219
Missouri							
Males		226,026	29,707	2,302	1,331	4,769	
Females		253,720	30,373	2,588	1,129	151	
Total	4,763,000	479,746	60,080	4,890	2,460	4,920	94,388
Montana							
Males		1,130	3,176	13,004	163	530	
Females		670	3,168	13,381	101	7	
Total	748,000	1,800	6,344	26,385	264	537	8,610
Nebraska							
Males		19,459	10,014	3,281	340	1,305	
Females		20,605	10,735	3,390	194	110	
Total	1,546,000	40,064	20,749	6,671	534	1,415	25,270
Nevada							
Males		13,835	10,481	3,681	570	1,030	
Females		13,786	10,024	3,795	396	57	
Total	592,000	27,621	20,505	7,476	966	1,087	11,134
New Hampshire							
Males		1,505	1,030	164	129	271	
Females		1,162	1,251	146	139	3	
Total	818,000	2,667	2,281	310	268	274	9,916
New Jersey							
Males		363,587	142,725	1,953	4,620	5,868	
Females		405,658	145,763	2,302	4,135	210	
Total	7,316,000	769,245	288,488	4,255	8,755	6,078	145,077

TABLE 7 (continued)

SUMMARY DATA OF STATE POPULATION STATISTICS
BY SUBPOPULATION

	Total State Population	Black Americans	Hispanics	American Indians	Asian Americans	Corrections	Handicapped
New Mexico							
Males		9,867	152,926	34,267	298	1,541	
Females		9,447	155,414	37,315	161	64	
Total	1,147,000	19,314	308,340	71,582	459	1,605	15,150
New York							
Males		999,798	649,447	12,077	44,158	18,420	
Females		1,164,762	702,535	13,483	37,745	482	
Total	18,120,000	2,164,560	1,351,982	25,560	81,903	18,902	240,251
North Carolina							
Males		540,275	21,935	22,303	591	13,908	
Females		585,610	21,479	21,892	543	440	
Total	5,451,000	1,125,885	43,414	44,195	1,134	14,348	98,036
North Dakota							
Males		1,538	1,051	6,571	27	276	
Females		981	1,441	6,994	51	1	
Total	635,000	2,519	2,492	13,565	78	277	8,977
Ohio							
Males		460,707	65,398	2,896	2,864	12,244	
Females		509,423	64,597	3,285	2,399	567	
Total	10,759,000	970,130	129,995	6,181	5,263	12,811	168,314
Oklahoma							
Males		80,944	25,479	47,335	458	3,763	
Females		90,272	25,811	49,468	417	182	
Total	2,712,000	171,216	51,284	96,803	875	3,945	44,181
Oregon							
Males		13,096	10,857	6,244	2,624	2,966	
Females		13,115	11,481	6,966	2,150	133	
Total	2,288,000	26,211	22,338	13,210	4,774	3,099	37,258
Pennsylvania							
Males		475,986	53,022	2,541	3,758	7,477	
Females		540,565	55,871	3,002	3,339	259	
Total	11,827,000	1,016,551	108,893	5,543	7,097	7,736	206,792
Rhode Island							
Males		12,592	4,095	724	557	660	
Females		12,627	3,494	693	466	14	
Total	927,000	25,219	7,589	1,417	1,023	674	15,971
South Carolina							
Males		376,458	7,646	1,068	249	6,678	
Females		411,997	6,465	1,023	144	262	
Total	2,818,000	788,455	14,111	2,091	393	6,940	72,357

TABLE 7 (continued)

SUMMARY DATA OF STATE POPULATION STATISTICS
BY SUBPOPULATION

	Total State Population	Black Americans	Hispanics	American Indians	Asian Americans	Corrections	Handicapped
South Dakota							
Males		1,035	1,546	15,152	171	535	
Females		809	1,380	15,891	114	28	
Total	683,000	1,844	2,926	31,043	285	563	9,937
Tennessee							
Males		291,105	24,414	690	817	5,165	
Females		329,531	25,170	742	612	210	
Total	4,188,000	620,636	49,584	1,432	1,429	5,375	99,251
Texas							
Males		671,332	895,424	8,752	4,271	20,135	
Females		725,273	945,224	8,169	3,812	827	
Total	12,237,000	1,396,605	1,840,648	16,921	8,083	20,962	233,553
Utah							
Males		3,858	16,946	5,182	703	823	
Females		2,466	16,965	5,369	472	18	
Total	1,206,000	6,324	33,911	10,551	1,175	841	37,204
Vermont							
Males		396	811	136	91	410	
Females		288	799	68	112	12	
Total	971,000	684	1,610	204	203	422	6,382
Virginia							
Males		418,159	20,442	2,451	1,217	7,222	
Females		442,143	19,780	2,411	1,190	287	
Total	9,967,000	860,302	40,222	4,862	2,407	7,509	77,616
Washington							
Males		37,479	29,964	15,422	4,957	3,601	
Females		33,380	27,394	15,402	4,419	197	
Total	3,544,000	70,859	57,358	30,824	9,376	3,798	70,972
West Virginia							
Males		30,951	4,088	212	136	1,143	
Females		35,853	4,692	306	130	36	
Total	1,803,000	66,804	8,780	518	266	1,179	30,136
Wisconsin							
Males		62,121	31,027	9,167	1,422	3,226	
Females		66,007	31,848	9,609	1,089	122	
Total	4,607,000	128,128	62,875	18,776	2,511	3,348	58,020
Wyoming							
Males		1,327	6,739	2,425	62	317	
Females		1,128	7,155	2,292	42	19	
Total	374,000	2,455	13,894	4,717	104	336	7,261

TABLE 7 (continued)

SUMMARY DATA OF STATE POPULATION STATISTICS
BY SUBPOPULATION

	Total State Population	Black Americans	Hispanics	American Indians	Asian Americans	Corrections	Handicapped
Washington, D.C.							
Males		252,657	6,505	N/R	1,457	N/R	N/R
Females		284,913	8,603		1,310		
Total	716,000	537,570	15,108		2,767		

Sources:
a. PC (2)-1 Negro. U.S. Census of Population, U.S. Department of Commerce, Social and Economic Statistic Administration, Bureau of the Census, 1970.
b. PC (2)-1 Person of Spanish Origin. U.S. Census of Population, U.S. Department of Commerce, Social and Economic Statistic Administration, Bureau of the Census, 1970.
c. Theodore N. Taylor. The States and Their Citizens. (Washington: Bureau of Indian Affairs, U.S. Department of Interior, 1972), pp. 43-44.
d. PC (2)-1 Japanese, Chinese, and Filipinos in the United States. U.S. Census of Population, U.S. Department of Commerce, Social and Economic Statistic Administration, Bureau of the Census, 1970.

CHAPTER 4

DATA NEEDS FOR EFFECTIVE VOCATIONAL PROGRAMS: WHY IT'S NECESSARY AND HOW IT CAN BE DONE

In the preceding chapters, we defined special needs populations, discussed existing data about the number of special needs learners served by vocational education, and presented summary descriptive and demographic information about each special group including its relationship to vocational education. We have also identified three major problems that cause inconsistencies in vocational program enrollment data reported by the various states:

1) A lack of consistency across states in the method and procedures for reporting numbers of individuals classified as "special".
2) No commonly accepted definition of "socioeconomically disadvantaged" or "handicapped".
3) Counting only those individuals who are enrolled in special programs or who receive special services as special needs learners.

The Vocational Education Data System (VEDS) will be implemented for FY 1978 reporting from the states. This system should eliminate many of the inconsistencies that now exist in identifying, counting, and reporting special needs learners. With the VEDS system in place, vocational educators, planners, and administrators should find compliance and accountability requirements of state and federal agencies less difficult.

Each state collects demographic data on special learners in vocational education programs; however, the information collected is frequently not useful to the vocational teacher, counselor, administrator, or planner in measuring program effectiveness or in effecting program improvement. Typically, data are not available in a systematic, reliable, or consistent format which address such questions as sex equity, nontraditional program enrollments, access, performance as measured by program completion, and success in placement and job retention following training. The question, "How well are vocational educators meeting the needs of handicapped and disadvantaged persons?" is never answered completely. A demographic profile data system that provides continuous and accurate information about the special needs learner in vocational education is necessary. Such a system could serve as a base for program planning, evaluation, and improvement. The system would be concerned —

1) with the development of an adequate set of definitions and categories of data which are not only logical but which have consistency and meaning to others;
2) with the development of a set of dimensions focusing on access, performance, and measures of success for determining how well special needs populations are being served;
3) with the development of effective data collection instruments, data flow procedures, and data processing procedures;
4) with the coordination, integration, and design of the various subsystems.

The objectives of this demographic profile data system would include

- providing a centralized source or base of information that responds directly to the diverse needs of special populations
- providing information useful for program planning and improvement purposes to enhance the success of special needs groups in the labor market
- measuring levels of access, performance, and success of special needs populations in vocational education programs
- providing an information base for identifying special programs
- providing information to assist vocational educators and planners in meeting compliance and accountability requirements
- providing information necessary for routine reporting to local, state, regional, and federal agencies and organizations
- providing an information base which can be used for supporting qualitative changes in vocational education programs serving special needs populations.

The demographic profile system should include the following interrelated subsystems.

- an input subsystem for identifying useful demographic data about special needs individuals and groups
- a data subsystem for coding, organizing, and storing data
- an output subsystem for decoding, organizing, and displaying data for users. The system should be dynamic and comprehensive to allow for continuous modifications to the data base in response to new and changing data requirements.

An effective demographic profile data system would provide an organized set of information for educators, counselors, planners, and administrators to measure vocational education programs for special needs learners. Vocational program enrollment data should be collected using the U.S. Office of Education instructional and classification codes. Students enrolled in these programs should be categorized, as appropriate, in the following special needs groups.

1. Special target populations (as referenced in P.L. 94-482) that include: women, displaced homemakers, single parents, racial/ethnic minorities, those with limited English proficiency, and American Indians

2. The disadvantaged – using the following uniform characteristics:
   - illiterate in any language characterized by the inability to read a newspaper or to understand simple written directions
   - not illiterate but fluent only in a language other than English
   - lack of educational skills usually needed to succeed in completing the program's requirements
   - have poor attendance record to the extent that it is likely to prevent completion of the program's requirements
   - unable to complete the program without financial assistance.

3. The handicapped — as characterized by

- lacking the physical or mental capacity needed to complete vocational education programs successfully without special assistance
- having the physical and mental capacities to complete the program successfully but not to be gainfully employed in a competitive work environment in a job which is training related.

Handicapping conditions include:
- mental retardation
- evidence exists which indicates that the individual is a slow learner
- emotional problems
- orthopedic problems
- seriously visually impaired
- legally blind
- hearing impaired
- other physical or mental conditions
- learning disabled

Here are some suggested questions about access, performance, and success that could be asked to determine if special needs populations are really being served.

ACCESS

- Number of males versus the number of females by handicapping and/or disadvantaged condition
- Number of males versus number of females by handicapped and/or disadvantaged condition in nontraditional classes
- Number of males versus number of females by program level and other combinations and conditions including special services provided and received, special language instructional training, or basic literacy training

PERFORMANCE

- Number of males versus the number of females completing regular and special vocational education programs by disadvantaged or handicapping condition
- Number of males versus the number of females considered as early leavers in regular and special vocational education programs by disadvantaged or handicapped condition

SUCCESS

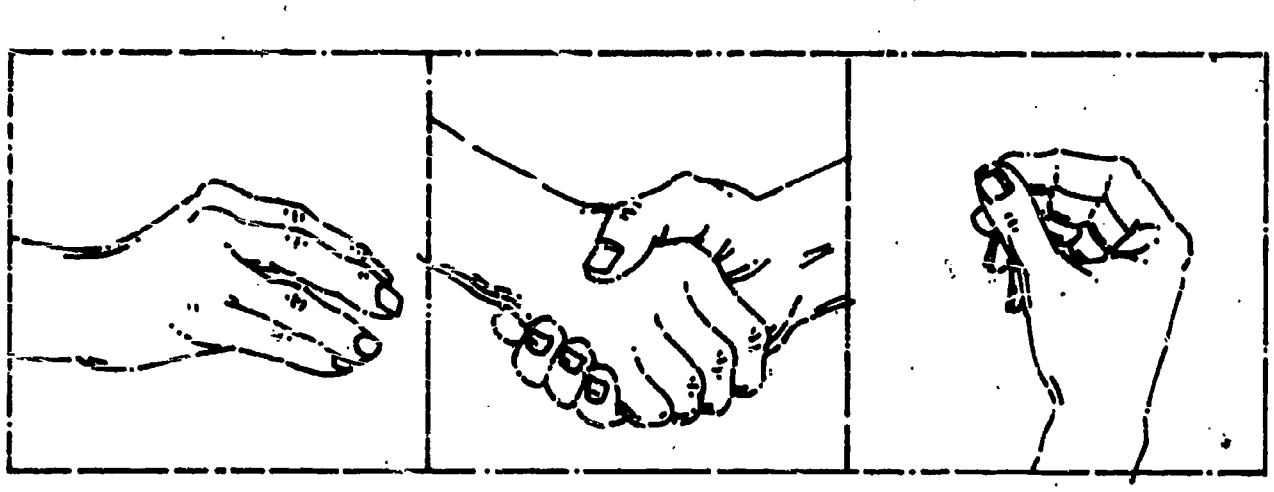
- Number of males versus the number of females being placed who are disadvantaged and/or handicapped. (Data should include training related and other placements of these students.)
- Number of males versus the number of females being retained on the job who are disadvantaged or handicapped. (Data should include the number of job changes and kind of employment obtained by these students.)

- Number of males versus the number of females receiving wages for employment who are disadvantaged or handicapped (Data should include initial and subsequent wages.)

Such a demographic profile data system would not only provide necessary report information for local, state, and federal agencies, but also would provide data useful to improve and increase planning, measurement, modification, integration, coordination, and accountability of vocational education programs that respond effectively to the unique needs of special groups.

The National Center's Management Information System for Vocational Education (MISVE) with its data base management computer software system (SYSTEM 2000) is one example of such a system. MISVE/System 2000 offers a variety of data output. Data may be reported in the format required by the National Vocational Education Data System (VEDS). Formats such as the COBOL standard procedural language may be used. With standard statistical packages, a number of analyses can be performed.

MISVE/System 2000 provides a viable information base to facilitate program planning, monitoring, and improvement. A sample computer printout depicting data about special needs learners is presented below. This computer printout was generated using MISVE/System 2000 and a simulated data base. This sample demographic profile addresses access, performance, and success and presents data useful in measuring the extent to which special populations are represented in the vocational program.



The administrator, classroom teacher, or others needing information about special learners can query MISVE using either component (code) numbers or the data base definition name. MISVE will read either the number codes or a natural "English-like" syntax.

If you want to know the total vocational program enrollment by sex at the beginning of the term, MISVE will give this response:
The total enrollment at the beginning of the term is 1237. 899 are males and 338 are females.

SAMPLE MISVE PROFILE

ACCESS

```
list c437, c440,(c437+c440):
 LIST C437, C440,(C437+C440):
   BOT STUD MALE    BOT STUD FEMALE    TOTAL NUMBER
***
*        899              338               1237
```

LIST beginning of term enrollment for student males, females, and total number of students

BOT-Beginning of Term enrollment

How many disadvantaged and how many handicapped students are enrolled in the vocational program, and how many other students are in the program? The total enrollment of disadvantaged students is 107; the total number of handicapped is 32, and the total number of other students is 1097.

```
list c443, c446,(c437+c440-c443-c446):
 LIST C443, C446,(C437+C440-C443-C446):
   BOT STUD DISADVANTAGED    BOT STUD HANDICAPPED
***
*             108                        32

   TOTAL STUDENTS NEITHER HANDICAPPED NOR DISADVANTAGED
***
*                          1097
```

LIST beginning of term enrollment for disadvantaged, handicapped, and for students who are neither disadvantaged nor handicapped

What are the percentages of disadvantaged students, handicapped students, and female students in the vocational program? The percentages are shown in the MISVE profile.

```
list((c443*100.0)/(c437+c440)),((c446*100.0)/(c437+c440)),
((c440*100.0)/(c437+c440)):
 LIST((C443*100.0)/(C437+C440)),((C446*100.0)/(C437+C440)),
((C440*100.0)/(C437+C440)):
  PERCENT DISADVANTAGED    PERCENT HANDICAPPED    PERCENT FEMALES
***
*          8.731                  2.587                 27.324
```

LIST the percent of disadvantaged, the percent of handicapped, and the percent of females in the data base

How many students in the vocational program are Spanish, Black, Oriental, or American Indian? The MISVE profile shows the total for each of these minority groups.

```
list c449,c452,c455,c458:
 LIST C449,C452,C455,C458:
   BOT STUD SPNISH    BOT STUD BLACK    BOT STUD ORIENTAL AM
***
*          57                284                  19

   BOT STUD AM INDIAN
***
*          94
```

LIST beginning of term enrollment for Spanish, Black, Oriental Americans, and American Indian students in the data base

How many of the disadvantaged students in the vocational program are enrolled in programs to improve their English proficiency?

```
list count c422 wh c428 eq 2:
 LIST COUNT C422 WH C428 EQ 2:
   CNT STUD INSTRUCTION FOR ENGLISH PROF
***
*                  14
```

LIST the count of special needs disadvantaged students who are receiving instruction for improving their proficiency in English

SAMPLE MISVE PROFILE (continued)

PERFORMANCE

How many students completed the vocational program?

```
list count c359 wh c359 exists:
 LIST COUNT C359 WH C359 EXISTS:
   CNT STUD COMP PROGRAM CHECK
***
*                1578
```

LIST the total count of program completers

How many of these program completers are members of the various ethnic groups?

```
ditto wh same and c296 eq 1:
 DITTO WH SAME AND C296 EQ 1:
   CNT STUD COMP PROGRAM CHECK
***
*                92
```

LIST the total number of program completers who are members of the various ethnic groups identified in the data base

```
di wh same and c296 spans 1*4:
 DI WH SAME AND C296 SPANS 1*4:
   CNT STUD COMP PROGRAM CHECK
***
*                92
```

How many of these are Spanish-speaking?

LIST the total number of program completers who are Spanish-speaking

Would it be useful to compare these data with data from the preceding year to determine if performance of special needs groups has improved?

Querying MISVE, we find that 297 disadvantaged students completed the vocational program . . .

However, only 22 were placed in a training-related occupation.

What does this say about *success* for program completers who are disadvantaged? What would this mean if it were your program?

Sample MISVE Profile (continued)

SUCCESS

```
list count c278 wh c359 exists and c428 exists:
 LIST COUNT C278 WH C359 EXISTS AND C428 EXISTS:
   CNT STUDENT INFORMATION
***
*            297

LIST the number of special needs disadvantaged students who are
program completers
```

```
di wh same and c278.has c368 eq 1:
 DI WH SAME AND C278 HAS C368 EQ 1:
   CNT STUDENT INFORMATION
***
*             22

LIST the number of disadvantaged special needs students who were
placed in a training related occupation
```

The sample MISVE profile gives you an idea of the kinds of data that this or a similar management information system can provide. These examples do not show the *full* capability of MISVE or other such systems. The important thing is that the system can be used to provide information to plan, evaluate, and improve programs.

CONCLUSION

It is not enough that vocational educators become increasingly responsive to special populations solely on the basis of compliance and accountability. The collection and interpretation of demographic data and statistics are vital to planning and delivering vocational programs, but special people need special attention. Planning and administering vocational programs for special learners require accepting them as individuals, recognizing their limitations and potential, understanding their unique needs, and knowing how to make programs responsive to their needs and making an extra effort to encourage their full participation.