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ABSTRACT

This companion document providing basic information for general educators and other community persons to increase their awareness and understanding of how to meet the needs of handicapped youth in the school-to-work transition, five other companion documents, and an inservice guide comprise a series developed for assisting disabled persons in their transition from school to work. This document begins by discussing the handicapped student population, mainstreaming concerns, and legislative requirements and resources. General descriptions of capabilities and dysfunctions associated with selected handicapping conditions as well as descriptions of effective instructional strategies are provided for those working with handicapped persons. These handicapping conditions are included: deafness/hearing impairment, blindness/visual impairment, mental retardation, learning disabilities, orthopedic impairment, multiple sclerosis, and other health impairments. Materials adaptations as well as environmental modifications are also briefly described. A brief discussion on facilitating successful transition concludes the document. An appendix listing sources of curriculum materials and special aids is followed by a bibliography. (YLB)

Research and Development Series No. 257F

EXTENDING HORIZONS: SCHOOL AND COMMUNITY PERSONS

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a document in the series

EXTENDING HORIZONS:

A RESOURCE FOR ASSISTING HANDICAPPED YOUTH IN THEIR TRANSITION FROM VOCATIONAL EDUCATION TO EMPLOYMENT

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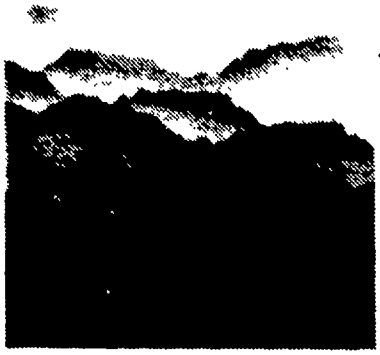

Extending Horizons: School and Community Persons provides basic information for general educators and other community persons to increase their awareness and understanding of how to meet the needs of handicapped youth in the school-to-work transition. General descriptions of capabilities and dysfunctions associated with selected handicapping conditions as well as descriptions of effective instructional strategies are provided for those working with handicapped persons. Materials adaptations as well as environmental modifications are briefly described also.

MAINSTREAMING AND VOCATIONAL EDUCATION— A WORKABLE COMBINATION

The law requires and conscience dictates that handicapped persons ages 3 through 21 be provided a free, public education designed to meet their unique needs and to lead to gainful employment. Because the handicapped population in general, experiences inordinately high levels of unemployment and underemployment, it is essential that handicapped students have access to appropriate vocational education to prepare them for successful competition in the labor market and that they have access to support mechanisms to assist them in successfully making the transition from school to work.

Traditionally, handicapped students have been separated from the educational mainstream early in their school careers and tracked into "special" programs. The vocational focus of these programs has generally been limited to unskilled or semiskilled occupations, and the personnel of such special education programs have been specifically trained to deal with the effects of the various handicapping conditions of their students but have not been specifically trained to teach vocational skills.

Today, with the development of federal, state, and local legislation designed to protect the rights of handicapped citizens and with a generally more enlightened public attitude toward handicapped persons than previously, automatic segregation of handicapped individuals in education and employment is no longer acceptable. As a result, the personnel of regular vocational education programs, at both the secondary and postsecondary levels, find themselves faced with the dilemma of how to accommodate handicapped students in their classrooms and programs without the benefit of special education preparation and knowledge.

The Handicapped Student Population

Who are these handicapped students? Attempts to count the handicapped population are hampered by differences in definition and in interpretation. The term *handicapped* has no universal meaning. Relevant legislation does, however, provide a framework within which some estimates can be made. Public Law 94-142 (The Education for All Handicapped Children Act) defines "handicapped children" as those ages 3 through 21 who

> are evaluated in accordance with procedures specified in the regulations and who, as a result, are found to be mentally retarded, hard-of-hearing, deaf, speech-impaired, visually handicapped, seriously emotionally handicapped, orthopedically impaired, deaf-blind, other health impaired or specific learning disabled, and are in need of special education or related services. (Excerpted from *Training the Handicapped for Productive Employment* by Robert Weisgerber, Peter Dahl, and Judith Appelby by permission of Aspen Systems Corporation, © 1980, p. 4.)

Using this definition, for the 1977-78 school year, 3,776,926 children with the above-listed conditions were reported as being served educationally in the United States. The breakdown in table 1 (ibid. p. 4) shows the distribution of this number by handicapping condition. Projected estimates of the numbers of individuals fitting the legal definition of handicapped children range from five to eight million.

TABLE 1

HANDICAPPED STUDENTS IN U.S. SCHOOLS—1977-78

Conditions	1	2	3
Speech Impaired	1,226,957	32.5	2.39
Learning Disabled	969,368	25.7	1.89
Mentally Retarded	944,909	25.0	1.84
Emotionally Disturbed	288,626	7.6	.56
Other Health Impaired	136,164	3.6	.27
Orthopedically Impaired	88,070	2.3	.17
Deaf/Hearing Impaired	87,144	2.3	.17
Visually Handicapped	35,688	0.9	.07
TOTALS	3,777,106 [3,776,926]	100.0 [99.9]	7.36

1 = number of handicapped children receiving services
2 = percent of handicapped school-aged children
3 = percent of all school aged children (N = 51,256,655)

SOURCE: Adapted from *Progress Toward a Free Appropriate Public Education: A Report to Congress on the Implementation of Public Law 94-142, The Education for All Handicapped Children Act,* U.S. Department of Health, Education, and Welfare, Office of Education, January 1979, pp. 159, 162.

Participation rates for handicapped students in vocational education programs do not reflect the actual ratio of handicapped students to the overall student population. Handicapped students in 1976 and 1978 represented only 1.8 percent and 2.1 percent, respectively, of the total vocational enrollments nationwide (ibid., p. 65). Given the high unemployment and underemployment rates among working-age handicapped persons, it is clear that the vocational education needs of this group are not being met.

Mainstreaming Concerns

Legislative and professional efforts to correct this problem have centered in recent years upon the concept of "mainstreaming." The National Advisory Council on Education Professions Development defines mainstreaming as follows:

> . . . mainstreaming is the conscientious effort to place handicapped children into the least restrictive education setting which is appropriate to their needs. The primary objective of this process is to provide children with the most appropriate and effective educational experiences which will enable them to become self-reliant adults. Within this objective, it is thought preferable to educate children the least distance away from the mainstream of society. Hence there is a heavy emphasis on movement into the regular classroom whenever possible. (*Programs to Combat Stereotyping in Career Choice* 1980, p. 158)

Predictable problems have arisen in implementing the mainstreaming concept. Regular education personnel have not traditionally been prepared to deal with the unique needs of handicapped students. They have had to deal with unfamiliar classroom situations and with their own concerns about how best to ensure effective educational experiences for all their students, handicapped and nonhandicapped. These concerns fall into three basic categories:

- **Can regular vocational instructors teach both handicapped and nonhandicapped students?** This concern centers around the fear that vocational personnel who have not had special preparation will not be able to teach handicapped students, reflecting the assumption that handicapped students require radically different and highly individualized instructional techniques. While handicapped students do require individualization of instruction and modification of traditional methods to varying degrees, in many cases these requirements can be met successfully by vocational educators in the regular classroom. Vocational instructors with local administrative leadership can make effective use of resource personnel—special education teachers, teacher aides, guidance counselors, parents, peer tutors, community resource persons, and consultants—for assistance in effectively including handicapped students in vocational education programs.

- **What about the time and effort required to adapt the instructional program to the needs of the handicapped students?** The experiences of educators who have already made the transition to mainstreaming prove that the time and effort required of regular vocational personnel to make necessary adaptations in curriculum, materials, and methods are not prohibitive. Much work has already been done in the areas of adapting vocational curricula and teaching methods to meet the needs of students with a variety of handicapping conditions. The attached bibliography cites a number of excellent resources. Once again, the vocational instructor should draw on the expertise of available resource personnel for assistance in effecting the necessary changes.

- **How can the psychological welfare and physical safety of the handicapped students be ensured?** This concern is legitimate inasmuch as the students' safety and comfort are essential to a successful learning experience. Minor modifications of safety procedures and effective sensitizing of nonhandicapped students have proven, however, to be both effective and easily accomplished.

Mainstreaming can be abused if handicapped students are placed in regular classrooms without the proper support. In such a case, the mainstreaming experience is a negative one for everyone concerned. The student feels that he or she has failed, the nonhandicapped students develop a negative view of handicapped peers, and the instructor and other educational personnel involved in the mainstreaming exercise receive a negative impression of the concept. It is essential, therefore, that mainstreaming be approached realistically, with sufficient prior planning to identify and make provision for the special needs of the student(s) involved.

While the types of concerns cited above can be dealt with effectively through the use of available resources, negative attitudes toward mainstreaming are difficult to change. In order to ensure that such attitudes do not prevent the assimilation of handicapped students into regular vocational education programs, the mainstream concept has been formalized as a matter of public policy. The legislation mandating mainstreaming also provides financial resources for its accomplishment.

Legislative Requirements and Resources

The major piece of federal legislation relating to mainstreaming is The Education for All Handicapped Children Act of 1975 (Public Law 94-142). The law requires that all handicapped children ages 3 through 21 be provided a free, appropriate public education designed to meet each student's unique educational needs. It further requires that the educational placement of the handicapped student be in the *least restrictive environment* appropriate for the individual. In other words, if a disabled student can function in a regular classroom when reasonable accommodations are made, that student should be in a regular classroom. The intent of this language in the legislation is to ensure that handicapped students are not shunted off into "special" classes, which serve only to isolate them and retard their educational and personal development.

The act establishes a payment formula to aid states in providing the services required. This is the largest single federal fiscal commitment to handicapped children.

Federal grants to states for vocational rehabilitation services are authorized by the Vocational Rehabilitation Act of 1973 and its 1974 amendments. Section 504 of the act is the civil rights statute that prohibits discrimination on the basis of handicap and requires that education and human services facilities be accessible to handicapped persons.

The Vocational Education Act of 1963, amended in 1968 and again in 1976, authorizes federal grants to expand and strengthen vocational programs for handicapped students. The 1976 amendments require that 10 percent of federal funds allocated to states for vocational education be spent for handicapped students enrolled.

The funds available through these and other federal, state, and local laws can be used for a variety of activities to facilitate compliance with the laws' requirements. Such activities include curriculum and facilities modification, recruitment and promotional efforts, and educational/supportive services to supplement regular programs. These funds can also be used to compensate regular education personnel for the extra time required to effect necessary changes.

The effectiveness of the mainstreaming effort in vocational education depends to a great extent on vocational educators. They need to understand the nature of the handicapping conditions represented among their students and the vocational implications of these conditions. The following descriptions of various handicapping conditions are provided as a resource for increasing that understanding.

Overview of Handicapping Conditions

Deafness/hearing impairment. The degree to which a student's hearing is impaired will determine the extent of modifications required for accommodation in the regular classroom. A student with only a partial hearing loss can often be accommodated by being assigned a seat near the front of the classroom. Hearing aids usually allow these students to participate without great difficulty in classroom activities.

The deaf student, however, requires additional support. There are several possible ways of communicating with deaf students, and the choice of the appropriate method will depend on the individual student's needs and experience. The instructor should not feel inhibited about seeking professional advice or discussing with the student how best to ensure effective communication. Some deaf students may be able to speechread (read lips), but vocational personnel must keep in mind that no one can be expected to speechread all of every conversation. Many deaf persons communicate using American sign language—a series of hand and arm positions and movements that represent words and concepts—and fingerspelling, in which hand/finger positions and movement represent letters of the alphabet and numbers. The manual alphabet is easily learned, and many hearing persons use it to communicate with deaf friends and relatives.

Note takers and/or interpreters can also prove very helpful not only for the deaf student but also for the instructor. The interpreter uses sign language to translate for the deaf student. The note taker develops notes from classroom lectures and discussions. Usually, a note taker should sit next to the deaf student so that the student can glance at the notes periodically in order to facilitate participation in class. The instructor must remember that whatever method is used, the deaf student will almost always be a few words or sentences behind. Frequent pauses allow the deaf person to catch up. Particularly when student questions or responses are sought, these pauses will serve to minimize the isolation that can result from any sensory impairment.

Depending upon the cause of the hearing impairment, the student's sense of balance may be adversely affected. In these cases, vocational personnel should help the student focus on occupations that do not require the maintenance of balance in precarious positions. If the student will be working with machinery that utilizes signals or warning devices, these will need to be modified to visual signals and warnings to accommodate the hearing-impaired student.

The speech of the deaf/hearing-impaired student may be "different" sounding—flat, nasal, slurred, mispronounced—due to his or her inability to hear himself or herself speak. It is important to remember, and to ensure that nonhandicapped students understand, that such speech problems do not indicate any intellectual deficiency.

Blindness/visual impairment. Students with visual impairments will obviously require certain modifications in the vocational program or environment to allow them to participate safely and effectively. As in the case of the hearing-impaired student, the extent of the impairment will determine the type and extent of modification required. Students with some residual vision may be accommodated through the use of magnifying devices and large-print materials. For blind students, tape recorders, braille materials, and sighted readers can be utilized.

The blind student will need to be oriented to the classroom area and to the school in general. A tactile map of the area may prove useful in this regard. Many blind persons use a cane or a guide dog to assist them in getting around, and an initial orientation to their surroundings will generally suffice. In some cases, it may be desirable to assign a sighted student to serve as a "buddy" to the visually impaired student. This person can also serve as a note taker/reader for the blind student. As mentioned previously, the law provides financial assistance to pay for the services of readers.

Equipment that utilizes visual signals or warning devices must be modified if it is to be used by visually impaired students. These signals often may be altered to auditory or tactile devices. In assisting the student with career decision making, vocational personnel should help the student to make realistic choices based on the requirements of particular occupations. Blind adults are employed in most major fields, but there are certain areas in which modification to accommodate a visual impairment may not be feasible (e.g., driving an automobile or piloting an airplane).

Mental retardation. The mentally retarded student who can be mainstreamed usually falls into the category of "mildly" retarded. There are two major theories about how such students learn. According to the "developmental" theory, the mildly retarded student's learning process is essentially the same as that of a normal student, but it proceeds at a slower rate. The "difference" theory, on the other hand, holds that the learning process of mildly retarded students is essentially different, not just quantitatively but qualitatively as well. There is no definitive study proving or disproving either theory (*The Educable Mentally Retarded Student in the Secondary School* 1975, p. 15).

Learning characteristics of the mildly retarded student *may* include one or more of the following:

- Short attention span
- Slow reaction time
- Tendency to forget quickly
- Limited ability to grasp abstractions
- Limited ability to generalize
- Difficulty in recognizing familiar elements in new situations
- Slowness in forming associations between words and ideas
- Local point of view
- Difficulty in analyzing and solving problems
- Difficulty in thinking critically and making decisions
- Limited ability to evaluate materials for relevancy

These characteristics also *can occur* in other disabilities and with "normal" students.

In order to compensate for these shortcomings and to accommodate the mentally retarded student in regular classes, the vocational instructor should

- be as concrete and precise as possible in giving instruction and guidance to the student,
- concentrate on positive reinforcement,
- provide short learning periods and supervised study sessions, and
- provide flexible time allotments for individual students to complete learning tasks.

It is very important that instructors be aware of the learning characteristics mentioned and with methods for accommodating these students in the regular classroom. Constant repetition and reinforcement are essential.

Learning disabilities. There is no single formula for accommodating the learning disabled student in the regular vocational classroom, due in large part to the fact that there is no "typical" student with whom to work. The term *learning disability* means many things to many people, and finding an acceptable definition has proven to be a major problem even for specialists in the field. Since learning disabilities have now been recognized as a handicapping condition, and government funds have been allocated for the education of learning disabled students, the federal definition provides a framework within which to examine the problem. That definition is as follows:

> Specific learning disability means a disorder in one or more of the basic psychological processes involved in understanding or in using language, spoken or written, which may manifest itself in an imperfect ability to listen, think, speak, read, write, spell, or to do mathematical calculations. The term includes such conditions as perceptual handicaps, brain injury, minimal brain dysfunction, dyslexia, and developmental aphasia. The term does not include children who have learning problems which are primarily the result of visual, hearing or motor handicaps, of mental retardation, of emotional disturbance, or of environmental, cultural or economic disadvantage. (Donald H. Johnson and Leah J. Johnson 1978, p. 5)

In practice, learning disabilities usually manifest themselves in a severe discrepancy between achievement and intellectual ability in such areas as oral and/or written expression, listening comprehension, basic reading skills and/or reading comprehension, and mathematical calculation and/or reasoning when the student is provided with learning experiences appropriate to the individual age and ability level.

Given the broad nature of this definition, it is nearly impossible to identify characteristics common to learning disabled students in general. Although the most common characteristic of the learning disabled population is underachievement, not all students who fail to achieve according to their ability can be said to be learning disabled. Most learning disabled students are described as having disorders of attention, usually short attention span and poor concentration. About half of all learning disabled students exhibit hyperactive behavior (ibid., p. 7).

In dealing with the reading problems of learning disabled students, one-to-one reading activities have proven to be most successful. Such activities include the parent and student reading together, the teacher and student reading in unison, or an individual tutor working with the student on specific skills. Obviously, the instructor will not always have the time to spend on one-to-one activities with particular students. Using teacher aides or other students to work with the learning

disabled student can overcome this problem. Spelling and writing problems seem to be dealt with effectively when treated simultaneously with reading problems. By approaching the language problems of the learning disabled student from all angles, the instructor can utilize effectively the elements of visual, auditory, and tactile perception to enhance the student's language comprehension.

Dealing with the learning disabled student's arithmetic difficulties in the vocational program is quite troublesome, and research in this area is very sparse. Simple drill is effective but is not a solution in itself. Other suggestions include providing explicit instructions and learning "tricks," having the student orally summarize instructions and concepts, and using practical application of concepts and processes. Students with learning disabilities should be encouraged to use calculators and technical aids whenever possible.

It is clear, then, that students with learning disabilities are more different from one another than they are alike. Suggestions for accommodating them in the regular vocational classroom, such as those provided here, must be very general in nature, and much of what vocational personnel find to be effective with learning disabled students will be the result of individualization on a case-by-case basis. Generally, structure is important for learning disabled students, as is consistency.

Orthopedic Impairment. Orthopedically impaired students are those with physical impairments severe enough to limit their educational performance. Such impairments may be congenital in origin or may be the result of accident, disease, such as polio, or other conditions, such as cerebral palsy or amputation. The accommodation problems associated with orthopedically impaired students usually relate to access and mobility. Accommodating these conditions is usually a matter of mechanics and common sense, and may be as simple as making aisles wide enough to allow passage of a wheelchair or lowering a workbench to accommodate a wheelchair-bound student. Such accommodation may not always be possible. Can a wheelchair-bound student operate a drill press or use welding equipment? The instructor must consider such questions as these in determining how accommodations are to be made.

Two of the most commonly encountered causes of orthopedic impairment are cerebral palsy and multiple sclerosis. *Cerebral palsy* is not a disease. It is a group of medical conditions caused by damage to the part of the brain that controls and coordinates muscular function and it is characterized by nerve and muscle dysfunction. There are five basic classifications of cerebral palsy, each with similar but distinct symptoms:

- **Spasticity**—Stiff and difficult movement due to loss of voluntary muscle control (50 percent to 60 percent of persons with cerebral palsy experience spasticity)
- **Athetosis**—Involuntary, uncontrollable movements; slow, jerky, irregular writhing and twisting of limbs (12 to 18 percent of cerebral palsy individuals experience this)
- **Ataxia**—Inability or awkwardness in maintaining balance or coordination (this affects 1 to 10 percent of cerebral palsy persons)
- **Rigidity**—Resistance to almost all movement
- **Tremors**—Rapid repetitive movements of the body

More than half of all persons with cerebral palsy are mentally retarded; fewer than one-third of them have seizures; about one-half have visual impairments; and many have hearing, speaking,

and learning problems. The physical manifestations of the condition can sometimes be corrected or minimized through orthopedic surgery, braces, and/or medication.

Multiple sclerosis. Multiple sclerosis is a neurological disease whose cause is not yet discovered. The myelin sheath is the insulation around nerve fibers in the brain and spinal cord that carry messages to all parts of the body. Multiple sclerosis attacks and destroys myelin, replacing it with hardened tissue. This process is called sclerosis. It occurs at various places in the nervous system (thus the term *multiple* sclerosis), causing minor interruptions of nerve impulses. The symptoms may be mild or severe, they may come and go, and they occur in scattered parts of the body. Symptoms may include partial or complete paralysis, numbness or tingling, blurred vision, slurred speech, loss of coordination, and fatigue.

Vocational personnel should be familiar with the common conditions associated with cerebral palsy and multiple sclerosis, which include slurred speech, loss of coordination, spasticity, and involuntary movement. Individuals with cerebral palsy or multiple sclerosis also often become fatigued more quickly than nonhandicapped individuals. Accommodation of these problems will require understanding and monitoring on the part of vocational personnel and sensitizing of nonhandicapped peers. It is important to remember that cerebral palsy and multiple sclerosis are not communicable diseases and that their associated conditions are not generally indicative of intellectual deficiency.

Other health impairments. By federal definition, students considered to be "other health impaired" are those who experience limited strength, vitality, or alertness because of chronic or acute health problems, such as heart condition, tuberculosis, rheumatic fever, asthma, sickle cell anemia, hemophilia, epilepsy, leukemia, or diabetes (*Vocational Education for Handicapped, Limited English Proficiency, and Disadvantaged Persons* 1981, p. 9). Of these, one of the most commonly encountered—and one which often carries social stigma—is epilepsy.

Epilepsy is not a disease, but a rather a condition of disorder of the brain. It is not a form of mental illness. There is no single cause for the disorder. Epilepsy can take many forms. Grand mal seizures (convulsions) are usually accompanied by loss of consciousness of short duration. Such seizures are rare today because of modern drugs used to control convulsions. Petit mal seizures are momentary lapses of attention. Psychomotor seizures are of very short duration and are marked by blinking of the eyelids or random, purposeless movement.

After a seizure, a short rest period usually restores the person with epilepsy to normal functioning. Seizures are generally infrequent, and between seizures most people with epilepsy are normal and healthy. In many cases, the epileptic person feels a warning "aura" prior to the onset of a seizure and can solicit assistance and/or go to a secluded place to rest until the seizure has passed.

Vocational personnel and other students need to know what to do in case of a seizure at school, For petit mal and psychomotor seizures, nothing need to be done other than to explain what is happening to others who witness it. In the unlikely event of a grand mal seizure, remain calm, clear the area around the epileptic student, do not try to restrain the individual's movement, do not force anything between the teeth, do turn the head to one side and place something under it. After the seizure, allow the student to rest. It is best to call in the school nurse. It is not necessary to call a doctor unless the attack is followed by another major seizure or if the seizure lasts more than 10 minutes.

Regular vocational education personnel may teach students with a variety of handicapping conditions in addition to teaching nonhandicapped students in their classrooms and programs. Regular educators must find ways of accommodating the effects of students' handicapping conditions encountered within the classroom without sacrificing the quality and quantity of learning that must occur for all students. A combination of general policies and procedures for modifying the traditional curriculum along with individualization of instruction to the greatest extent possible is the key to achieving this goal.

Adaptations/Adjustments in the Regular Vocational Program

Developing Positive Self-Concepts

In many cases handicapped students, because of the isolation that results from the effects of their disabilities, have difficulty developing positive self-concepts. Efforts to correct this problem can prove beneficial not only for the handicapped students but also for nonhandicapped students and for vocational personnel themselves. The following suggested techniques (Peterson 1979) can be implemented with handicapped students by classroom instructors, guidance counselors, placement specialists, and/or other appropriate staff members to provide experiences to improve self-concepts.

- **Bibliotherapy**—Fictional and nonfictional accounts of handicapped individuals who have learned to cope with their handicap. These could include magazine articles, newspaper clippings, and radio/television broadcasts about successes of individuals.

- **Role models**—Handicapped adults (particularly young adults) in the community who are successful in education, employment, homemaking, and civic activities.

- **Role playing**—Replay of a familiar situation and use of reflection and/or analysis of the experiment to help students learn a new response. This can provide practice for a future situation, such as job interviewing.

- **Group guidance**—Content-oriented group activities that focus on such areas as job seeking, career information, and orientation to the school building.

- **Group counseling**—Counseling undertaken with no content agenda and no planned sequence of topics. Participants share their concerns in an atmosphere in which the counselor serves as facilitator rather than authority figure. Participants develop guidelines for confidentiality and establish commitment to helping one another.

- **Extracurricular activities**—Music, school newspaper, student council, yearbook, athletics, and student vocational organizations such as FFA, FHA, DECA, VICA, and so on.

These activities provide students with an opportunity to develop a sense of their identity as contributing members of the class and to experience success in areas of personal interest. Use of these techniques should reduce the isolation of handicapped students and discourage feelings of "differentness" and infericrity among them.

Fostering Student Success

While specific techniques from a specialist may be required to deal with specific handicapping conditions, some general instructional guidelines will prove effective with all students.

- A step-by-step approach to learning should be used, with one concept or task being mastered before the next is introduced. This reduces confusion and frustration of students and enhances the vocational educator's ability to monitor student progress.

- Written material should be simple and clear, and material should be presented in more than one form. Simultaneous presentation of material in different forms—for example, tapes, transparencies, filmstrips, handouts, and lectures/discussions—can provide reinforcement of the concepts presented and should ensure that students can benefit from the presentation regardless of learning problems.

- Verbal instruction should be simple and specific, with opportunities afforded for students to ask questions or seek clarification.

- Information should be presented in small amounts, with lessons and tasks broken down into logical, sequential steps.

- Instruction should focus on concrete ideas rather than abstract concepts. In explaining abstractions, the vocational educator will find it helpful to relate the concept being presented to the students' own experiences. Use of concrete examples, models, and demonstrations will facilitate learning of the concept. Repetition and rewording will provide additional reinforcement, and practical application of concepts will facilitate understanding.

- Vocational personnel should examine their own attitudes and behavior toward students to ensure that their behaviors are conducive to successful learning experiences.

- Students should be expected to work just beyond their current level of achievement, and all achievements should be praised.

Minimizing Failure

A corollary to fostering success is minimizing failure. In order to reduce the likelihood of student failure, various techniques can be employed.

- Additional time may be required for mastery or completion of material and assignments, as well as adaptations of materials for varying reading levels.

- Students with specific learning problems should not be forced into situations before peers where failure is inevitable, such as spelling or reading aloud or writing on the board.

- Allowing students to work in small groups or with partners and giving them choices among a variety of approaches in performing tasks/assignments should increase the probability of their success.

- Distracting, external stimuli should be reduced to the extent possible.

- In evaluating the abilities of students, vocational educators need to take care to ensure that what is evaluated is the students' knowledge and understanding of the material rather than their ability to read, write, or spell. Reading, writing, and spelling can be influenced adversely by some disabilities. It is important also that the performance of disabled students be measured against their own potential and capabilities rather than against that of

their classmates. In most cases, assuming that the students are sincerely making a genuine effort and that the work is fitted to the students' capabilities, they should be able to succeed.

Adapting Testing Techniques

In some cases modification of testing methods may be required to foster student success. The following are possible types of adaptations that may be needed.

- For sighted and hearing students with reading problems, test instructions and the test itself can be given orally. Oral test administration should be clear, simple, and slowly stated. Test questions can be read aloud before the exam begins, allowing students to jot down brief answers so that a second reading will be less difficult. The instructor may also wish to make use of oral exams, with the answers given directly to the instructor, tape recorded, or dictated to another student.

- If the problem is one of attention span, a series of short quizzes may be more effective than a long exam.

- If the student has a writing problem, multiple choice or true-false formats may be preferable to essay questions.

Individualizing Instruction

In addition to the general guidelines for adaptation just discussed, vocational educators will find that individualization of instruction is most effective in accommodating the unique needs of handicapped students. Public Law 94-142 requires that every handicapped student have an individualized education program (IEP) developed.

This program is developed jointly by appropriate educators, rehabilitation personnel, parents, and the student. It describes the student in terms of capabilities and functioning levels, establishes short-term and long-term educational goals, and identifies the steps necessary for goal achievement and the appropriate persons to be involved in each step. Vocational personnel can use the IEP and expand on it to individualize the handicapped student's vocational program to the extent necessary to promote successful completion of the program.

Individualization of instruction does not require the vocational educator to invent a new program of study for each student. The materials to be covered and the skills to be developed remain constant, but instructional strategies are modified to meet the unique needs of individual students. In order to accomplish such modification successfully, vocational educators need to assess the functional capabilities, interests, and learning styles of the student in question. The IEP is a useful tool in this process, since it contains the results of any such assessments already made during the student's educational career. By using this information and conducting further assessment in specific vocational and related areas, the vocational educator can, in conjunction with the student, establish goals—desired outcomes of the student's participation in the vocational program—toward which instruction should be directed.

Once these goals have been established, the knowledge and skills that the student must acquire in order to achieve the goals can be identified. Individualization is then a matter of choosing instructional techniques that will best facilitate the student's acquisition of such knowledge and skills based on the assessment of the student's current functioning level and capabilities.

A wealth of research material exists in the areas of curriculum modification and individualization. The bibliography lists several excellent resources that should prove useful to vocational educators in successfully performing these tasks. The appendix lists sources for curriculum materials and special aids.

FROM EDUCATION TO EMPLOYMENT— FACILITATING SUCCESSFUL TRANSITION

The purpose of vocational education is to provide students with knowledge and skills that will enable them to become gainfully employed. To accomplish this purpose, vocational students need to be provided with training not only in the technical aspects of their chosen area but also in general entry-level skills in order for them to compete successfully in the labor market. Handicapped students have these same needs as well as special needs imposed by their conditions.

Making the transition from school to work is an adjustment process during which students need to have access to ongoing support of various types. This support should begin before the student completes the vocational program and should continue into the initial period of employment. Vocational educators play an important role in providing this support to handicapped students.

Orientation to the world of work is an important part of any vocational curriculum. Students need to become skilled in writing a resume, identifying potential employers, applying for jobs, interviewing, and anticipating employer expectations. For handicapped students these skills must be taught with an eye to the unique needs of the particular student.

What transportation needs does the student or employee experience in getting to and from interviews or to and from a job? How can he or she deal effectively with employer biases encountered during job interviews? If work site accommodations are required, the student should be prepared to help the employer find reasonable ways of accomplishing such modifications.

These are areas in which vocational educators can be very helpful to handicapped students in preparing for employment. Classroom practice in writing resumes and filling out applications, as well as role playing of interview situations, give students an opportunity to explore various methods and discover where their strengths and weaknesses lie. They can use practice sessions to develop confidence in their ability to carry out job search activities and to become familiar with the mechanics of locating and obtaining the right job.

Vocational educators face the task of accommodating handicapped students in their classrooms and programs. It is not an easy task, but it can be a rewarding one if viewed as a challenging opportunity to improve the vocational education program. Vocational personnel are not alone in accomplishing the task. Parents, counselors, therapists, special education personnel, and handicapped students themselves are excellent resources upon which educators can and should draw for assistance and guidance. The potential rewards—economic, social, personal, and professional—of helping handicapped students become productive members of society far outweigh the cost involved in terms of time, effort, and finances. There are no acceptable alternatives.

APPENDIX

SOURCES OF CURRICULUM MATERIALS AND SPECIAL AIDS

1. Assistive Aide and Devices for the Handicapped
   Ohio Resource Center
   470 East Glenmont Avenue
   Columbus, OH 43214

2. Educational Design, Inc.
   47 W. 13th Street
   New York, NY 10011

3. Electronic Aids for the Severely Handicapped
   Prentke Romich Co.
   R.D. 2, Box 191
   Shreve, OH 44676

4. Human Resources Libraries
   EDN Corp.
   Jenkintown, PA 19046

5. Janus Book Publishers
   2501 Industrial Parkway West
   Dept. B
   Hayward, CA 94545

6. Learning Tree Filmstrips
   7108 S. Alton Way
   P.O. Box 3009, Dept 85
   Englewood, CO 80155

7. Mafex Associates, Inc.
   90 Cherry Street
   Box 519
   Johnstown, PA 15907

8. Pre-Vocational Training Center
   EBSCO Curriculum Materials
   Div. EBSCO Industries, Inc.
   Box 11521
   Birmingham, AL 35202

9. Programs for Basic Living Skills
   Interpretive Education
   2306 Winters Dr.
   Kalamazoo, MI 49002

10. Technology Expanding Opportunities for People with Disabilities
    Telesensory Systems, Inc.
    3408 Hillview Avenue
    P.O. Box 10099
    Palo Alto, CA 94304

11. Vocational Kit
    CANHC Literature Center
    645 Odin Dr.
    Pleasant Hill, CA 94523

12. Vocational Program Modules
    Ingham Intermediate School District
    Capital Area Career Center
    611 Hagadorn Road
    Mason, MI 48854

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