A Team Approach to Prevocational Services

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This paper presents a chronology of legislative mandates for vocational rehabilitation, discusses their impact on occupational therapy, and describes relationships between special educators and vocational agencies. The Career Training Workshop, a prevocational program developed and used successfully by a North Carolina school district, is described here as an example of one effort to prepare students with disabilities for employment.

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Since the passage of Public Law 94–142, The Education for All Handicapped Children Act of 1975, many occupational therapists have been employed in public schools. The November 1988 issue of the American Journal of Occupational Therapy discussed occupational therapy as a related service in the schools, the need for training, and employment of occupational therapists (Viseltear & Royeen, 1988). This paper reviews background information for vocational readiness in the schools and describes one operational model for a cooperative program to prepare students with disabilities for employment.

Legislative Mandate of Vocational Rehabilitation Programs

In 1920, the first Vocational Rehabilitation Act (Public Law 66–236) was enacted by Congress. It made rehabilitation services available to the general public, including persons with physical disabilities. This act, also called the Smith-Fess Act, or the Civilian Rehabilitation Act, is based on five precepts (Hutchison, 1973):

1. Work is one of the basic ingredients of the American Culture.
2. America needs the productive efforts of all its citizens.
3. Disability results in dependency, rehabilitation reduces dependency.
4. Rehabilitation makes disabled people more effective and more efficient consumers.
5. Specialized agencies and programs are required to prevent neglect of disabled persons in programs designed to serve all people. (p. 44)

The Vocational Rehabilitation Act of 1943 (Public Law 78–113) defined vocational rehabilitation and stated that physical restorative services were necessary to assist disabled persons to return to work. It expanded the scope of rehabilitation services to be delivered to disabled persons (Lassiter, 1972). In 1954, mental disabilities were included as a disabling condition and services were developed for persons with such disabilities (Hutchison, 1973).

In 1954 and 1965, Congress passed two amendments, the Vocational Rehabilitation Amendments of 1954 (Public Law 83–565) and the Vocational Rehabilitation Amendments of 1965 (Public Law 89–333), that gradually expanded the role of the federal government in providing rehabilitation services. These services were extended to include persons with mental retardation and others considered disadvantaged because of disabilities (Hutchison, 1973; Lassiter, 1972). Prevocational evaluation and training programs were included in the services provided by rehabilitation units of hospitals and other facilities. Occupational therapists had major responsibilities for providing these services during this period ("Vocational Reha-
Background

Early in 1980, a large school district in North Carolina was assigned the task of developing a comprehensive curriculum for its trainable mentally retarded (TMR) students to prepare them for the transition from school to work. A curriculum committee of teachers, vocational specialists, and occupational, physical, and speech therapists was established. The committee examined those life skills and objectives necessary for the students to become workers as well as those de-

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velopmental, educational, and vocational skills that would lead to the achievement of specified goals. The goal of the curriculum committee was to provide TMR students with a program of purposeful vocational activities that would enhance their potential for learning and their ability to adapt to the environment as well as to foster the development of the highest possible level of functional performance. Targeted areas of intervention were to include the following:

A. Independent living/daily living skills
B. Work/vocational skills
   1. Homemaking
   2. Employment preparation
      a) Job acquisition skills and performance
      b) Organizational and team participatory skills
      c) Work process skills and performance
      d) Work product quality
C. Gross and fine motor coordination
   1. Muscle control
   2. Coordination
   3. Dexterity
D. Cognitive components
   1. Orientation
   2. Conceptualization/comprehension
      a) Concentration
      b) Attention span
      c) Memory

The curriculum was also designed to include: (a) a needs assessment, (b) a performance assessment, (c) a vocational training program, (d) a collaborative training program with referring agencies, and (e) an assessment of the intervention.

Program Development

The vocational training program developed was called the Career Training Workshop. It was located at a school in Charlotte, North Carolina, and was designed to be the TMR student's first exposure to the vocational arena in a simulated job setting outside of the classroom but in the school building.

One task in developing the program was to identify those sites in the community in which previous graduates of the school had been placed and in which forthcoming graduates might be placed. A second task was to identify the job skills required to work in these jobs. We conducted a survey to gather this information. The results indicated that 55% of recent graduates were enrolled at a local sheltered workshop, 20% were in programs at Goodwill Industries, 10% were in activity programs, 10% were at home, 5% were employed in the community, and 0% were institutionalized. Because one goal was to have workshop graduates in a setting in which they functioned to their highest capacity, we conducted interviews with managers at each of the available employment settings to establish communication and to assess the managers' perceptions of skills necessary for optimal success. A report on the economic outlook for employment prepared by the Charlotte city government assisted in defining potential employment trends. The results also provided information for job analysis that led to development of the Career Training Workshop.

Eligibility and Individual Objectives

Any TMR student aged 11 to 14 years was admitted to the Career Training Workshop as long as he or she met the following prerequisites: (a) was able to attend a task for approximately 1/2 hour and required no more than three prompts to return to work, (b) primarily needed career exploration and development, and (c) could attend to a task in a group meeting.

Vocational objectives and related developmental sequences that would enable the student to attain his or her goals were developed quarterly for each student. Many of these objectives were selected from those developed for the general vocational skills curriculum at the school. The difference between the Career Training Workshop and classroom goals was in the modality or approach used. The objectives included the following:

A. Social Interaction With Peers
   The student will interact appropriately with peers in a work setting for 30, 45, and then 60 minutes without direct supervision.

B. Social Interaction With Supervisor
   1. The student will interact appropriately with supervisors in a work setting by following directions given by three, two, or one supervisor(s).
   2. The student will interact appropriately with supervisors in a work setting by requesting assistance to deal with job-related problems.
   3. The student will demonstrate versatility by performing new tasks cooperatively, performing familiar tasks in a new setting, and accepting changes in routine when given explanation.

C. Rules and Regulations
   1. Punctuality: The student will arrive at the work setting at the designated time for 15 consecutive workdays.
   2. Personal needs: The student will take care of personal needs prior to the starting time.
   3. Preparation: The student will collect materials prior to beginning a task.
   4. Position: Given a work situation, the stu-
dent will engage in the appropriate task and maintain a position necessary for task completion 95% of the time.

5. Maintenance of work area: The student will maintain an orderly work area by consistently maintaining job parts in designated positions while working on a task, putting materials in designated areas in the work setting at the completion of the task, and cleaning up the work area within 5 minutes at the end of each workday in the work setting.

Activity Levels

A complex task in the program development was the designing of activities to meet the prevocational objectives. For clarity, levels of activity from 1 to 6 were designated. Activities in Level 1 were those that demanded the least cognitive ability, provided the most immediate gratification, and required the least fine and gross motor skills. Level 6 activities demanded the highest skills. All activities were designed to improve standing tolerance, foster the development of positive work habits, and develop consistency in performance.

An example of a Level 1 activity was a task in which the student was seated in a chair at a workstation partitioned on three sides. The student removed a wing nut from a bolt placed through a piece of pegboard. The three items were then sorted. An example of a Level 3 activity was the construction of a macramé keychain in a specified pattern involving a variety of knots. An example of a Level 6 activity was the use of an electric drill, handsaw, tri-square, ruler, hammer, and nails in constructing lamp fixture bases. Approximately 40 such activities were defined for the program. New activities were added and old activities were discontinued as student needs dictated.

Before an activity was introduced to the program, it was performed by at least 10 normal functioning persons to determine normal production rate. This allowed scrutiny of the activity and its components and helped to define realistic job and performance expectations for TMR students. After the activity had been performed by numerous TMR students of varying abilities, it was possible to identify performance trends for the TMR population instead of having to compare this performance with the normal population.

All the activities were presented to the students in a consistent manner by the workshop supervisors. Each activity was written with prerequisites, equipment necessary, a brief description of the activity (to assist in consistent teaching of the activity), and the primary and secondary benefits of the activity.

Phases of Training

A student entering the Career Training Workshop went through two phases. Phase 1, a period of orientation lasting 1 to 3 days, allowed for a relatively fast determination of the appropriateness of placing the student at a particular activity level.

Phase 2 contained three components. The first was a 10-day training period during which students developed their skills. During this time the steps of each activity were completed under close supervision until that activity was mastered. A record of the student's production was graphed on a chart at the workstation. Error rate was not recorded because performance was supervised closely and few or no errors were expected.

Behavior modification was the method used to train students in Phase 2. Verbal praise for work completed was the primary means of reinforcement. Occasionally, contests and other motivating activities were used. Students received verbal reminders to attend to work, and such occasions were documented daily. When undesirable behaviors persisted after repeated prompts, students were informed that the next offense would bring firing, or time-out, a realistic but humiliating experience. The event was then documented and the classroom teacher was notified.

The second component of Phase 2 was a 5-day period in which reinforcement was gradually decreased. Ten days later the student's production on the task was measured again. (This was the third component of Phase 2.) During that testing situation, no assistance, prompt, or verbal encouragement was given. A student passed the test if the individual production goal was met 70% of the time and error rate was less than 5%. A student who passed could proceed to a higher activity level.

This training cycle (10 days + 5 days + 10 days) was then repeated with students being placed at a higher activity level, a lower activity level, or kept at the same level. When students completed the highest activity level of the Career Training Workshop, they entered the school's vocational program.

Assessments

Students in the Career Training Workshop were assessed on several measures. Production and error information from a training cycle was recorded on a graph. Since there were approximately 20 students in the workshop at one time, logging a student's data on the graph as production over error (e.g., 12/5) sufficed until there was time at the end of the day to chart actual points on the graph. Comparing the student's line slope for production over error during the training phase with that of the testing phase was helpful in
determining his or her suitable job placement, learning style, and retention of job skills.

Also, each student was assessed daily on the Positive Work Attitudes Checklist, an instrument developed specifically for the workshop program. This information included the following:

1. Dependability— is punctual, attends workshop regularly.
2. Independence— is able to carry out the need for redirection, assistance, or excessive praise.
3. Initiative— is able to, when out of materials, (a) get more materials, (b) seek assistance from supervisor, (c) switch to another appropriate task, (d) seek supervisory help in appropriate situations, (e) begin work after check-in.
4. Relating to work— completes work, but does not deviate from the specific steps involved.
5. Disposition— is willing to follow through with task assignment, the work environment, or additional work-related requests.
6. Appearance— demonstrates hygiene and grooming skills that do not adversely affect other students or the materials involved.
7. Maintenance of the work area— cleans own workstation tools or equipment and puts away equipment.
8. Relating to supervisor— controls anger or temper, does not make obscene gestures, does not fondle or hug supervisor, uses friendly conversation.
9. Relating to co-workers— controls anger or temper, does not make obscene gestures, does not interfere with others' work, does not fondle or hug co-workers, uses friendly conversation.
10. Versatility— is able to perform more than one familiar task without reorientation, adapts to different situations without frustration or anger, does not perseverate.
11. Work safety— properly handles equipment; keeps harmful objects out of eyes, mouth, etc.; wears safety equipment; observes smoking rules; wears appropriate clothing for job; walks— does not run; reports all emergencies.
12. Use of property— appropriately uses school property; asks to use restricted property, materials, or machinery; does not litter; does not steal; does not deliberately destroy property.

Because of the number of students seen at one time, a chart containing all students names and the 12 areas of assessment was designed so that quick, factual entries could be made.

In addition to the information gathered from the training activities and the Positive Work Attitudes Checklist, the Hester Evaluation Systems (Hester, 1983) was used to supply information about a variety of skills and to facilitate the decisions regarding a student's current job skills, job feasibility, and job potential. The Hester is a battery of 27 vocational tests in seven areas: motor, unilateral; motor, bilateral; perceptual; perceptual-motor coordination; intelligence; achievement; and strength.

Initial test results were of limited value because the Hester was standardized on the normal population. However, over the course of 4 years of the Career Training Workshop, hundreds of TMR students aged 11 to 21 years were tested. These data enabled us to establish performance norms for TMR students and to use these to more accurately and realistically interpret results.

A copy of the student's total assessment became part of each student's vocational profile, thus tying the Career Training Workshop program to the traditional, more comprehensive vocational program offered by the school for students 15 to 21 years of age.

Vocational Placement

At the end of the school year, we used data from six training cycles, the Positive Work Habits Checklist, the Hester Evaluation Systems, and the Vocational Skills Checklist, a checklist developed by the school district, to make vocational placement decisions. The Career Training Workshop is developing ways to follow up on students placed in a work setting to give support to the employer as well as to the student.

Implications and Summary

Both occupational therapists and special educators must collaborate to improve vocational educational services for students with special needs. Value systems that promote client independence and view work as a life goal must be engendered. Such processes can begin in colleges and universities, where students can integrate theory and practice bases for cooperative program development in prevocational areas. The AOTA publication Planning and Implementing Vocational Readiness in Occupational Therapy (Pivot) (Kirkland & Robertson, 1985) gives an example of training provided to occupational therapists on developing vocational readiness programs. To date, this program has been used in 12 regional workshops with 600 therapists. Additionally, various workshops have been held in local, state, and international settings. Occupational therapists who have had this training are better prepared to collaborate with the team of education personnel to provide career.
education and training for students with disabilities in the least restrictive environment.

A logical extension of successful prevocational programs is supported employment (Bellamy, Rhodes, Mank, & Albin, 1988). Supported employment programs can replace conventional day treatment programs with work opportunities designed for persons with severe disabilities. Supported employment is an opportunity for local communities to develop services that meet the needs of persons with disabilities and their families. These programs are supported by federal funding.

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