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ABSTRACT

An overview is provided of the career/vocational assessment process as applied to individuals with mental disabilities. Types of information that need to be gathered can be grouped into seven basic categories: medical; functional academic skills; interests and environmental preferences; interpersonal skills; work habits and attitudes; learning style; dexterity, endurance, and general vocational skills; and specific vocational skills required for a specific type of occupation. Basic techniques used in career/vocational assessment consist of: reviews of previous records; interviews with parents, the student, former teachers, and employers; paper-and-pencil tests; manual dexterity tests; commercial assessment systems; self-developed work samples; and situational assessment instruments. Described are a number of literature-based models for combining the techniques discussed into an assessment process that can be implemented in the schools. Best practices are recommended in the following areas: definition, purpose, and goals of the career/vocational assessment process; the process and methods utilized; and personnel to be involved. Appendices contain a checklist titled "Types of Information to be Gathered During the Vocational/Career Assessment Process" and descriptions and samples of paper/pencil tests, manual dexterity tests, and commercial systems. (JDD)

Chapter Five

Career/Vocational Assessment

Patricia L. Sitlington

OVERVIEW

The concept of career education has been defined by the Council for Exceptional Children (1978) as follows:

> the totality of experiences through which one learns to live a meaningful, satisfying work life. Career education provides the opportunity for children to learn, in the least restrictive environment possible, the academic daily living, personal-social, and occupational knowledges, and specific vocational skills necessary for attaining their highest levels of economic, personal, and social fulfillment. The individual can obtain this fulfillment through work (both paid and unpaid) and in a variety of other social roles and personal lifestyles including ... pursuits as a student, citizen, volunteer family member, and participant in meaningful leisure time activities. (p. 1)

Career education is more than just preparation for work. It encompasses preparation for all aspects of community living, including home, school, occupation, and community, and prepares the individual for roles not only as a worker, but also a consumer, citizen, and family member (Brolin, 1982; Clark, 1979). Most authors would advocate that career education be infused into the ongoing program of each individual rather than operated solely as a separate program and that it begin in the elementary years and continue through adulthood.

Some of the roles of assessment in the career education process are similar to the roles of assessment in any instructional process. First, career assessment should provide the information needed to (a) determine the most optimum program placement for the student, (b) identify the support needed for the student to benefit from this program, (c) monitor the student's progress throughout the program, and (d) determine the best placement at the end of the program. In the elementary grades, such placements might involve combinations of special education programs and ongoing regular education programs. At the secondary level, placements might also include regular vocational education programs.

A second major role of career assessment is to provide a basis for helping the individual with mental disabilities determine the most effective match between the world of work and his or her interests, abilities, and work environment preferences. This role is most often referred to as vocational assessment or vocational evaluation and involves using the work environment and work-related activities as much as possible in gathering the needed information on the student.

The term "career assessment" is usually used to define a developmental process beginning at the elementary level and continuing through adulthood. Career assessment is a broad term that includes terms such as "vocational assessment" and "vocational evaluation," much as career education encompasses vocational education. Just as with assessment in all other areas of special education, career assessment is crucial to the design of an individualized career education program to meet the needs and identified goals of the learner with mental disabilities.

The purpose of this chapter is to provide an overview of the career/vocational assessment process and provide recommendations related to how this process might be most effectively implemented with individuals with mental disabilities. The first major component of this chapter discusses (a) types of information to be gathered in the assessment process, (b) basic techniques available for gathering this information, and (c) models of career/vocational assessment that are currently in place. The second segment of this chapter will present recommendations related to (a) the definition, purpose, and goals of career/vocational assessment, (b) the assessment process itself and basic assessment methods, and (c) the role of various personnel in career/vocational assessment.

BASIC CONSIDERATIONS

The history of career assessment mirrors in many aspects the history of career education and the interdisciplinary foundation for this concept. There are a number of other disciplines involved in career assessment for the handicapped, especially vocational education and vocational rehabilitation. The field of vocational education is primarily concerned with the preparation of all individuals for paid or unpaid employment requiring less than a baccalaureate-level degree. Vocational education programs are operated at both the secondary and postsecondary levels and may be part of the regular high school program or offered in a separate facility under a separate administration (Sitlington, 1981a). They are the primary source of specific vocational training for all students. Ten percent of these vocational education funds are mandated for use in training the handicapped. The Carl E. Perkins Act, the most recently passed vocational education legislation, places particular emphasis on including handicapped learners in ongoing vocational training programs and on gathering vocational assessment information on these students.

The field of vocational rehabilitation, and the state rehabilitation agency in particular, is also concerned with preparing the handicapped person to become employed in the least restrictive environment. Although the primary emphasis of vocational rehabilitation remains with adults, it is becoming increasingly involved in working with school-aged youth, aged 16 and above, as they prepare to make the transition from school to work. Vocational rehabilitation funds are traditionally used to purchase services from existing agencies and programs. They do, however, also fund innovative programs within rehabilitation centers. Services funded by vocational rehabilitation include (a) medical evaluation, (b) vocational evaluation, (c) prosthetic devices that will make the individual more employable, (d) specific skill training, and (e) job placement and followup.

Although neither of these groups deals specifically with the broader concept of career assessment, both have been integrally involved with the development of the vocational assessment process (Peterson, 1981). In 1966 professionals in the field of vocational evaluation formed the Vocational Evaluation and Work Adjustment Association (VEWAA) as a division of the National Rehabilitation Association. Vocational evaluation or work evaluation has been an important component of programs in rehabilitation centers for a number of years, and the field of vocational rehabilitation still prepares the largest number of professionals with the formal title of vocational evaluation specialists. The vocational evaluation sequence traditionally consists of the use of a number of formal assessment systems in a concentrated amount of time. Data from these instruments are combined with structured observation of the individual in production areas within the rehabilitation center.

The issue of vocational assessment in public schools has more recently emerged within vocational education and special education organizations. Both the National Association of Vocational Education Special Needs Personnel (NAVESNP) and the Division on Career Development (DCD) have formed committees to address the issue of career/vocational assessment as it relates to the school setting. Of particular concern is the application of techniques and processes developed primarily for the rehabilitation setting to programs in the schools, as well as extending the concept to that of "career assessment." Such an extension involves broadening the content of assessment to areas related to all of the career roles an individual might play and extending the assessment process down to the elementary grades.

Types of Information to be Gathered

The close relationship between the career programming and career assessment processes requires that program staff members first determine the types of information needed by their program and then select the assessment techniques and instruments that will provide this information. Types of information that need to be gathered on youth with mental disabilities can be grouped into seven basic categories: (a) medical, with specific emphasis on related health conditions and medication that need to be considered in determining exploratory and final job placements; (b) functional academic skills; (c) interests and environmental preferences; (d) interpersonal skills; (e) work habits and attitudes, including the individual's personal value system and self-concept; (f) learning style, including preferred learning modes and types of effective reinforcers; (g) dexterity and endurance and general vocational skills needed across a number of occupations; and (h) specific vocational skills required for a specific type of occupation. Each of these areas will be discussed in the following paragraphs and Appendix A contains a summary sheet with the major types of information included under each category.

Medical Information

The medical background of all individuals with mental disabilities needs to be investigated, especially that of the severely disabled whose primary handicap is often accompanied by complicating secondary problems. The information gathered in the medical area needs to focus on factors to be considered in placing the youth on paid or nonpaid job experiences and in living situations. Do the student's related health problems eliminate certain occupations because of environmental conditions or excess physical demands? Will the medication taken by the individual interfere with the performance of certain daily living tasks? These and other questions need to be carefully considered for the individual's safety, the safety of all persons in the work and living environment, and for the legal protection of the employer and the training program.

Functional Academic Skills

The area of job-related functional academic skills has received new emphasis with the advent of the technology revolution. Certain academic skills appear to be especially relevant for participation and success in ongoing vocational education programs and subsequent employment environments. A great deal of research (Greenan, 1983, 1984; Pratzner, 1978; Selz, Jones, and Ashley, 1980) has investigated the concept of generalizable or transferable skills. These are generic interpersonal and functional academic skills found in a number of vocational education programs and occupations.

Building upon this literature base, Greenan (1983) systematically validated a core of 28 mathematics skills, 27 communication skills, 20 interpersonal relations skills, and 28 reasoning skills which were required across and within a majority of secondary vocational programs and occupations in the major vocational areas. Examples of these skills include reading data from books and manuals, reading/writing common fractions, and taking responsibility for one's actions.

Youth with mental disabilities often exhibit splinter academic skills which can be a valuable tool in locating employment and in living as independently as possible. Such functional academic skills might include reading signs and specific words required on the job, reading written directions on containers, doing basic addition and subtraction, being able to use a calculator, or using basic measurement tools, such as a ruler or measuring cup. The lack of basic functional academic skills also needs to be considered in determining the specific support the individual will need during training and placement on the job or in a residential option, and in determining the specific skills that need to be targeted during training.

Job-related reading, however, has been found to differ from school reading. Job-related reading is done for the purpose of reading-to-do, while school programs involve reading-to-learn tasks (Seifert, 1979; Diehl and Mikulecky, 1980). Students read mostly textbooks while workers read a variety of materials in different situations throughout the day (Mikulecky, 1982). Job-related literacy tasks are also completed in a context which provides additional information to the language user. Thus, although areas such as functional reading and math skills, written and verbal communication skills, and basic reading comprehension need to be assessed, they should be assessed through situations closely related to the world of work.

Interests and Environmental Preferences

The area of interests is one that is often overlooked in working with the mentally disabled. The accurate assessment of interest is often hindered by the student's lack of awareness and experience with situations and occupations and by the individual's low reading level. Preference for certain types of activities, people, and environments are, however, often very strong and can be noted through structured observation of youth in work and daily living settings and through interviews with the student, the individual's parents or guardians and other professionals who have worked with the student in the past. We all perform more effectively and efficiently if we are doing what we like to do best in the type of environment in which we feel most comfortable; the same principle holds for youth with mental disabilites. The work settings in which the individual is placed during exploration and work experience phases offer ideal settings for observing the learner's environmental and task preferences related to the world of work. Types of information that are important in this area include previous work experience and awareness of occupational options; self-appraisal of abilities; and preference according to occupational cluster, working conditions, and types of work. Information on preferences related to living environments can be gained through interviews with the students and parents.

Interpersonal Skills

This group of skills has been shown to be one of the major causes of unemployment and underemployment of handicapped youth (Matthews, Whang, and

Fawcett, 1980). A growing body of experimental research supports the assertion that mildly handicapped adolescents are not typically as advanced as their nonhandicapped peers in many areas of social-emotional development, including the perception and interpretation of emotions and social situations and the ability to develop empathy (Bachara, 1976; Pearl and Cosden, 1982; Wiig and Harris, 1974;)

Such information provides a strong rationale for the consideration of information on interpersonal skills in the vocational planning process for the individual with a disability; these skills are also crucial for all other aspects of adult life. Such information may include (a) ability to get along with peers, (b) ability to get along with authority figures, (c) the individual's personal value system, (d) self-concept, and (e) consistency of student's moods. It has been found that the student's performance outside the school setting often differs drastically from his or her performance within the school walls. For this reason, information on interpersonal skills should be gathered in social and work-related settings as well as in special education and regular education classes.

Work Habits and Attitudes

The area of work habits and attitudes is closely related to the previous area of interpersonal skills and is often grouped with this area to form the concept of employability skills. The basic work behaviors that are targeted in a vocational training program are the ones to be measured in the assessment process. Such behaviors include (a) endurance and working continuously, (b) responding appropriately to instructions and safety signals given, (c) working without disruption, (d) rate and accuracy, (e) ability to work under pressure, (f) ability to move from one task to another, and (g) attitude about work itself.

Baseline data can be gathered during the initial phases of assessment and continuous data can be kept during all stages of work exploration and experience and final job placement. In this way the learner's behavior can be monitored in simulated or real work environments that require different levels and types of performance.

Learning Style

Information on preferred learning modes and types of effective reinforcers is emerging as some of the most important information to be collected on the learner with a disability. Unfortunately, this information is often the most difficult to obtain, especially through formal assessment procedures. Information in this category includes background on the most effective reinforcers for the individual and the best method of instruction, as well as the decision making skills possessed by the learner. Information on these areas may be best gathered through systematic observation of classroom instruction and interviews with the student, the student's parents, and other professionals who know the individual. Such information is critical for use not only by special education personnel, but by other professionals involved in the vocational training of the individual and by the employers involved in the program.

Dexterity, Endurance, and General Vocational Skills

This category includes skills that are generalizable across a number of occupations and occupational settings and relates to general assembly tasks as well as

tasks required in personal service jobs. Such tasks include (a) gross and fine motor skills, (b) manual and finger dexterity, (c) ability to work with large and small tools, (d) strength and stamina, and (e) ability to perform clusters of skills found in a number of target jobs, such as mopping, cleaning tables, using a cash register, filing records. Basic dexterity can be measured by formal dexterity tests; a list of those tests can be found in Appendix B. Information can also be gathered by infrmal tests developed by the special or vocational education staff and by observation of the learner in vocational education programs and in exploratory and work experience settings.

Specific Vocational Skills

Information on specific vocational skills is often the last type of information to be gathered in the assessment process and is usually gathered through systematic observation of the student in vocational education programs and in school-based or community-based sites. Information can also be gathered on vocational skills which the student has learned through hobbies or job-related experiences.

Basic Career/Vocational Assessment Techniques

The basic techniques used in career assessment and the more narrow process of vocational assessment consist of the following (Brolin, 1982; Peterson and Hill, 1982; Sitlington, 1979):

1. Review of previous records.

2. Interviews of parents, the student, former teachers, and employers.

3. Paper-and-pencil tests, such as those measuring functional academics, vocational interest, and attitudes towards work.

4. Manual dexterity tests, measuring areas such as finger dexterity, gross motor skills, and eye-hand coordination.

5. Commercial assessment systems, which measure either performance on basic job tasks or underlying traits associated with many different occupations.

6. Self-developed work samples, which are structured simulations of real-work environments that measure specific types of occupations or underlying traits.

7. Situational assessment instruments, such as rating scales, checklists, and other behavioral observation forms used to systematically observe the individual in real-work environments within the school or community.

The following sections will present each of these techniques and the types of information that can be gained from them. It is the task of each career/vocational education program to first determine the types of information which need to be gathered on the handicapped youth and then identify the assessment techniques that will be the most effective in gathering this information.

Review of Previous Records

One of the first sources of information is previous school records, which contain existing test data and observations of previous teachers. A review of school records might also provide information on whether the student has had previous instruction or experiences related to career/vocational educat n. It is important to remember when reviewing records, that individuals may react differently to new teachers and a novel situation and sometimes enter a new school or grade with a changed attitude. Thus, while previous information should be considered, time should be taken to form opinions based on observations of the student.

Interviews

Structured interviews of parents, former teachers, former employers, and the student can often be one of the best sources of information on how the individual with mental disabilities functions in the real world. Parents can provide information on the student's participation in family chores, independent skills and activities, use of spare time, and jobs the students may have held. Former teachers can provide information on the situations in which the student learns best, what instruction or experience the student has had in previous grades, and information on functional academics. As with information from previous records, input from these two sources should be combined with current observations.

An interview with the learner can also provide a great deal of information, such as what the student would like to do as an adult, his or her hobbies, and so forth. Of course, information on the student from previous and current employers can be some of the more valuable input, because this is information gathered in the target environment.

While interviews can provide a great deal of information, there are some drawbacks to this technique. First of all, it can be very time-consuming. Second, you must enter the interview with a set of questions and must keep returning to those questions in order to gather information consistently across all sources. Finally, the person being interviewed may be intimidated by the questioner and may provide the responses he or she feels the interviewer wants to hear. With all of these drawbacks, however, the interview process is one of the most useful in gathering relevant information on how the student has functioned in real-life situations.

Paper-and-Pencil Tests

Paper-and-pencil tests are farther removed from the real world of work than are the other assessment techniques. Such tests, however, can provide valuable information on areas like functional academic skills, knowledge of the world of work, and general and specific vocational interests. Sitlington and Wimmer (1978) have listed some safeguards that should be taken in using these instruments. First, will the content and format of the actual results be helpful to you? If the test is to determine vocational interest, do most of the jobs fall within the test taker's ability range? Second, is the test reliable and valid? Third, does the norming population represent a group with which you want to compare your clients? Fourth, can the student understand the questions, even if they are read aloud, and do the responses have a reasonable chance of reflecting the student's knowledge or feelings?

The appropriateness of a given commercial test will depend on the clients to be tested and the type of information sought. A list of sample paper and pencil tests is included in Appendix B. Self-developed paper-and-pencil instruments also may be used and may more closely provide the actual information needed. A commercially developed test, however, should be used if available and appropriate because the construction and validation process are usually more standardized and the results may have more credibility with other professionals.

Manual Dexterity Tests

Another group of commercially available instruments measures areas like eye-hand coordination, finger dexterity, gross motor dexterity, and use of small tools. Many employers require such tests as screening devices for all job applicants. They can be useful, too, in ascertaining how well the student may be able to function on the type of small assembly tasks found in sheltered workshops or assembly lines. Manual dexterity tests can also be an indicator of a person's work habits and attitudes, physical endurance, and stress tolerance.

The same questions directed at paper-and-pencil tests should be considered here. Norm groups for many of these tests are quite dated and may not represent an appropriate population to use as a comparison group. Therefore, one may want to administer the test under standard conditions for comparison with the norm population and then take data on repeated trials since persons with handicaps often show sufficient improvement over repeated administrations to indicate that they can be trained in these skills.

Some of the most commonly used tests of manual dexterity are listed in Appendix B. Many of them measure similar skills, so one should consult the manuals before purchasing.

Commercially Developed Assessment Systems

The available commercially developed assessment systems vary greatly in the types of tasks required of the testee and their resemblance to actual jobs or components of jobs. Many of the systems attempt to assess a person's performance on actual job components or activities, such as alphabetizing file folders, sorting mail, or tuning an engine. Other systems strive to measure the testee's performance on generic tasks common to a number of jobs, involving such skills as wrist-finger speed, independent problem solving, or numerical sorting. In either case, the individual's performance is usually reported not only in terms of the specific tasks assessed but also in terms of other occupations or activities related to those tasks.

As with all commercial products, careful selection of such systems can eliminate many of the problems associated with their use. If a system can be found that measures the performance areas being taught and if money is available for purchasing, commercial systems can provide a great deal of hands-on information about the clients' work habits and attitudes, potential for certain jobs, and interest in these jobs. Brolin (1982) lists 10 questions to ask when considering commercial systems, as follows:

1. Does the system take into account expectancy to fail?

2. Does the system take into account academic limitations?

3. Does the system take into account verbal limitations?

4. Does the system take into account limited experience?

5. Does the system allow for more than one trial on tasks?

6. Does the system allow for repeated instruction and check for comprehension?

7. Does the system have face validity?

8. Does the system allow for appropriate conditions for testing--i.e., pleasant surroundings, orderly administration, and fatigue?

9. Does the system use "spaced" rather than "massed" evaluation?

10. Is the system adequately normed on individuals with handicaps and the workers who are doing the various types of tasks? Have follow-up studies been conducted on its vocational prediction validity?

A list of the commonly used commercial systems is presented in Appendix B. The cost of many of these systems, however, is extremely high.

Self-Developed Work Samples

As noted in the preceding section, commercially developed assessment systems can represent actual jobs or job activities or they can represent generic characteristics or skills common to a number of jobs. The major advantage of commercially available assessment systems over self-developed systems is, of course, that development and standardization have occurred. In contrast, self-developed work samples tend to reflect the type of job placements available in the local geographic areas and are much less expensive to construct. As with commercial systems, local norms can be developed so that clients can be compared with the population with whom they are competing for jobs.

This author believes that work samples developed by the career education, work experience, or vocational training program are the most useful assessment techniques. Not only can work samples be used to assess the disabled individual's ability to perform specific work tasks or use specific equipment, but they can also be used to assess such areas as work habits, stamina, and social skills. A by-product of this type of assessment is also a hands-on exposure to actual job tasks before clients enter the semi-competitive or competitive job market.

For purposes of this chapter, work samples are defined as "simulated representation of work tasks or activities, which may or may not represent an actual job or component of a job" (Sitlington and Wimmer, 1978, p. 80). Work samples can be as large or small or as general or specific as is appropriate for the program. A self-developed work sample may be an exact replica of all or part of a job, such as an assembly task, that exists in a local industry employing a large number of workers. On the other hand, the work sample may consist of the tasks common to an occupation found in several businesses in the city, such as a fry cook in a fast food

hamburger restaurant. In either case, the given sample can assess the person's ability to perform a specific job or mav be used to gather information on general abilities, such as eye-hand coordination, a tention to task, physical stamina, or interest in the job area. An effort should be m. de to gain as much information as possible from the work sample--in the areas of work habits and attitudes as well as specific job performance.

The process of developing work samples basically involves six steps:

1. Decide on samples to develop. This involves conducting an informal survey of the community to determine which jobs are feasible for the specific disabled population being served, then ascertaining if work samples for some of these jobs have already been developed by someone else. Finally it entails determining which jobs can be most feasibly and realistically represented in a work sample format.

2. Conduct a job an alysis. Once a job has been selected, a detailed, accurate analysis must be conducted, to include job tasks, worker requirements, physical demands, and environmental conditions. The content validity of the work sample depends almost solely upon this step.

3. Design and construct the work sample. The job tasks selected for inclusion in the sample must be based on their importance to the job and the feasibility of replicating them in the work sample. These tasks must then be sequenced, with necessary practice sessions and instructions included. Performance on the sample should be measured by number of correct products, number of errors, quality of work, or time required for completion, whichever element is most appropriate for the particular task.

4. Write work sample manual. For the work sample to be systematically administered and used by other professionals, a manual is necessary. It should include two forms of specific instructions--those to be given to the individual and those to be followed by the evaluator. The materials development center at the University of Wisconsin-Stout has designed a standard format for such a manual that allows agencies and individuals to use work samples developed by others.

5. Establish norms. Establishing and updating norms is an ongoing process. The groups with whom the individual is to be compared should be carefully selected and should reflect the population with whom the person with a handicap will be competing for a job. Percentile scores or standard scores are most often used in establishing norm tables. More information on these methods can be found in any standard measurement text.

6. Establish estimates of reliability and validity. This step is one most often overlooked in self-developed work samples, but it is probably one of the most important. Elaborate statistical calculations do not have to be carried out, but it is necessary to see if the scores obtained on the work sample are consistent and if the sample measures what it purports to measure. Test-retest reliability is probably the most useful statistic in determining consistency. In terms of validity, it is most useful to determine if the essential tasks or activities of the job itself are

realistically included in the work sample and if individuals who do well on the sample perform well on the real job that the sample represents.

Work sample development is a time-consuming process, particularly when doing it the first time. One must identify the top priority samples to be constructed first and also become aware of work samples developed by other programs that may be adapted or used as is. The Materials Development Center at the University of Wisconsin-Stout has established a Work Sample Clearinghouse to facilitate exchange of self-developed samples. This is a good resource for programs just beginning work sample collection.

Situational Assessment

Situational assessment is the assessment technique most closely related to the target environment of the trainee. This approach involves systematically observing the individual in an actual work situation through the use of rating scales or other behavior observation devices. The work situation could initially be an in-school work station or a job station in a private vocational training program. Eventually, though, information should be gathered on the individual in the environment where he or she will be expected to function, whether it be sheltered, semi-competitive, or competitive employment.

This procedure is highly important in providing information on the general prevocational training needs and traits of the client (e.g., work habits and attitudes) because previously unforeseen strengths and weaknesses often appear in real life situations. Situational assessment also provides an example of how the assessment process can be integrated into the ongoing vocational program, transforming general impressions of supervisory personnel into data-based conclusions.

Almost every program should have an on-the-job component in which the individual is placed in the community for exploration, work experience, or vocational training. Situational assessment allows the work experience coordinator or vocational supervisor to look at specific facets of the worker's performance in these situations as objectively as possible and to compile information on that performance.

Two things are crucial in situational assessment. First, the observation instruments must focus on the behaviors and attitudes that the supervisor is trying to observe. Second, the instruments used must allow reporting that is as objective as possible.

The employer or person supervising the worker usually completes some type of observational checklist or rating form. The work supervisor, during periodic visits, adds further information through his or her ratings. In both cases, the forms used should provide information that will help in planning and working with the individual. Whether program administrators develop their own form or use existing forms, the criteria must be such that the information obtained will provide necessary and valid data on the individual in the working situation. Esser (1975) has described other available instruments that may be used.

Models of Career/Vocational Assessment

A number of authors have provided models for combining the techniques discussed in the previous section into an assessment process that can be implemented in the schools (Cobb & Larkin, 1985; Halpern, Lehmann, Irvin, & Heiry, 1982; Peterson & Hill, 1982; Sitlington, 1979, 1981b; Sitlington, Brolin, Clark, & Vacanti, 1985; Stodden & Ianacone, 1981). The majority of these models focus on the assessment process as it relates to vocational programming at the secondary or postsecondary level. None of the models really address the broader issue of career assessment. Although each model characterizes the assessment process in a slightly different way, all emphasize its role in providing instructionally relevant information tied to available vocational programming options.

Phelps and Wentling (1977) presented a systems model for the identification, assessment, and evaluation of special needs learners. The identification and assessment system is composed of three phases related to the learner and based on the time progression of a student through a vocational program The phases include preassessment, formative assessment, and summative assessment. A fourth phase, ultimate assessment, involves evaluating the actual vocational program to determine if its goals and objectives have been met. The first phase, preassessment, involves collecting information about the student's learning strengths and weaknesses and identifying instructional methods, media, and remedial and support services based upon these findings. The second phase, formative assessment, occurs during actual instruction and involves monitoring and evaluating the learner's progress throughout the vocational program. Formative assessment may provide valuable information for revising or updating the student's individualized education program. This information should be fed back into the preassessment phase.

The third phase, summative assessment, occurs after instruction. Summative assessment data assist in evaluating the student's learning, the teacher's instructional success, and the student's present functioning level.

Sitlington (1981b) also stressed that one of the primary roles of the vocational assessment process in the public schools should be to provide information to aid in the development and ongoing review of the Individualized Vocational Plan (IVP) of the special needs student. She identified three phases of assessment. The first of these, initial assessment, involves a concentrated collection of information related to the following areas: (a) medical; (b) educational, (e.g., functional reading and math levels); (c) personal-social behaviors, (e.g., relationships with peers and supervisors) and appearance; (d) interests; (e) work habits and attitudes, such as staying on task; (f) gross and fine motor skills; and (g) preferred learning modes and types of effective reinforcers.

The second phase of the assessment process, entering assessment, would occur as a student enters a specific vocational training program. Information collected during this stage would include the entering knowledge and performance level of the student in the academic and performance areas related to the specific class and best methods to use in working with the student. The third phase, continuous assessment, consists of collecting data on the student's emerging interests, skills, and work habits and attitudes throughout the training program. Information gathered in this third phase is particularly helpful in future planning with the special needs student.

Stodden and Ianacone (1981) proposed an assessment model with three major components: readiness, assessment, and application. The readiness component includes activities that facilitate the individual's personal and occupational awareness, exploration, and understanding and provide information on work values, interests, and entry-level behaviors and skills. The second component, assessment, assists the individual to investigate in-depth interests and abilities within specific vocational areas and actual work roles. This component contains activities sampling a learner's behavior on a variety of test items, work tasks, or situations to compare the student's skills, work habits, attitudes, physical abilities, and personal-social traits to those of a specific group of workers. The third component, application, involves the interpretation, evaluation, and preparation of data collected over time and various assessment situations and compiling the information for use by the interdisciplinary team members who recommend occupational placement and programming options for special needs students.

In keeping with the previous models, Peterson and Hill (1982) proposed three levels of assessment. Level I involves gathering and analyzing existing information and conducting informal interviews for vocational programming. This level involves collecting six basic types of data: (a) data from tests conducted as part of the special education evaluation; (b) informal interview with the student; (c) informal conference with student's parents; (d) information from previous teachers; (e) aptitude, achievement, and ability information; and (f) cumulative records of grades, IQ tests, attendance, and discipline. Level II assessment consists of collecting information on the student's interests and aptitudes, usually through the administration of formal tests. A Level III comprehensive Vocational Assessment is designed to seek out additional information about a student's career interests, strengths, and needs which has not been obtained through Level I and II assessments. This level of assessment, which involves the use of commercial systems, is optional and is recommended only when it is felt that there is not enough information upon which to base the recommendation for an appropriate vocational placement.

Finally, Cobb and Larkin (1985) have proposed a paradigm for vocational assessment that relates the activities and instrumentation to instructional delivery in an ongoing vocational education program. Their paradigm categorizes the vocational assessment process into five chronological purposes: screening, placement, program planning, monitoring of individual progress, and individual program evaluation. The first purpose, screening, asks the main question of whether vocational education is an appropriate curriculum option for the specific handicapped learner. The second component, placement, addresses the question of which program within vocational education is most appropriate. This component involves matching a number of programmatic variables with student interests and strengths and parent concerns.

The third segment of Cobb and Larkin's (1985) model involves assessment for program planning, with emphasis on determining what support services must be provided for the student, based upon a thorough analysis of the interaction between the student, the curriculum, the teacher, other students, facilities and equipment, and home and community. The fourth purpose of assessment involves monitoring individual progress while the student is in the vocational program. As with the models previously discussed, this phase involves collecting continuous data on student performance throughout the program. The final phase, individual program evaluation, involves determining how well the supportive structure has supported the student and determining if a curriculum change is warranted.

BEST PRACTICES IN CAREER/VOCATIONAL ASSESSMENT

The area of career/vocational assessment was seen by the Division on Career Development (DCD) as so critical that representatives of the DCD Committee on Career/Vocational Assessment were asked to draft a position paper on the topic (Sitlington et al., 1985). The following pages present the core of this position paper, which was endorsed by the Executive Committee of the division and which addresses the concept of best practices in career/vocational assessment. The issues identified by the authors centered on (a) definition, purpose, and goals of the career/vocational assessment process; (b) the process and methods utilized; and (c) personnel to be involved.

Definition, Purpose, and Goals

The establishment of an operational definition and purpose of assessment is basic to the other issues discussed in this chapter since it determines to a great extent the methods and processes to be used and the personnel to be involved in the assessment process. The definition and purpose of career assessment must be defined in light of the overall assessment process within special education and the more narrow vocational assessment processes within vocational education and vocational rehabilitation. The Division on Career Development recommends the use of the term "career assessment" to define a developmental process beginning at the elementary level and continuing through adulthood. Career assessment is a broad term that includes "vocational assessment" or "vocational evaluation," much as career education encompasses vocational education. The career assessment process is one which should be integrally related to all aspects of career education, including not only preparation for employment, but also preparation for the roles of productive family member, citizen, and participant in leisure, recreational, and avocational activities which are of benefit to oneself or others. The specific content to be assessed in the career assessment process should be dictated by the components of the career education model being implemented.

The career assessment process should be viewed as a foundation for individualized program planning from kindergarten through adulthood. The goals of this assessment process should be specifically geared to providing the information needed to make decisions in all areas of career education programming; these decisions may be related to developing an individualized program (curriculum content) for the handicapped learner or determining what assistance the learner needs to succeed in an ongoing program. The results of the assessment process should be fully integrated into the individualized education program or other program plan for the individual.

The career assessment process should have the following specific goals: (a) to assess the individual's interests, strengths, and needs that relate to his or her future roles as a family member, citizen, worker, and participant in leisure, recreational, and avocational activities; (b) to assess an individual's ability to learn and profit from instruction and to select the best methods for this instruction; (c) to provide data for determining the best placement within a specific career/vocational program; and (d) to determine the best placement alternatives for the individual at the conclusion of a specific training program.

Process and Methods

The issues of process and methods must also be viewed in light of the approaches taken by vocational rehabilitation and vocational education. There are a number of models of vocational assessment currently in the field and a number of administrative arrangements under which a vocational assessment is carried out. Formal arrangements include vocational assessment centers in high schools or vocational centers, mobile assessment units, or contracts with the vocational evaluation unit of a rehabilitation center. All of the arrangements relate only to the area of vocational assessment. The Division on Career Development advocates the view that career assessment is a continuous process that is integrally related to the ongoing instructional program for the handicapped learner. This process should begin in the elementary grades and continue through adulthood as long as decisions are being made relative to the career preparation of the handicapped individual.

The Division on Career Development does not endorse any specific model or location for implementing the career assessment process. Whether it be done in the classroom setting or in a vocational assessment center or mobile assessment laboratory, the results can be equally valid. The Division on Career Development does, however, emphasize the need to determine the types of information to be collected based on the decisions that will be made in terms of the lifelong career development of the handicapped individual. The Division also emphasizes the need to relate the assessment process to the current preparation needs of the individual. The assessment sequence should be parallel to the career programming sequence developed for each individual and should provide the information needed to make decisions in this program.

The Division on Career Development does not advocate specific methods for obtaining assessment information but endorses certain concepts in the selection of methods and instruments. These considerations are closely correlated with those advocated for any type of assessment process used with the handicapped. First, the selection of assessment methods should be specifically tailored to the types of information that need to be gathered and the decisions to be made. Second, specific instruments should be selected in light of the learning characteristics of the individual to be assessed. Third, the assessment program should use methods and instruments that involve tasks that closely resemble the tasks to be trained. Fourth, the assessment should be conducted in an environment that resembles as closely as possible the target employment or living environment of the handicapped individual. Finally, the assessment process should incorporate a sequence of tasks that obtain a representative sample of the learner's behavior over an extended period of time.

Personnel in the Career Assessment Process

Personnel issues in career/vocational assessment are exceedingly complex. Not only do the issues in vocational assessment for school-aged youth still exist, but the downward extension of age and grade level and expansion of the concept to career assessment also pose additional problems that demand our attention. Questions in the area relate to the roles to be played by a number of professionals, including elementary and secondary level special educators, vocational special needs personnel, rehabilitation personnel, and school psychologists.

The Division on Career Development advocates that the personnel responsible for conducting and coordinating career assessment should be certified in special

education when working at the elementary level and certified in secondary special education or vocational special needs education when working at the secondary level. Vocational special needs and rehabilitation personnel should assume primary responsibility at the postsecondary level. This does not mean that counselors, school psychologists, rehabilitation personnel, teachers, administrators, parents, and employers should not be involved in the process. It does mean, however, that the role of coordinating the career assessment process should be restricted to the professional primarily responsible for the learner's career development at any particular stage in the educational process.

The Division on Career Development also advocates that the professionals responsible for coordinating the career assessment process at the elementary level should have background in the areas of career development and informal assessment. The professionals responsible for conducting the career assessment at the secondary and postsecondary levels should demonstrate background and training that meets the minimal standards of preparation in the area of vocational evaluation. The Division recommends that such preparation be based on demonstrated competency or successful completion of training in competencies such as the following:

1. Analysis of entry-level competencies needed in the career development program.

2. Implementation of job analysis procedures.

3. Identification and selection of assessment procedures appropriate for students at various ages and functioning levels.

4. Selection and administration of appropriate assessment instruments.

5. Construction of rating instruments for situational assessment and other behavior observations related to all career roles.

6. Integration and interpretation of assessment data.

7. Application of assessment data to instructional programs within the school setting.

Future Perspectives

Career assessment can be defined as a developmental process beginning at the elementary level and continuing throughout adulthood. This process, which includes the concept of vocational assessment (or vocational evaluation), should be integrally related to all aspects of career education, including not only preparation for employment, but also preparation for the roles of productive family member, citizen, and participant in leisure, recreational, and avocational activities which are of benefit to oneself or others. The Division on Career Development does not advocate a specific model, setting, or method for implementing career assessment, but emphasizes that the career assessment process should be an ongoing sequence designed to parallel the career programming sequence developed for each individual and should provide the information needed to make decisions in this program.

Where the future lies in the area of career assessment is difficult to predict, but there are at least four major trends that can be foreseen.

First, the issue of the career assessment process within public school programs will continue to be addressed. The Division on Career Development and the National Association of Vocational Education Special Needs Personnel have established a firm foundation for the discussion of these issues and should continue to address the problem with a united front.

Second, it is this author's view that the heavy reliance on commercial assessment systems will diminish and will be replaced by an approach involving the ongoing collection of data based on the student's performance in different phases of the career education process, including exploration, work experience, and preparation.

Third, the issue of certification of personnel conducting career assessment will move to the forefront. The Commission on Certification of Vocational Evaluation and Work Adjustment Personnel (CCWAVES) is in the process of establishing preparation and experience standards for personnel who will be involved in vocational assessment. Although this certification will most heavily affect professionals serving in rehabilitation centers, it holds a number of implications for vocational assessment personnel in assessment centers within the public schools. It is uncertain how individual states will react to this certifying body and whether or not CCWAVES certification should or will be required of school-based assessment personnel.

Finally, it is hoped that the concept of career education will be more universally integrated into the individualized education programs of all handicapped children and youth. If this integration is to occur, the concept and processes of career assessment must be integrated into the ongoing assessment of all handicapped individuals from the elementary level through adulthood. The emphasis of much of the writing and discussion up to this point has been on identifying the role of vocational assessment in public school programs. Although we need to continue to pursue this area, we also need to devote our efforts to developing models of career assessment that will begin in elementary school and assess the skills needed by the individual with a disability to be a productive family member, citizen, and participant in leisure, recreational, and vocational activities.

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TYPES OF INFORMATION TO BE GATHERED DURING THE VOCATIONAL/CAREER ASSESSMENT PROCESS*

Please rate each of the following types of information in regard to how important you feel it is for your particular and type of special needs learner.

\+ for very important
for useful, but not crucial
\- for not important or not useful

A. Medical

___ Visual and auditory acuity
___ Physical condition and capacity
___ Physical disabilities
___ Chronic illnesses
___ Medication
___ Specific physical limitations
___ Others (Please list): _____

_____

B. Functional Academics

___ Reading comprehension
___ Sight vocabulary
___ Functional reading skills (job applications, TV Guide, bus schedules, etc.)
___ Functional math skills (use of rules, cooking implements, making change, etc.)
___ Addition and subtraction skills
___ Communication skills (printing/writing, sentence structure, spelling)
___ Verbal skills (basic conversation skills, nonverbal/body communication skills)
___ Study skills (outlining, finding main ideas)
___ Others (Please list): _____

_____

C. Personal/Social

___ Acceptance by student of special education placement (if applicable)
___ Motivational and incentive values
___ Self esteem
___ Ability to get along with peers
___ Ability to get along with authority figures (parents, teachers, boss)
___ General appearance
___ Consistency of student's moods
___ Use of social amenities
___ Others (Please list): _____

_____

D. Interests
- ___ Vocational experience/knowledge base
- ___ Self-appraisal of abilities
- ___ Projected desirable life styles
- ___ Preference according to occupational clusters
- ___ Preference for working conditions
- ___ Preference for types of work (data, people, things)
- ___ Others (Please list): _____

_____

E. Work Habits and Attitudes
- ___ Attitude about work itself
- ___ On-task behavior and consistency of performance
- ___ Speed, accuracy, and precision of work
- ___ Adjustment to repetition
- ___ Endurance/Stamina
- ___ Self confidence
- ___ Need for supervision
- ___ Self direction/Ability to take initiative
- ___ Ability to follow directions
- ___ Acceptance of authority
- ___ Relationships with fellow workers
- ___ Ability to work under pressure
- ___ Conformity to schedule
- ___ Ability to move from task to task
- ___ Others (Please list): _____

_____

F. Manual Dexterity
- ___ Gross motor skills
- ___ Fine motor skills
- ___ Manual and finger dexterity
- ___ Eye-hand coordination
- ___ Ability to work with large/small tools
- ___ Others (Please list): _____

_____

G. Learning Style
- ___ Personal reinforcers
- ___ Best method(s) of instruction
- ___ Decision-making skills
- ___ Others (Please list): _____

_____

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SAMPLE PAPER/PENCIL TESTS, MANUAL DEXTERITY TESTS, AND COMMERCIAL SYSTEMS

I. PAPER AND PENCIL TESTS

A. Interest Inventories

Name: AAMD READING-FREE VOCATIONAL INTEREST INVENTORY

Address: AAMD
5201 Connecticut Avenue N.W.
Washington, D.C. 20015

Description: Separate male/female form. Most liked of three pictures is circled. Designed for MR's. 11 cluster areas automotive, building trades, clerical, animal care, food service, patient care, horticulture, janitorial, personal service, laundry service, and materials handling.

Disability
Population: MR 14 and older

Name: GEIST PICTURE INTEREST INVENTORY

Address: Western Psychological Service
1203 Wilshire Boulevard
Los Angeles, CA 90005

Description: Separate male/female forms. Selects 1 out of 3 pictures showing jobs on activities. Covers 12 interest areas: persuasive, clerical, mechanical, musical, scientific, outdoor literary, computational, artistic, social service, dramatic, and personal service.

Disability
Population: LD and ED

Name: PICTURE INTEREST EXPLORATORY SURVEY (PIES)

Address: Career Education Media
P.O. Box 27083
Tempe, AZ 85282

Description: Series of slide showing hand working. Student circles number or pictures they like on answer sheet.

Disability
Population: LD, ED, High EMR, Deaf

Name: WIDE RANGE INTEREST OPINION TEST (WRIOT)

Address: Jastak Assessment Systems, Inc.
1526 Gilkin Avenue
Wilmington, DE 19306

Description: Students pick pictures in a spiral booklet most like and most disliked and circle on answer sheet. Profile on 18 occupational groups and 2 attitudes.

Population: Age 5 and older, MMH, MOMH, Deaf, ED, LD

Name: OCCUPATIONAL INTEREST SCRAMBLE SURVEY, VESEP II

Address: Vocational Education/Special Education Project
Central Michigan University
225 Sloan Hall
Mt. Pleasant, MI 48859

Description: 100 pictures of jobs-students separates on scale from 1-10 (lowest to highest). Jobs based on 10 occupational subgroup: agriculture/natural resources, automotive and power service, clothing/textile service, construction, distribution, food preparation and service, graphics and communication, health, manufacturing, and office and business.

Population: All especially 14 and older

B. Functional Skills Inventories

Name: BRIGANCE DIAGNOSTIC INVENTORY OF ESSENTIAL SKILLS

Address: Curriculum Associates, Inc.
5 Esquire Road
North Billerica, MA 01862

Description: Determines level of functioning in regards to skills needed to function in society. Two major areas: academic prerequisites to applied skills (work recognition, oral reading, work analysis, numbers, fractions, etc.) and applied skills (forms, health and safety, travel, money, food, clothing, etc.)

Population: MMH, LD, ED, 9th grade and above

Name: SOCIAL AND PREVOCATIONAL BATTERY (SPIB)

Address: Publisher's Test Service
2500 Garden Road
Monterey, CA 93940

Description: 9 tests measuring: purchasing habits, budgeting, banking, job-related behavior, job search skills, home management, health care, hygiene and grooming, and functional signs. Administered orally, pretest included.

Population: MMH, MOMH, 7th grade and above

Name: STREET SURVIVAL SKILLS QUESTIONNAIRE (SSSQ)

Address: McCarron-Dial Systems
P.O. Box 45628
Dallas, TX 75245

Description: Measures adaptive behavior skills. 9 tests measure: basic concepts, functional signs, tools, domestic management, health and safety, public services, time, money, and measurement. Administered orally.

Population: MMH, MOMH

Name: TEST FOR EVERYDAY LIVING (TEL)

Address: Publisher's Test Service
2500 Garden Road
Monterey, CA 93940

Description: 7 tests measuring: purchasing, banking, budgeting, health care, home management, job search skills, and job-related habits. Administered orally.

Population: LD

Name: CAREER ADAPTIVE BEHAVIOR INVENTORY (CAB)

Address: Special Child Publication
4535 Union Bay Place NE
Seattle, WA 98105

Description: 120 behavior items covering academics, communication, interest, leisure, motor, responsibility, self concept, self help, socialization, and task performance. Score obtained through direct observation.

Population: All MR ages

Name: PREVOCATIONAL ASSESSMENT AND CURRICULUM GUIDE

Address: Exceptional Education
P.O. Box 15308
Seattle, WA 98115

Description: Assess worker behaviors, interaction skill, and self-help skills necessary for entry into sheltered employment. Scores obtained through direct observation.

Population: All MR, LD, ED

C. Work Values and Attitudes

Name: PROGRAM FOR ASSESSING YOUTH EMPLOYABILITY SKILLS (PAYES)

Address: Program of Vocational Education
Educational Testing Service
Princeton, NJ 08541-6736

Description: Measures 3 attitudes (job holding skills, attitudes towards supervision, self-confidence) 3 cognitive (job knowledge, job seeking skills/reasoning, vocational interest). Pictures, 4th and 5th grade reading level.

Population: High MMH, Deaf, LD, ED, Blind (mod), Disadv., 14 and older

Name: OHIO WORK VALUES INVENTORY

Address: The Psychological Corporation
757 Third Avenue
New York, NY 10017

Description: Designed to help high school students respond to job activities on a scale ranging from "like very much" to "dislike very much."

Population: Deaf, LD, ED, Blind, OH, Grades 8-12

Name: MINNESOTA IMPORTANCE QUESTIONNAIRE (MIQ)

Address: Vocational Psychology Research
Elliott Hall
University of Minnesota
Minneapolis, MN 55455

Description: Measures vocational reinforcer needs and compares to reinforcers available in job computer profile, ranking occupational groups in order of preference.

Population: LD, ED, Deaf, Blind (mod), MMH (mod), 5th grade reading level

Name: SELF-DIRECTED SEARCH

Address: Consulting Psychologist s Press
577 College
Palo Alto, CA 94306

Description: Self administered vocational exploration. Fill out booklet and obtain code. Look up jobs in an "Occupations Finder" booklet.

Population: LD, ED, OH, Deaf, MMH (mod)

Name: FORER VOCATIONAL SURVEY

Address: Western Psychological Services
12031 Wilshire Boulevard
Los Angeles, CA 90022

Description: Students complete sentences based on reactions to authority, co-workers, failure, taking orders, and responsibility, along with some vocational goals. Male and female forms.

Population: MR, LD, ED, Disadv.

II. MANUAL DEXTERITY TESTS

Name: GENERAL APTITUDE TEST BATTERY (GATB)

Address: Contact local State Employment Service

Description: 12 subtests, 8 paper and pencil, 4 involving apparatus measuring 9 aptitudes: general learning ability; verbal; numerical; spatial perception; motor coordination; finger dexterity; manual dexterity.

Population: Some EMR, Deaf, Blind and physical, LD, ED, grades 9 and above with 6th grade reading level

Name: BENNETT MECHANICAL COMPREHENSION TEST

Address: The Psychological Corporation
7555 Caldwell Avenue
Chicago, IL 60648

Description: Mechanical, measures mechanical reasoning. Student answers questions about a picture. 5th grade reading level.

Population: EMR (some), Deaf, LD, physical, ED, 5th grade reading or test can be read

Name: MINNESOTA CLERICAL TEST

Address: The Psychological Corporation
7555 Caldwell Avenue
Chicago, IL 60648

Description: Test speed and accuracy in clerical tasks. Two parts: number and name checking.

Population: EMR, Deaf, LD, ED, Physical

Name: BENNETT HAND TOOL DEXTERITY TEST

Address: The Psychological Corporation
7555 Caldwell Avenue
Chicago, IL 60648

Description: Manual dexterity with tools. Students use wrenches and screwdrivers to disassemble nuts and bolts, remove and replace on a board.

Population: All groups

Name: CRAWFORD SMALL PARTS DEXTERITY TEST

Address: The Psychological Corporation
7555 Caldwell Avenue
Chicago, IL 60648

Description: Fine eye-hand coordination using small tools. Two parts each with practice: 1) place pins in hole using tweezers and place collars over the pin, 2) with screwdriver put screws in place.

Population: All groups

Name: PENNSYLVANIA BI-MANUAL WORKSAMPLE

Address: Education Test Bureau
American Guidance Service
Publishers Building
Circle Pine, MN 55014

Description: Hand and finger dexterity. Two parts: assemble nuts and bolts; dissemble nuts and bolts.

Population: All groups ages 15 and older

Name: PURDUE PEGBOARD

Address: Science Research Associates
259 East Erie
Chicago, IL 60610

Description: Cross manual and finger dexterity. Pegboard with 4 cups and 2 rows of 25 holes in which pins are inserted in a timed period.

Population: All groups

Name: MINNESOTA SPATIAL OF MANIPULATION TEST

Address: American Guidance Service
Publishers Building
Circle Pines, MN 55014

Description: Arm-hand dexterity. Plastic colored discs are manipulated through several procedures: placing, displacing, turning one hand turning, and two hand turning.

Population: All groups

Name: MINNESOTA SPATIAL RELATIONS TEST

Address: American Guidance Service
Publishers Building
Circle Pines, MN 55014

Description: Spatial perception. Four boards with holes of various shapes. Place shapes in holes in all 4 boards.

Population: All groups

III COMMERCIAL SYSTEMS

Name: TRAINEE PERFORMANCE SAMPLE (TPS)

Address: NGG Associates, Inc.
Ideal Systems
West Allis, WS 53227

Description: Based on sheltered workshop type activities. Assesses kinds of training needed by measuring student on ver' .l, modeling, and prompt types of questions.

Population: All MR

Name: TALENT ASSESSMENT PROGRAM (TAP)

Address: Talent Assessment, Inc.
P.O. Box 5087
Jacksonville, FL 32205

Description: Based on occupational clusters of jobs. 10 tests assessing: structural and mechanical visualization; discrimination by size and shape;

discrimination by color; tactile discrimination; fine dexterity without tools; gross dexterity without tools; fine dexterity with tools; gross dexterity with tools; flowpath visualization; and retention of structural and mechanical detail. Approximate cost: $3,200.00

Populations: All except TMR

Name: VOCATIONAL EVALUATION SYSTEM (SINGER)

Address: New Concepts Corporation
Singer Career Systems
1802 Division Street
Morris, IL 60450

Description: 25 work samples in individual carrels. Work samples include: bench assemble, plumbing and pipe fitting, woodworking, cooking and baking, small engine service, medical service, cosmetology.

Population: All groups, MR, LD, ED, Disadv.

Name: MICROTOWER

Address: ICD Rehabilitation and Research Center
340 E. 24th Street
New York, NY 10010

Description: 13 work samples assessing major areas: verbal skills, numerical skills, clerical perception skills, motor skills, and spatial skills. Designed for group evaluation using taped instructions and an illustrated photo book. Cost is based on how many will be taking the test.

Population: EMR, LD, ED, Blind, High school and older

Name: MICRO COMPUTER EVALUATION AND SCREENING ASSESSMENT (MESA)

Address: VALPAR Corporation
3801 East 34th Street
Tucson, AZ 85713

Description: Evaluation using micro computers. Assesses: hardware use, computer assessment (perceptual, motor, visual, academic and reasoning skills), physical capacity and mobility, and vocational interests and awareness. Client performance is compared to requirements set by employers and to job clusters in the DOT.

Population: All groups