WORK ASSESSMENT INSTRUMENTS FOR THE VOCATIONAL EVALUATION OF PEOPLE WITH VISUAL DISABILITIES

Executive Summary

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INTRODUCTION

In American society, vocational choice is important. However, some members of society are limited in their career opportunities. People with visual disabilities have been restricted in their choices because others saw their disabilities as restricting their capabilities or because they limited themselves in the jobs they believed they could perform. Both the individual and the counselor must be aware of job alternatives and the individual's interests and abilities in order for the person with a visual disability to make informed vocational choices.

Arriving at a vocational choice requires collecting information about job history, administering vocational and psychological tests, and assessing skills through work samples and situational assessment. Data from medical, social, educational, vocational, and psychological sources are also incorporated into the final analysis. A thorough vocational assessment includes information about abilities; aptitudes; interests; personality; temperament; values; attitudes; motivations; needs; physical capacities; work tolerance; ability to be educated, trained, and employed; social skills; work habits; and work adjustment.

To be able to make assessments of current ability and predictions of work potential, vocational evaluators must understand both the job requirements and the individual's strengths and weaknesses. In addition, there must be room for individuals to convey their needs, interests, and preferences to vocational evaluators. Work assessment instruments are tools that the vocational evaluator can use to determine strengths, weaknesses, needs, interests, and preferences of clients with visual disabilities.

PURPOSE OF THE RESEARCH

The purpose of the research project is as follows.

1. Identify existing work assessment procedures, technology, and devices, including computerized job-matching systems, that can be reliably and validly used in their present format by education and rehabilitation professionals working with people with visual disabilities.
2. Identify modifications to current work assessment instruments to provide vocational assessment information for people with visual disabilities.
3. Identify norm development, reliability, and validity needs of existing procedures, technologies, and devices as applied to people with visual disabilities.
4. Identify career options for people with visual disabilities for which work assessment instruments are not available.

SOURCES FOR WORK ASSESSMENT INSTRUMENTS

In locating work assessment instruments for

the *Work Assessment DataBase (WADB)* (McBroom, Seaman, & Freeman, 1987) and *Computerized Job-Matching Systems: A Resource Guide* (Seaman & McBroom, 1987), the authors consulted *The Ninth Mental Measurements Yearbook* (Mitchell, 1985), *Tests: A Comprehensive Reference for Assessments in Psychology, Education and Business* (Sweetland & Keyser, 1983), the three volumes of *Test Critiques* (Keyser & Sweetland, 1984-1985), and *Tests: Supplement* (Sweetland & Keyser, 1984). Companies publishing work samples, computerized job-matching systems, and other work assessment technologies were contacted and asked to provide information on their products. Information gathered in a survey of vocational evaluation services was reviewed for additional currently used work assessment instruments (Simpson, 1986). *A Comparison of Commercial Vocational Evaluation Systems* (Botterbusch, 1982), *Work Samples and Visually Impaired Persons: A State-of-the Art Review and Resource Manual* (Peterson, Capps, & Moore, 1984), and *A Comparison of Computerized Job Matching Systems* (Botterbusch, 1983, 1986) were also reviewed.

WORK ASSESSMENT DATABASE

From these sources the *Work Assessment DataBase* (WADB) was compiled. The WADB lists many of the currently available work assessment instruments, techniques, and information. The WADB is not intended as a list of all work assessment instruments, but it contains an extensive list of currently available products. The WADB does not contain interest inventories, achievement tests, or intelligence tests. The WADB is limited to tests and work samples falling under the general heading of work assessment instruments; that is, tests of specific work abilities, skills, or traits.

The WADB is a computer software package which lists a wide variety of work assessment instruments, many of which have been adapted for use by persons who are blind or visually impaired. The records contained in WADB are stored on three floppy disks. One disk contains information on work assessment instruments which have either been designed or modified for use by persons with a visual disability. The other two disks contain information about work assessment instruments that have the potential for being used by persons with a visual disability if certain suggested adaptations are made. Each test record contains information on the test name, year of development, test group, test distributor's name and address, author, purpose of assessment instrument, tasks performed during assessment, paper and pencil or performance format, reliability, validity, norm group, suggested adaptations for persons who are blind or visually impaired, cost, and list of materials. An indexing system is also included which cross-references the database disks with a printed index which groups tests by occupations and worker traits (McBroom et al., 1987).

The WADB is intended to be used by vocational evaluators in the identification of work assessment instruments and procedures which provide reliable and valid information for the development of Individualized Written Rehabilitation Plans (IWRP), Individualized Education Programs (IEP), and Individualized Transition Plans (ITP). Potential users include the manufacturers of work assessment instruments, university preservice educators, state agency staff development personnel, and rehabilitation continuing education professionals.

COMPUTERIZED JOB-MATCHING SYSTEMS

Computerized job-matching systems provide a link between a client's needs, abilities, and interests and the specific demands and/or requirements of an occupation. The linkage is made through a computer program following input of client descriptive data and assessment scores. Most of the 19 computerized job-matching systems reviewed by Seaman and McBroom (1987) in *Computerized Job-Matching Systems: A Resource Guide* were developed from the U.S. Department of Labor's (DOL) occupational database.

Vocational evaluators can use these computerized job-matching systems to explore possible job opportunities for their clients. However, they must be critical in their approach to these systems because of two basic limitations

contained in the DOL database. There are content limitations in the DOL database due to limitations in the sample selection, limitations in data quality, and limitations surrounding the reliability and validity of worker function and worker trait ratings. Process limitations occur when the computerized job-matching systems exclude from consideration occupations which incorrectly identify vision as a requirement for performing the job.

Categories contained in the review of computerized job-matching systems compiled by Seaman and McBroom (1987) include the system author; year of development; the publisher's name, address, and phone number; cost of the system; computer hardware requirements; training requirements and support; the degree of computer literacy required; utilization of standardized data entry forms; estimated time for a typical job match; availability of consultation from the publishers; system input criteria; tests used in conjunction with the system; system output information; the effect of missing data; possibility of modifying and/or saving client profiles; possibility of setting up local databases; the number of DOT job titles in the database; designated users of the system; possibility of using the system for self-exploration and/or job searches; responsiveness to the needs of clients who are visually disabled; crossover with *WEVD: Work Environment Visual Demands* (Graves, Maxson, Adkisson, Takacs, & Smith, 1987); and method of acquiring output.

IMPLICATIONS

Work assessment instruments for persons with visual disabilities should be developed for jobs that have the potential for growth.

Work assessment instruments available for persons with visual disabilities are primarily assembly, sorting, and dexterity tests. These tests represent low paying, production assembly jobs (Bauman, 1975; Peterson et al., 1984). The state-of-the-art of work assessment instruments for persons who are visually disabled is especially incongruous considering the wide range of fields in which people who are visually disabled are successfully employed. A number of researchers (e.g., Kirchner & Peterson, 1979; Giesen et al., 1985); reported individuals with visual disabilities to be successfully employed across all occupational levels.

Occupations having the largest absolute growth for the years 1986 to 2000 are predicted to be retail salesperson, waiter/waitress, nurse, janitor, general manager, cashier, truck driver, office clerk, food counter worker, and nursing aide (Bernstein, Anderson, & Zellner, 1987). Bernstein et al. (1987) found that the jobs with the fastest growth rates are paralegal, medical assistant, physical therapist, physical therapy aide, data processing equipment repairperson, home health aide, systems analyst, medical records technician, employment interviewer, and computer programmer. Work assessment instruments for many of these occupations are unavailable and should be developed to assist persons with visual disabilities in choosing careers.

Norms should be developed to reflect the heterogeneity of persons with visual disabilities.

When the content or administration of a work assessment instrument is altered, the test no longer delivers standardized results (Lorenz, 1975; Scholl & Schnur, 1975). The norms developed for the original population may not be used with the same meaning once the method of administering the test or performing a task has been altered. Of the work assessment instruments summarized in the WADB (McBroom et al., 1987), 48 were located that were developed or adapted for people with visual disabilities. Only 13 of the 48 contain information on norms, reliability, or validity.

Even when work assessment instruments have been standardized with a population who is visually disabled, the potential usefulness is weakened by dependence on small, biased, or heterogeneous (mixed or varied) populations (Bauman, 1974; Malikin & Freeman, 1970; Rusalem, 1970; Scholl & Schnur, 1975). Persons with visual disabilities differ greatly in their ability to function in the workplace. Norms for "25 blind people" may not show the diversity of experiences and abilities due to adventitious or congenital onset, amount and type of education, the presence of support groups, differing abilities

in using any remaining vision, fluctuation in vision, and the presence of additional disabilities. These and other factors will likely make the "25 blind people" in the norm group totally different from the person who is being tested.

Vocational evaluators need training in making adaptations in available work assessment instruments.

When using currently available work assessment instruments, the examiner must determine the degree of test failure that can be attributed to impaired visual functioning and the degree that can be attributed to the inability to perform the task (Scholl & Schnur, 1975). Frequently, this is accomplished through the use of adaptive assessment tools and methods which attempt to compensate for the visual loss (Bauman, 1975; Scholl & Schnur, 1975). Many available work assessment instruments pay inadequate attention to the visual demands of the job or to modifications which might be used to enhance the productivity of persons who are visually disabled (Miles, 1984). The modifications used with clients who are visually disabled vary greatly depending upon the degree and nature of the visual acuity; the age and rate of onset of the visual impairment; the development, education, and social history of the individual; the test-taking ability of the client; and the presence of any additional handicaps.

Modifications made to the work assessment instruments are often transferable to the workplace. If the assessment instrument accurately reflects the job, modifications made in the testing situation will transfer to the worksite. Vocational evaluators should be aware of the potential with which modifications and accommodations can be used both in the assessment environment and on the job.

Vocational evaluators need training in interpreting results in ways that facilitate the career development of persons with visual disabilities.

The vocational evaluator must understand the limitations of work assessment methodology when applied to particular groups of people. Work samples are potentially inaccurate because they operate in a sterile environment. The work sample's resemblance to actual job tasks is no assurance that predicted performance is accurate. It cannot duplicate social interactions with coworkers, temperature extremes of heat or cold, noise distractions, motivation, or wage incentives which can all affect performance on the job. For adults with a recent visual disability, these tests may produce extreme anxiety because of the feelings associated with the loss of employment. While work samples give an indication of how a person performs under pressure at a given point in time, they do not measure how learning takes place under more normal situations (Olshansky, 1975). This is an important area for vocational evaluators because many people with visual disabilities begin at a low rate of speed and then show improvement on repeated tasks.

Many of the work evaluation instruments use norms derived from client, nonindustrial groups, or other groups that the evaluator may want to use for comparison. "Industrial worker norms" are based on experienced industrial workers. This means that people with visual disabilities with very little work experience in a particular industrial setting are being compared with experienced sighted workers with a higher performance rate. People with visual disabilities who are seeking first time employment should be compared with the norms of industrial applicants or beginning industrial workers, not experienced workers.

Vocational evaluators should be able to compare the results of the person with a visual disability in ways that facilitate the potential employment of that person. For example, if the norm group contains experienced employed workers, then the evaluator should interpret the results in ways that allow for the possible inexperience of the person with a visual disability.

Computerized job-matching system database structures should be modified to facilitate job matches relative to the degree of visual ability.

Most computerized job-matching systems are based on database structures which treat the visual demand requirements of a job in an all or none fashion. Fine distinctions among various

levels of visual ability are not accessible using these databases. This results in computerized job-matching systems which assume that the client with low vision has no residual visual ability. Accordingly, the database is screened and jobs are selected based on faulty assumptions of the need for visual ability.

Vocational evaluators may deal with this problem by either ignoring input criteria which focuses on visual performance abilities or inputing information into the job-matching formula to suggest that the client has good vision. The subsequent output must then be manually screened by the vocational evaluator to determine which jobs could actually be modified to meet the needs of the client.

Computerized job-matching systems should be used to explore vocational areas and to create vocational choices.

Computerized job-matching systems should be used to explore and to expand the vocational evaluation process for persons with visual disabilities. Their content and processing limitations should be understood and strategies designed to moderate these limitations. Because of these limitations and short-comings, computerized job-matching systems should be used for career exploration, not for choosing a specific vocational goal.

Computerized job-matching systems are only one component in the vocational evaluation process.

Computerized job-matching systems have the potential to expand the vocational evaluation process because of the speed and precision with which they operate and the large databases that they can access. Their use can contribute to greater efficiency and to the identification of a broad base of career options for people with visual disabilities; however, the use of computerized job-matching systems must be balanced with traditional vocational evaluation techniques. Information on work histories, educational background, skills, knowledge, interests, and the presence of other disabilities should be included in the vocational evaluation process.

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