

**CAREER/VOCATIONAL ASSESSMENT IN THE
PUBLIC SCHOOL SETTING: THE POSITION
OF THE DIVISION ON CAREER DEVELOPMENT**

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ABSTRACT: The area of career/vocational assessment is one of critical importance to the preparation of handicapped individuals for productive roles as citizens and workers. The purpose of this paper is to present the position of the Division on Career Development (DCD) of the Council for Exceptional Children. This paper was prepared by members of the DCD Committee on Career/Vocational Assessment and endorsed by the Executive Committee of the division. The following areas will be discussed:

(a) the definition, purpose, and goals of career/vocational assessment; (b) the assessment process and methods utilized in this process; and (c) the personnel involved in the assessment process.

**Definition, Purpose, and Goals of
Career/Vocational Assessment**

The establishment of an operational definition and purpose of assessment is basic to the other issues to be discussed in this paper since it determines to a great extent the methods and process to be used and the personnel to be involved in the assessment process. DCD 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 advocational activities that are of benefit to oneself and/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 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 Plan (IEP) 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/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 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 specific training program.

Process and Methods

The Division on Career Development advocates for 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 divisions are being made relative to the career preparation on the handicapped individual.

DCD does not endorse any specific model or location for implementing the career assessment process. Whether it be done in the classroom setting or in vocational assessment center or mobile assessment laboratory, the results can be equally valid. DCD 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 life-long career development of the handicapped individual. DCD 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.

DCD does not advocate specific methods for obtaining assessment infor-

mation but endorses the following concepts in the selection of methods and instruments. 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 utilize 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 environment and/or living environment of the handicapped individual. Finally, the assessment process should incorporate a sequence of assessment extended period of time.

Personnel in the Career/Vocational 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 attention from professionals in the area.

DCD 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 and/or vocational special needs education when working at the secondary level. Vocational special needs and rehabilitation personnel should assume primary responsibility at the post secondary level. This does not mean that counselors, school psychologists, rehabilitation personnel, other teachers and support personnel, administrators, parents, and employers should not be involved in the process. It does mean, however, that the role of coord-

inating the career assessment process should be restricted to the professional primarily responsible advocate(s) for the learner's career development at any particular stage in the educational process.

DCD 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 post-secondary level should demonstrate background/training that meets the minimal standards of preparation in the area of vocational evaluation. DCD recommends that such preparation be based on demonstrated competency or successful completion of training in competencies such as the following:

(a) analysis of entry level competencies needed in the career development program;

(b) implementation of job analysis procedures;

(c) identification and selection of assessment procedures appropriate for students at various age and functioning levels;

(d) selection and administration of appropriate assessment instruments;

(e) construction of rating instruments for situational assessment and other behavior observations related to all career roles;

(f) integration and interpretation of assessment data;

(g) application of assessment data to instructional programs within the school setting.

DCD reiterates its commitment to work closely with vocational education, rehabilitation and school psychology personnel to integrate standards for public school personnel who are coordinating the career assessment process into those developed by the Commission on Certification of Work Adjustment and Vocational Evaluation Specialists (CCWAVES).

Summary

In summary the Division on Career Development defines career assessment as a developmental process which begins at the elementary level and continues 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 a productive family member, citizen, and participant in leisure, recreational, and avocational activities that are of benefit to oneself and/or others. DCD does not advocate a specific model, setting, or methods 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.

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**LEVELS OF WORKER FUNCTIONS CLAIMED
BY VALPAR FOR ITS WORK SAMPLES COMPARED
TO THOSE DETERMINED THROUGH JOB ANALYSIS
OF THE WORK SAMPLES**

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ABSTRACT: Work samples constitute an important part of many vocational evaluations. The use of many commercial systems including Valpar, has expanded to a variety of settings outside the traditional rehabilitation center or sheltered workshop. For example, they are now being used in educational institutions, hospitals, and private evaluation units. Work vocational factors, either specific jobs, specific traits or clusters of traits. This study examines some aspects of the vocational basis of the Valpar Component Work Sample Series.

Each of the Valpar work samples states that it was developed in in relationship to job requirements and worker trade arrangement data in the Dictionary of Occupational Titles. Most of the work sample manuals state that the work sample is related to and apparently measures the client's ability to work with data, people, or things at a given level. This study examines this contention by comparing how closely the recommendations of data, people, or things level that Valpar claims for each work sample correspond with the actual level of data, people or things that the work samples measure and determined through job analysis.

Job analysis, using the standardized procedures and definitions contained in the Handbook for Analyzing Jobs was conducted on each of the sixteen Valpar Work Samples. The complete schedule was completed for each to

data, people or things. The values for worker functions as determined through job analysis were than compared with the worker functions claimed for each work sample by Valpar.

Agreement between the two sources of worker functions levels varies widely among the various work samples. Work Sample Fifteen is the only one where the highest DPT levels completely match. In all the others, at least one of the others given by the Valpar is higher than found by job analysis. Work samples Ten, Thirteen, and Sixteen are close to each other on most values. For the other work samples, the two measures vary more the Valpar Work Samples are not involved with people above the eight or taking instructions level.

The given vocational basis of the Valpar Work Samples is not validated by this study. Most of the work samples do not appear to measure the complexity of worker functions that Valpar maintains. The specific job recommendations that accompany most work samples are also in question. In the case of Valpar and probably for evaluation in general at present, hardware will not substitute for the professional competence of the evaluator. The skillful evaluator can definitely determine whether a client is likely to be able to perform at higher worker functions than those claimed in the Valpar work Samples by observing and analyzing the client while he takes the work samples.

Further research definitely needs to be done on the vocational basis of the Valpar Work Samples. The evaluator who uses the work sample system definitely needs to have a valid basis for making vocational recommendations. The one presented by Valpar does not appear to be valid in most cases for the aspects that have been examined in this study.

Work samples constitute an important part of many vocational evaluations. Their purpose is usually stated to be either the assessing of abilities

in one or a cluster of traits that are vocationally significant or the assessment of individual for success in a given job. Relating work samples to jobs and vocational information found in the Dictionary of Occupational Titles (DOT) (1977). This study examines selected vocational aspects of one major work sample system, the Valpar Component Work Sample Series.

Each of the 16 Valpar Work samples states that it was developed in relationship to the job requirements and worker trait arrangement data in the DOT (1965). Most work sample manuals state that work samples are related to and apparently measure client ability to work with data, people, or things at a given level. This study will examine this contention.

Statement of Problem

This study seeks to examine how closely Valpar work sample claims regarding or things correspond with the levels of data, people, or things, determined through job analysis associated with the work samples determined through job analysis.

Definition of Terms

The DOT (1977) lists and describes 12,099 occupational titles, each assigned a nine digit code. The first three digits identify the occupational categories, divisions, and groups into which specific titles are assigned. The last three digits identify the frequency of the titles, in alphabetical order, which have the same first six digits. The middle three digits identify the relationship that the title has to data, people, and things (DPT). The lower a DPT digit is, the more complex is the functioning of the occupational title for the particular attribute. Each level of a DPT digit is assumed to potentially include all the functions in the particular category for each of the lower levels. See the Handbook for Analyzing Jobs

(1972) for more information about the DPT concept.

Job analysis is a systematic procedure as defined by the U.S. Department of Labor to identify, classify, and record the significant characteristics of an individual job. These factors include: Worker functions (DPT), description of tasks, general educational development, specific vocational preparation, aptitudes, temperaments, interests, physical demands, environmental conditions, and the like. (U.S. Labor Dept., 1972).

Review of the Relevant Literature

The only materials directly related to the DPT structure of the Valpar work samples are the manuals that have been published for each work sample. Each manual contains a description of the occupationally significant characteristics that the work sample is supposed to measure, i.e. the type of jobs or physical capacities that are directly related to the work sample. Valpar maintains that the job characteristics it details for each work sample are derived from the DOT (1965) but does not explain how this information was derived or give specific rationale for its inclusion. Most manuals say that the work sample best relates to jobs dealing with data, people, or things at a given DPT level. Certain work samples (numbers 4, 9, and 14) are said to measure physical factors or other specific attributes from the DOT (1965), such as preference for dealing with people. These work samples are said to not be as closely tied to DPT functions as the others. Most manuals also give a description of work performed and worker requirements of jobs that are said to be closely related to the work sample. Examples of specific occupations that are said to be primarily related to the work sample and related worker trait groups are usually given for each work sample.

The reader is referred to Botterbusch (1980) pp. 74-78 for a general assessment of Valpar work samples, and to the various Valpar manuals for detailed information about the administration of the work samples.

Data Analysis Technique

Using the standardized procedures and definitions contained in the Handbook for Analyzing Jobs (1972) job analysis was conducted on each of the 16 Valpar Work Samples. The complete schedule was completed, but this presentation will only consider worker functions - relationship to data, people and things. The job analysis was accomplished using a combination of the author's personal knowledge about the work sample procedures and the instructions contained in the work sample manual. A client was not observed performing the actual work sample, but the author has several years experience in administering the Valpar work samples and is thoroughly familiar with their operation.

Due to space limitations, only two of the Valpar work samples will be considered in detail, number 1 and 10. First, the operation involved in each work sample will be summarized. Then, the level of worker functions (DPT) claimed by Valpar will be compared to the levels determined by job analysis. It should be noted that Valpar expresses DPT in terms of the classification used for third edition of the DOT. For this analysis, the DPT codes have been converted to that used in the fourth edition of the DOT.

Data Analysis

Valpar Work Sample #1 - Small Tools (Mechanical)

The manual of this work sample states that it measures a person's understanding of, and ability to work

with, small tools. It is also said simulate many of the awkward working situations facing a person using small tools on the job (Valpar, 1974, P. 1., a).

In this work sample, the client uses screw drivers, pliers, nut drivers and wrenches to assemble and remove screws, hitchpins, nuts, bolts, washers, and the like attached to the sides of a hinged, five-sided work box with a hole in front for the client to work through. The work box is closed for assembly and opened for disassembly. Assembly is accomplished in sections. The evaluator gives the client detailed instructions about the hand tools to be used for each section, the parts to be assembled, and the arrangement that the parts will assume. The client is also provided with a diagram which shows, section by section, the same information. After the client has assembled all of the parts, he is required to disassemble the parts using the correct hand tools. The client again has the diagram for a guide.

Valpar maintains that this work sample best relates to jobs dealing with "data" and "things" at the 281, 381, 681, and 684 levels (Valpar, 1974, p. 2., a).

"Data" is determined by job analysis to be at the 6 or Comparing level. The client is only required to deal with readily observable characteristics. The client can compare the hand tools and arrangement of parts pictured on the diagram with that in his assembly. There is also an example of each correctly completed assembly, except for one of the sections, in the work box. For the disassembly section, the client can again compare the hand tools on the diagram for each section with those that are chosen for disassembly.

"People" is determined by job analysis to be at the 8 or Taking Instructions-Helping level. Almost all of the work sample has to "people"

is that the client is required to take instructions from the evaluator to accomplish the proper procedure.

"Things" is at the 4 or Manipulating level. The client is required to use a variety of hand tools in this work sample and has to exercise some latitude for judgement in regard to the precision attained. The client, however, can readily do this by consulting the diagrams and examples that are provided, and a higher level for "things" does not appear to be justified.

The author agrees that this work sample does require dexterous use of hand tools, but does not see how it could be considered as measuring higher than 6 for "data" and 4 for "things". The author does think that this is a useful work sample for assessing physical aptitudes such as motor coordination, manual dexterity, and finger dexterity, and that this is what should be looked for in work sample performance rather than the ability to work with "data" or "things" at higher levels than stated previously.

Valpar Work Sample #10 - Tri-level Measurement

This work sample is said by the manual to measure a client's ability to perform very simple to very precise inspection and measurement tasks and to evaluate a client's decision making ability (Valpar, 1974, p. 1., b). This work sample is said to best relate to those jobs dealing with "data" and "things" at the 280, 281, 381, 687, 681, 682, 684, 685, and 686 levels (Valpar, 1974, P. 2., b).

For this work sample, the client is working with a series of metal pieces that were tooled on an automatic lathe. The client is to follow a precise series of inspection steps that are explained by the evaluator and outlined on a series of diagrams. The inspection progresses from visual to using various jigs, a ruler, micrometer, and vernier caliper to determine

if the pieces meet certain precise standards. If at any point during the inspection a piece does not meet the standard, it is deposited in a box labeled for that error. There are nine separate inspection tasks in the work sample. The client is first given detailed instructions including description of the use of various measuring devices. The client is then given a chance to practice the procedure using a series of metal pieces that include examples of all the errors. After the practice section, the evaluator points out any errors that were made. The client then does the main part of the work sample.

Job analysis shows that this work sample requires the use of "data" at the 2 or Analyzing level. The client is required to be constantly examining and evaluating data and dealing with this data on a rather complicated level which requires the taking of alternative actions depending upon perception of the data.

For this work sample, the client is again required to deal with "people" at the 8 or Taking Instructions-Helping level. The client is required to follow instructions given by the evaluator.

In this work sample, the client deals with "things" at the 1 or Precision Working level. The client is required to use complicated and precise measuring devices, such as the micrometer and vernier caliper. Adjustment of these tools is essentially up to the client and requires the exercise of considerable judgement.

The worker function levels in this work sample as maintained by Valpar are close to those determined by job analysis. Both agree that the work sample will measure "data" at the 2 or analyzing level. Valpar says that it will measure "things" at the 0 or Setting-up level but job analysis found components up to the 1 or Precision Working level.

Summary and Conclusions

Table 1 summarizes the results of the analysis. Worker function levels obtained from job analysis are contrasted with those presented by Valpar. The agreement between the two sources varies widely among the various work samples. Work sample #15 is the only one where the highest levels completely match. In all the others, at least one of the levels given by #16 are close to each other on most values. For the other work samples, the two measures vary more widely. It should especially be noted that except for work sample #14, the Valpar work samples are not involved with "people" above the 8 or Taking instruction-Helping level.

The given vocational basis of the Valpar work samples is not validated by this study. It is somewhat difficult to assess vocational aspects of this work sample system because Valpar gives essentially no information as to how it was derived other than to say that it came from the DOT. Most of the work samples do not appear to measure the complexity of work functions that Valpar maintains. The specific job recommendations that accompany most work samples are, therefore, also in question. In the case of Valpar and probably for evaluation in general at present, hardware will not substitute for the professional competence of the evaluator. The skillful evaluator can definitely determine whether a client is likely to be able to perform higher worker function than those inherent in many Valpar work samples by observing and analyzing the client while he takes the work samples.

Further research definitely needs to be done on the vocational basis of the Valpar work samples. The evaluator that uses the work sample system needs to have a valid basis for making vocational recommendations. The one presented by Valpar does not appear to be completely

valid in most cases for the aspects that have been examined in this study.

Appendix

LIST OF VALPAR WORK SAMPLES

Work Sample #1-	Small Tools (Mechanical)
Work Sample #2-	Size Discrimination
Work Sample #3-	Numerical Sorting
Work Sample #4-	Upper Extremity Range of Motion
Work Sample #5-	Clerical Comprehension and Aptitude
Work Sample #6-	Independent Problem Solving
Work Sample #7-	Multi-Level Sorting
Work Sample #8-	Simulated Assembly
Work Sample #9-	Whole Body Range of Motion
Work Sample #10-	Tri-Level Measurement
Work Sample #11-	Eye-Hand-Foot Coordination
Work Sample #12-	Soldering and Inspection
Work Sample #13-	Money Handling
Work Sample #14-	Integrated Peer Performance
Work Sample #15-	Electrical Circuitry and Print Reading
Work Sample #16-	Drafting

Table 1

Levels of Work Functions Claimed by Valpar for its Work Samples
Compared to those Determined by Job Analysis

Work Sample	By Valpar			From Job Analysis		
	Data	People	Things	Data	People	Things
Number 1	2*	8	1*	6	8	4
	3	8	1			
	6	8	0			
	6	8	1			
	6	8	4			
Number 2	6*	8	4*	6	8	4
	6	8	1			
Number 3	4*	8	4*	6	8	4
	4	8	5			
	5	8	4			
	5	8	7			
	6	8	4			
	6	8	5			
Number 4						
		N/A		6	8	6

*Categories that Valpar says are most closely related to the work sample.

Table 1 (cont.)

Work Sample	By Valpar			From Job Analysis						
	Data	People	Things	Data	People	Things				
Number 5	1*	3*	7*	3	8	2				
	2	6	7							
	2	8	7							
	3	6	7							
	3	8	7							
	5	8	7							
	4	6	7							
	6	6	2							
Number 6	1*	3	7	6	8	4				
	3	6	7							
	3	8	7							
	4	8	7							
	5	8	7							
	6	4	7							
	6	8	7							
	6	8	4							
Number 7	2*	8	1*	6	8	4				
	2	8	2							
	3	8	1							
	3	8	2							
	3	8	3							
	4	8	3							
	6	8	4							
	2	5*	7							
	2	7	1							
	3	5	7							
	3	7	1							
	4	5	6							
	4	7	7							
	Number 8	6	8				5*	6	8	6
6		8	6							
6		8	7							
Number 9	N/A			6	8	7				
Number 10	2*	8	0*	2	8	1				
	2	8	1							
	3	8	1							
	6	8	7							
	6	8	1							
	6	8	2							
	6	8	4							
	6	8	5							
	6	8	7							
	Number 11	2	8				1*	6	8	3
3		8	0							
3		8	1							
6		8	2							
6		8	3							
6		8	5							
Number 12	2*	8	1*	6	8	4				
	6	8	1							
	6	8	4							
Number 13	1*	6*	7	1	8	7				
	2	6	7							
	3	6	7							
	2	8	7							
	3	8	7							
	4	6	7							
	4	7	7							
Number 14	N/A			1	3	3				
	Number 15	2*	8				1*	2	8	1
		3	8				1			
6		8	4							
6		8	7							
Number 16	2*	8	1*	2	8	1				
	1	8	7							
	1	6	7							

*Categories that Valpar says are most closely related to the work sample.

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