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ABSTRACT

Four commercially available work evaluation systems are compared using a standardized outline: development, organization, work evaluation process, administration, scoring and norms, observation of clients, reporting utility, training in the system, technical considerations, reviewer's summary and comments, address, cost, and references. There are four sections: (1) a brief paper listing factors to be considered in selecting a commercial evaluation battery for such tools as on-the-job evaluations, sheltered employment, work samples, and psychological tests for asessing clients' potential; (2) an explanation of the fourteen major points (criteria) in the outline; (3) a table presenting brief comparison of the four systems on the first ten points (points 11-14 not appropriate to summarize); and (4) more detailed description of each system including reviewer's comments, address, cost, and references. The four systems covered are Comprehensive Occupational Assessment and Training System (COATS), Hester Evaluation System, Micro-TOWER, and Vocational Information and Evaluation Work Samples (VIEWS). Seven older systems are compared in a separate document using the same format (see Note). (JT)

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A Comparison of Four Vocational Evaluation Systems

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INTRODUCTION

In December, 1971, Dr. Dennis Dunn published a "Comparison of the JEVS, Singer/Graflex and TOWER Work Evaluation Systems." This paper, reprinted by the Materials Development Center as Reprint Series No. 5, has been disseminated to thousands of individuals. Since 1971, new commercial vocational evaluation systems have been developed and older ones revised, making this original comparison out-of-date. In February, 1976, MDC published A Comparison of Seven Vocational Evaluation Systems. This publication compared the JEVS, McCarron-Dial, Singer, TAP, TOWER, Valpar, and WREST using a standardized outline based on the Reprint Series No. 5 and the MDC sound-slide presentations in the Orientation to Work Evaluation Batteries Series. When this publication proved to be very successful, the next logical step was to prepare a new publication containing information on four systems that were developed after the original comparison was printed. Thus, this publication uses the same format to compare the COATS, Hester, Micro-TOWER, and VIEWS.

The purpose of this publication and its predecessor is to present a reasonably objective comparison of vocational evaluation systems. In preparing this comparison, manuals, technical reports, and related publications were used to obtain information about each system. It is hoped that this publication and the original comparisons publication will be used as a guide for potential purchasers so that they can examine each system in light of their own needs. Facilities considering the purchase of any system should not only talk with vocational evaluators in facilities who are using a system, but should also see the system in action prior to making a final decision.

This publication contains four sections. The first is an edited reprint of an article on how to select a commercial vocational evaluation system (Botterbusch and Sax, 1977); this article is based on the introduction to the earlier comparison publication. The second is an explanation of the 14 major points contained in the outline. The third section is a table which presents a very brief comparison of the four systems on the first ten points in the outline (Points 11 through 14 are not presented because of redundancy or not being appropriate to summarize). The fourth section contains a more detailed description of each vocational evaluation system, including reviewer's comments, address, cost and references.

Two final comments are necessary. First, because most systems are constantly being revised, expanded, and updated, the potential user should contact the manufacturers for the most recent information. Second, for those who desire additional information, the Materials Development Center has a sound-slide presentation on each of the vocational evaluation systems described in this publication and in the previous comparisons publication. (Those interested in the sound-slide presentations should write MDC for a brochure describing this series.)

Karl F. Botterbusch, Ph.D.
August, 1977

NOTE

There are two separate MDC publications comparing vocational evaluation systems. These are:

A Comparison of Seven Vocational Evaluation Systems	$1.50
A Comparison of Four Vocational Evaluation Systems	$1.00

If you order additional copies of one or both of these publications, please specify the exact title when ordering and note the difference in prices.

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SOME CONSIDERATIONS FOR THE SELECTION OF A COMMERCIAL VOCATIONAL EVALUATION SYSTEM

Over the years many people have contacted the MDC for advice concerning the most appropriate vocational evaluation system to purchase for their facility. This section was prepared in response to these requests and will outline some of the factors to be considered prior to purchasing a commercial vocational evaluation system. The evaluator has at his disposal many tools for assessing client potential (Task Force No. 2, 1975). These tools fall within one of the following four categories:

1. On-the-Job Evaluations - These are situations in which the client is assessed in one or more of a variety of real work situations including: job site situations in industry, trial training evaluation in a training program, and simulated job stations within the facility.

2. Sheltered Employment - This offers the evaluator an opportunity for assessing the client under working conditions that should be similar to those found in competitive employment.

3. Work Samples - There are four types of work samples according to their degree of correspondence with actual jobs: actual job samples, simulated job samples, cluster trait samples, and single trait samples.

4. Psychological Tests - These include an almost endless variety of paper-and-pencil and apparatus techniques for measuring traits, abilities, and related characteristics of an individual.

Faced with the need to equip and administer a vocational evaluation unit, many untrained and inexperienced evaluators feel that the purchase of a commercial evaluation battery will solve their problems. The evaluator should analyze a number of factors in deciding how to equip the evaluation unit and then carefully investigate all the tools listed in the above categories to determine the ones that will provide him with the best methods to adequately assess his clients.

The first area of consideration is the relationship between the community and the vocational evaluation unit. The evaluator must carefully investigate the range and type of jobs that are available in the local labor market. Thus, a small rural facility or a facility in a one industry community will most likely have a narrower range of job evaluation stations than a facility in an urban area. Labor market information can be obtained through vocational surveys, local employment offices and agencies, and client placement records. Once potential employment opportunities have been determined, intelligent decisions can be made on what type of evaluation tools can best assess these demands.

Because the evaluation outcomes may not result in immediate placement, it is also necessary to investigate the training opportunities available for clients and these should also be reflected in the selection of evaluation tools. A client's range of occupations widens and his chances for upward

mobility are frequently increased as a result of training. The presence of an area vocational-technical school, private trade and business schools, on-the-job training programs, apprenticeship programs, and even higher education should be reflected in the evaluation unit. Vocational evaluation techniques covering a wide variety of occupational areas and assessing the full range of client aptitudes and interests are needed if the facility is in an area where many employment and training opportunities are available.

The second consideration is the client population. Some evaluation units must be capable of serving clients with all types of mental, physical, psychological, and cultural disabilities. Other facilities restrict themselves to serving either a single disability or a small number of disabilities. A facility dealing with many types of handicaps would generally need to have techniques covering the entire range of occupational areas and skill levels within these areas. A facility providing services to a single disability group could safely limit its evaluation areas. For example, a facility serving only mentally retarded clients could realistically avoid evaluation for occupations that require a great deal of formalized training or higher education. Some systems claim to have been designed specifically for a particular level of client functioning. When selecting evaluation tools, keep in mind the type of clients served since it would be a waste of time to assess a client for a job he could not fill because of his handicap. At the present time, all commercial vocational evaluation systems are designed for persons who can see and hear and contain no special instructions or modifications for the blind or deaf. The evaluator should be aware that he frequently will have to make modifications in commercial work samples so that they meet the special needs of his clients (Botterbusch, 1976(b); Dickson, 1976). In summary, if an evaluator is considering a commercial evaluation battery, he should check the battery against the needs of the client population served and then decide: (1) whether the system is designed for the target disability group(s), or (2) whether other evaluation techniques would be more appropriate.

The third area to be considered is the purpose of evaluation. Although all vocational evaluation techniques should provide career information, a particular technique may either emphasize occupational information by providing a hands-on experience or it may emphasize the assessment of present skills and aptitudes without relating it to career information. Some systems attempt to provide a thorough evaluation of the client's aptitudes and work behaviors; others provide occupational information and experience, often at the expense of a thorough ability assessment. The evaluator should check the final report format to determine exactly what information it contains; this goes a long way in determining the purpose of a particular system. The evaluator must first decide what needs to be included in these areas and then attempt to find or develop the evaluation tools that best fit the client's needs. A system should never be purchased to "fit in somewhere."

The fourth area of concern is perhaps the most basic--why even purchase a commercial evaluation system at all? All of the systems are relatively expensive; some are very expensive. None will probably meet the individual needs of a facility in terms of community jobs and training, client populations, and purpose of evaluation. A facility could develop its own evaluation unit based on job or work samples taken from local industry. This would make evaluation very realistic for the client, staff, and even for a potential employer. Additional work samples could be developed from existing subcontracts in the workshop. This method not only will assess the areas in which the client has his maximum functions and interests, but also the areas

of the shop that would best fit the client. In addition, the client would receive training on the work performed in the workshop. Then, when the client is transferred from the evaluation unit, he or she will be familiar with the subcontract, which should alleviate the need for the supervisor to train the client from "scratch."

The development of a work sample is expensive in terms of staff time.* In most facilities, staff are hired to provide direct client service, and to have a staff person doing developmental work reduces the time available for working with clients. Few evaluation units can afford the luxury of developmental time for staff persons. Besides the time element, development of evaluation tools demands a working knowledge of the skills required to perform jobs and to analyze tasks, of form and report design, of behavior analysis, of statistics for norms, and of industrial engineering techniques. Although these skills are becoming more and more widespread among evaluators, there are still many facilities that lack persons with these competencies. The lack of developmental time coupled with the inexperience of some evaluators is partly responsible for the increased use of commercial evaluation systems. The purchase of these systems as a matter of convenience does not necessarily imply that the systems are not useful to the evaluator.

The first decision is whether the evaluation unit is meeting client needs in terms of accurate assessment for available jobs and/or training. If needs are not being met, the second decision becomes a question of what areas of job assessment are needed for the evaluation unit. After these needs are known, a thorough review of the different evaluation techniques, commercial vocational evaluation batteries (or parts of these batteries), and other available resources should be made to determine how to best meet these needs. However, it is a common practice for many persons to want to buy a system that will give all the answers. Such a system simply does not exist. There is also the possibility of carefully selecting individual work samples from several systems and combining these into a unified system specific to the needs of the facility. To have appropriate evaluation stations, there has to be a great deal of analysis of what is to be accomplished during evaluation, the available jobs and training opportunities, the types of clients with whom you are working, and the best way to accomplish the goals of your facility. This analysis is absolutely necessary before a workable system can be developed.

The preceding points should only be used as general guidelines because each facility is unique. A critical factor in purchasing a system should be based on the knowledge of what is needed and not on the cost or attractiveness of the hardware. Usually, no one system will meet all the needs of a facility and the purchased system should be integrated with facility constructed devices, other evaluation systems, on-the-job evaluation, and psychological tests. MDC suggests that a facility obtain as much accurate information as possible about a system prior to purchase. Some sources of information are:

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*The MDC Work Sample Manual Clearinghouse is attempting to reduce the developmental time by making completed work sample manuals available to evaluators.

1. The information contained in this present publication and in A Comparison of Seven Vocational Evaluation Systems (Botterbusch, 1976(a).
2. MDC's sound-slide presentations on most evaluation systems. A brochure listing these programs is available from MDC.
3. Talk with evaluators in other facilities who are using the system being considered and see what they think of it.
4. If possible, try out the system yourself with clients in another facility.
5. Write the system's manufacturer and obtain current information.

In conclusion, MDC cannot recommend what commercial system(s) will be best for a facility because selecting the appropriate system is (or should be) based on an accurate, realistic assessment of the unique needs of each facility.

References

Botterbusch, K. F., A comparison of seven vocational evaluation systems. Menomonie, Wisconsin: Materials Development Center, 1976(a). (Available from the MDC at $1.50 per copy)

Botterbusch, K. F., The use of psychological tests with individuals who are severely disabled. Menomonie, Wisconsin: Materials Development Center, 1976(b). (Available from the MDC at $2.00 per copy)

Botterbusch, K. F., & Sax, A. B., Some considerations for the selection of a commercial evaluation system. Vocational Evaluation and Work Adjustment Bulletin, 1977, 10(3) in press.

Dickson, M. B., Work sample evaluation of blind clients: Criteria for administration and development. Menomonie, Wisconsin: Materials Development Center, 1976. (Available from the MDC at $1.50 per copy)

Task Force No. 2. The tools of vocational evaluation. Vocational Evaluation and Work Adjustment Bulletin, 1975, 8(3), Part I, special edition, 49-64. (The three publications of the VEWAA Research Project have been reprinted by MDC into one volume (Reprint No. 12) and is available for $2.00 per copy)

VOCATIONAL EVALUATION SYSTEM OUTLINE

1. Development

   a. Sponsor - The name of the organization who originally funded or financed the development of the vocational evaluation system.

   b. Target Group - What specific populations, such as disadvantaged, mentally retarded, or physically handicapped, was the system designed to serve?

   c. Basis of the System - What theoretical or organizational principle, such as the Dictionary of Occupational Titles, was used as a basis for development?

2. Organization

   a. Name and Number of Work Samples - What are the names of the work samples and how many work samples does the system contain?

   b. Grouping of Work Samples - What is the arrangement of the individual work samples within the system? Are several work samples grouped in a hierarchy or is each work sample independent?

   c. Packaging of Work Samples - What is the physical setup of the work samples in the battery?

   d. Manual - What is the physical description of the manual and does it provide all the details that the evaluator needs to know in order to use the system?

3. Work Evaluation Process

   a. Preliminary Screening - What information is needed or what decisions must be made before a client can be administered the system?

   b. Sequence of Work Sample Administration - In what order are the work samples administered?

   c. Client Involvement - To what extent is the client informed of his/her progress during the course of administration? What type of formal feedback is given to the client after the entire battery has been administered? What type of contact does the client have with the evaluator?

   d. Evaluation Setting - Does the general environment attempt to simulate industry, produce a classroom atmosphere, or resemble a formal testing situation?

   e. Time to Complete the Entire System - How long does it take the average client to complete all the work samples in the system?

4. Administration

   a. Procedures - Is the purpose of each work sample, materials needed, layout, and general instructions clearly given so that there is little chance of misinterpretation?

   b. Method of Instruction Giving - How does the client receive his/her instructions for the work samples in the system, for example: oral, demonstration, written, or audio-visual?

c. Repeating Work Samples - What provisions are made for the readministration of some work samples and what is the purpose of readministration?

d. Providing Assistance to the Client - What procedures are there for giving extra or additional instructions, demonstrations, or feedback after the period of initial instructions?

5. Scoring and Norms

a. Timing - What are the procedures for timing the client?

b. Timing Interval - When does the evaluator start timing the client and when does he stop?

c. Time Norms - What is the procedure for reporting the time score for each work sample?

d. Error Scoring - What procedures, such as a random check of some parts, general rating of overall quality, or a comparison to standards, are used for determining errors?

e. Scoring Aids - What use is made of overlays, templates, models, etc., to make scoring more accurate and easier for the evaluator?

f. Quality Norms - What procedures are used for reporting the number of errors, quality rating, etc., for each work sample?

g. Emphasis in Scoring - Does the system emphasize time or errors in the scoring process?

6. Observation of Clients

a. Work Performance - Are work performance factors (e.g., fine finger dexterity, color perception) listed for the system and are specific work performance factors given for each work sample?

b. Work Behaviors - Are work behaviors (e.g., ability to follow instructions, communication with supervisors) defined for the system and are specific work behaviors to be observed for each work sample?

c. Rating System - What procedures does the system have for the recording, describing, and rating of observed work performance and work behaviors?

d. Frequency of Observation - How often and to what extent is the evaluator to observe and record client behavior?

7. Reporting

a. Forms - What forms are included with the system?

b. Final Report Format - What information is included in the final report and what type of format (e.g., rating scales, free narration) is used to present the information?

8. Utility

a. Vocational Exploration - Does the system provide experiences that the client can readily relate to real jobs?

b. Vocational Recommendations - Are training and job recommendations specific or general? How are they related to the DOT or other job classification systems?

c. Counselor Utilization - Can the system provide the counselor or referring agency with useful information and to what extent is the counselor involved in the process?

9. Training in the System

a. Training Required - Is formal training required before the system is sold?

b. Training Available - Is formal training available?

c. Duration - How much time is required for training?

d. Follow-up - Is technical assistance available after purchase and training?

10. Technical Considerations

a. Norm Base - What norms are available and are the norm groups clearly defined? Are industrial norms (i.e., employed worker) available?

b. Reliability - What empirical evidence is there to demonstrate that the system gives reliable or consistent results?

c. Validity - What empirical evidence is available to indicate that the system really does what it claims, such as make more realistic choices, job and training success, etc.?

11. Reviewer's Summary and Comments - This contains what the reviewer considers to be the major advantages and disadvantages of the system.

12. Address - The address of the manufacturer is given for those wishing to obtain additional information.

13. Cost - The present cost of the system and what materials and services are included in the price.

14. References - All generally available references are given; those not available from the MDC Loan Service are indicated by an asterisk(*).

Outline	COATS	Hester
1. Development		
a. Sponsor	Prep, Inc.	Goodwill Industries of Chicago
b. Target Group	manpower, secondary education and rehabilitation	rehabilitation clients
c. Basis of System	research studies of need	Dictionary of Occupational Titles
2. Organization		
a. Number of Work Samples	4 components - job matching, employability attitudes, work samples, and living skills	28 psychological tests
b. Grouping of Work Samples	10 work samples; each is independent	grouped into 7 factors
c. Packaging of Work Samples	each separately packaged in portable container	some individually packaged
d. Manual	separate manual for each component, contains all details	offset, contains most system details
3. Work Evaluation Process		
a. Preliminary Screening	not required	not required
b. Sequence of Administration	components and work samples may be given in any order	no specific order specified
c. Client Involvement	extensive client involvement	little client involvement
d. Evaluation Setting	classroom atmosphere	formal testing atmosphere
e. Time to Complete Entire System	estimate 28 to 60 hours	estimate 5 hours

Micro-TOWER	VIEWS
ICD Rehabilitation and Research Center rehabilitation clients 7 aptitudes	Philadelphia JEVS mentally retarded Dictionary of Occupational Titles
13 5 groups of general aptitudes	16 4 areas of work
each individually packaged several manuals; each printed, contains all system details	most individually packaged offset, contains all system details
not required at the discretion of the evaluator extensive client involvement combination of formal testing and counseling 15 to 20 hours	not required progressive from least to most complex extensive client involvement realistic work setting stressed estimate from 20 to 35 hours

Outline	COATS	Hester
4. Administration		
a. Procedures	specified in detail	not specified in detail
b. Method of Instruction Giving	audio-visual	oral and demonstration
c. Repeating Work Samples	not specified	if necessary, after 2 weeks
d. Providing Assistance to Client	little assistance after timing begins	no assistance after timing begins
5. Scoring and Norms		
a. Timing	evaluator times client or client times self	evaluator times client
b. Timing Interval	not specified	varies with type of test
c. Time Norms	computer generated scores	no separate time norms given
d. Error Scoring	compared to standards	no separate error norms given
e. Scoring Aids	not used	not used
f. Quality Norms	computer generated skill rating	
g. Emphasis in Scoring	quality	time to completion or number of responses
6. Observation of Clients		
a. Work Performance	no factors recorded	
b. Work Behaviors	some factors defined	Because the Hester uses psychological and psychophysical tests, no behavioral observations are made.
c. Rating System	none; the number of behaviors is recorded	
d. Frequency of Observation	not specified	

Micro-TOWER	VIEWS
specified in detail	specified in detail
audio-cassette, evaluator demonstrations	oral and modeling, flexibility to use a variety of techniques stressed
not specified	repeated if absolutely necessary
no assistance after timing begins	little assistance after timing begins
cassette tape	evaluator times client
specified for each work sample	after task is learned to completion
no time norms used	rated on 3 point scale; also MODAPTS
number completed; pieces correct	compared to standards
some use	some use
rated on 5 point scale	rated on 3 point scale
emphasis on quality	time and quality given equal weight
no specific work factor specified	10 factors specified
5 work behaviors listed	clearly defined
none	2 or 3 point scale
frequent observations are expected	extensive observations

Outline	COATS	Hester
7. Reporting		
a. Forms	standardized forms for all phases	standardized forms for all phases
b. Final Report Format	separate computer printout for each component	computer generated report lists Worker Trait Groups and specific jobs
8. Utility		
a. Vocational Exploration	extensive occupational information given to client	little use to client
b. Vocational Recommendations	specific jobs and groups of jobs	completely related to DOT
c. Counselor Utilization	designed for client self-interpretation	designed for counselor use
9. Training in the System		
a. Training Required	no	yes
b. Training Available	yes	yes
c. Duration	3 to 5 days	3 days
d. Follow-up	yes	yes
10. Technical Considerations		
a. Norm Base	student norms on work samples	little information available
b. Reliability	adequate data in manuals	test-retest reliabilities high
c. Validity	adequate data in manuals	manual contains little data

Micro-TOWER	VIEWS
standardized forms for all phases three separate forms used to report different results	standardized forms for all phases standardized format containing behavior data and recommended Worker Trait Groups
some use to client related to DOT designed for referral agency use or first step in longer evaluation	little use to client completely related to DOT orientated toward counselor
no yes 2 to 3 days not specified	yes yes 1 week yes
several norm groups adequate data in manual - high reliabilities construct validity is more than adequate	mentally retarded adults; MODAPTS no data available no data available

Comprehensive Occupational Assessment and Training System (COATS)

1. Development

   a. Sponsor - Prep, Inc.

   b. Target Group - Originally designed for use in manpower programs and secondary education guidance programs, the COATS has been slightly modified to serve a rehabilitation population.

   c. Basis of the System - Various research studies by Prep, Inc. and others established the need for and the content of each of the four components listed below.

2. Organization

   a. Name and Number of Work Samples - The COATS system consists of four components which are intended to give the evaluator a complete picture of the client. (Each component may be used independently.) Each component contains three different program levels: (1) assessment and analysis, (2) prescription and instruction, and (3) evaluation and placement. The four components are as follows:

      (1) Job Matching System - This component matches the person with job and training opportunities. The system is based on the degree to which workers approach or avoid 16 specific skill categories. The client uses the program to identify his own preferences, experiences, and capabilities.

         (a) Assessment - Fifteen audio-visual cartridges present photographs and drawings from each of the skill categories. Five cartridges deal with worker preferences, five with experience and five with capabilities.

         (b) Prescription - The client uses the information gained during the assessment phase to plan and perform activities designed to help him learn about himself and job requirements. These activities are contained in a Student Handbook.

         (c) Evaluation - The client carries out the previously planned exercises and plots his progress.

      (2) Employability Attitudes System - In this component the client determines what his attitudes and behaviors are and compares them with the attitudes that employers see as being important for the hiring, promoting, or firing of an employee. Thirteen job seeking attitudes and 23 job keeping and job advancing categories are used.

         (a) Assessment - Six audio-visual cartridges containing what the developer calls 25 "real life" adventures are used.

         (b) Prescription - Exercises in the Student Handbook help the client interpret the results and compare his results with employer data.

         (c) Evaluation - Clients keep track of their attitude development by charting their activities on Learning Activity Maps. Criteria for successful completion of the activities are given.

(3) Work Samples System - Presently the COATS contains ten work samples that were developed on the basis of content analysis of tasks common to job families: Drafting; Clerical-Office; Metal Construction; Sales; Wood Construction; Food Preparation; Medical Services; Travel Services; Barbering-Cosmetology; and Small Engine.

(a) Assessment - Instructions are contained on audio-visual cartridges. Each work sample contains occupational information which is used to elicit the degree of client interest in the work sample. The instructions are given in a step-by-step manner and the cartridge stops when a task is to be performed.

(b) Prescription - After computer scoring, the client uses a Student Handbook to interpret his results.

(c) Evaluation - The client further investigates jobs related to preferred work samples and performs additional job related tasks that were not included in the work sample.

(4) Living Skills System - The component deals with what skills are needed to be functionally literate in contemporary society. The program classifies literacy into skills (reading, writing, computation, problem solving, and speaking-listening) and knowledge areas (consumer economics, occupational knowledge, community resources, health, and government-law).

(a) Assessment - Six cartridges containing 18 "adventures" are used to evaluate literacy skills and knowledge areas.

(b) Prescription - The skills and knowledge areas are reported to the client in a 5 x 5 matrix. Weak areas are identified using a Student Handbook.

(c) Evaluation - Individualized objectives are established and the client works toward raising his literacy levels where necessary.

b. Grouping of Work Samples - There are four components in the COATS system. These are described above. Each work sample is independent.

c. Packaging of Work Samples - Each of the ten work samples is separately packaged in a portable container no larger than 16 x 24 x 20. The work samples can be set up on a table top or in a 48 inch wide carrel. The other three components are each packaged separately.

d. Manual - The COATS uses a separate loose-leaf manual for each component. These manuals contain all administration details, interpretation of results, hints for working with clients on each of the three levels, as well as a summary of the research studies and the development methodology used for each component. A separate manual is also used for each work sample.

3. Work Evaluation Process

a. Preliminary Screening - No preliminary screening is required.

b. Sequence of Work Sample Administration - The four components may be given in any order. The ten work samples need not all be administered or administered in any particular order. Because each component is more-or-less independent, components may be purchased and used independently of each other.

c. Client Involvement - There is extensive client involvement following the assessment phase of each component. The client uses the appropriate Student Handbook to interpret his results, then plans and follows activities designed to change his attitudes and/or behavior. The evaluator monitors client progress, helps when necessary, and coordinates the activities of several clients.

d. Evaluation Setting -- Although the manuals do not specify a particular setting, the use of audio-visual materials, answer sheets, handbooks, as well as the emphasis on activities gives the COATS a classroom atmosphere.

e. Time to Complete the Entire System -- If all ten work samples are given, the work samples take from 18 to 40 hours to administer. The other three components take an estimated 10 to 20 hours. These estimates are for the assessment level only. All components except work samples can be administered to small groups.

4. Administration

a. Procedures - The materials required and the layout are clearly described.

b. Method of Instruction Giving - During the assessment phase, all instructions are presented on a cartridge containing an eight-track audio tape synchronized with a 16mm filmstrip. The client responds by using separate answer sheets for each component and for each work sample. Student handbooks, learning contracts, and activity maps are used during the prescription and evaluation phases. The reviewer estimates that an eighth grade reading level is required for adequate use of the printed materials.

c. Repeating Work Samples - No information is contained in the manuals concerning the readministration of work samples or the other three components.

d. Providing Assistance to the Client - The evaluator is to make certain that the client understands all instructions prior to beginning a task. Additional instructions can be given once the task has begun if the client is having trouble understanding them.

5. Scoring and Norms

a. Timing - The only timed components are the work samples. Here, either the evaluator times the client or the client times himself.

b. Timing Interval - This is not specified in the work sample manuals, but includes all the time the client is under the direction of the audio-visual program.

c. Time Norms - The total time to completion is reported on the computer generated Work Sample System Student Record Form.

d. Error Scoring - After completion, all work sample results are checked against carefully defined scoring criteria. The results of each task within the work sample are judged separately and rated on a four point rating scale.

e. Scoring Aids - No scoring aids are used.

f. Quality Norms - The quality of each work sample is presented in the form of a skill rating and data on the percentage of tasks successfully completed on the computer printout.

g. Emphasis in Scoring - Time and quality scores are given for each work sample, with the emphasis on quality.

6. Observation of Clients

a. Work Performance - No work performance factors are recorded on the evaluator's Behavior Observation Form during work sample administration.

b. Work Behaviors - During the administration of each work sample, the evaluator observes the client on: efficiency, relationship to authority, behavior in work setting, peer relationships, and self-appearance.

c. Rating System - No rating system is used; the evaluator uses a computer-scored form to record the number of types of specific behaviors.

d. Frequency of Observation - The manual does not give any specific schedule for behavioral observations; it merely states that the client is to be observed on a scheduled basis.

7. Reporting

a. Forms - The COATS contains computer-scored answer sheets for the Job Matching, Employability Attitudes, and Living Skills Systems. Each work sample uses a separate form which contains client self-ratings of interest, quality, and speed. During work sample administration, the Behavior Observation Form is used by the evaluator to record behaviors. At present, turnaround time is about one week for computer scoring.

b. Final Report Format - Each component of the COATS system produces a computer-generated final report of the assessment phase. The client uses a separate Student Handbook for each component to systematically interpret these results and then to plan and carry out prescribed activities. For clients who lack the ability or time to use the Student Handbook, the evaluator transfers the information from the printouts onto an Interpretation Profile for each component. These results are combined into a single narrative evaluation report.

8. Utility

a. Vocational Exploration - The Job Matching, Employability Attitudes, and the Work Sample Systems provide the client with a wealth of occupational information.

b. Vocational Recommendations - The COATS provides vocational recommendations for both individual jobs and groups of related jobs.

c. Counselor Utilization - At present the COATS is basically designed for client (or student) self-interpretation followed by activities designed to change client behavior. The evaluator must be able to provide the counselor with a useable report using the wealth of data generated by the COATS.

9. Training in the System

a. Training Required - No

b. Training Available - Yes

c. Duration - Three to five days

d. Follow-up - Yes

10. Technical Considerations

a. Norm Base - Adequate norming procedures were used for all components except the Work Sample System. Only student time norms are available for the work samples. No client, employed worker, or industrial norms are available for the work samples.

b. Reliability - Summaries of the research available in the four instructor's manuals and in a separate research publication indicate that the reliability of the components is adequate.

c. Validity - The validity of the COATS was established by several different methods and validity data are available in the four instructor's manuals.

11. Reviewer's Summary and Comments

The COATS is the most comprehensive evaluation system presently available for use in educational and rehabilitation settings. The system is logically consistent, well designed, and based on a wide range of research studies. Two unique aspects are: (1) the emphasis upon the client using the results of the assessment phase to plan and, hopefully, change his own behavior and (2) the fact that each component can be used independently. This means that a facility could use, for example, the Work Samples and Job Matching Systems in an evaluation unit, the Employability Attitudes System in a work adjustment program, and the Living Skills System in a literacy training program. The COATS was designed for school populations and this results in several potential problems for rehabilitation facilities: (1) the client must be able to read at about the eighth grade level to use the Student Handbook effectively; (2) the use of audio-visual format and separate answer sheets may present some problems for persons with hearing, visual, and/or learning handicaps; and (3) the turnaround time of one week is a problem for facilities that typically have a two to three week period of evaluation.

12. Address

Prep, Inc.
1575 Parkway Avenue
Trenton, New Jersey 08628

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13. Cost

The complete cost for each component and the necessary audio-visual equipment is as follows: (training is not included in cost)

Job Matching System	$1,880.00
Employability Attitudes System	$1,242.50
Work Samples System (10 work samples)	$7,321.00
Living Skills System	$1,052.50
Prep Courier Audio-Visual Projector PP-100 (for individual use)	$ 475.00
Prep Tutor Audio-Visual Projector PP-101 (for small group use)	$ 375.00

14. Reference

Pisauro, M. L., Comprehensive Occupational Assessment and Training System. In A. Sax (Ed.) Innovations in Vocational Evaluation and Work Adjustment. Vocational Evaluation and Work Adjustment Bulletin, 1976, 9(3), 39-45.

Hester Evaluation System
(Hester)

1. Development

   a. Sponsor - Goodwill Industries of Chicago

   b. Target Group - Although designed for physically and mentally handicapped rehabilitation populations (except persons who are visually disabled), the Hester can be used with almost any educational and ability group, including "normal" high school students and adults.

   c. Basis of the System - The Hester is based almost exclusively on the Dictionary of Occupational Titles (DOT), especially the Data-People-Things hierarchy, Worker Trait Groups, physical limitations, working conditions, general vocational preparation (GED), and specific vocational preparation (SVP). The Hester is not a work sample, but a battery of psychological tests designed to relate client scores to the DOT.

2. Organization

   a. Name and Number of Work Samples - Twenty-eight pure factor performance and paper and pencil scores (i.e., tests) are grouped into seven categories on the computer printout for ease of reading. These scores assess the client's abilities on the Data and Things hierarchies. (The system requires the evaluator to determine People levels based on interviews, case histories and evaluation results using various techniques. The system contains detailed instructions on how to rate each level of the People hierarchy.) The 28 scores are as follows:

      (1) Unilateral Motor Ability - Finger Dexterity (Purdue Pegboard), Wrist-Finger Speed (Tapping Board) and Arm-Hand Steadiness (Lafayette Motor Steadiness Kit).

      (2) Bilateral Motor Ability - Manual Dexterity (Minnesota Rate of Manipulation), Two-Arm Coordination (Two-Arm Tracing Apparatus), Two-Hand Coordination (Etch-A-Sketch with Maze Overlay), Hand-Tool Dexterity (Hand-Tool Dexterity Test), Multiple Limb Coordination (foot operated stapler), and Machine Feeding (folding machine).

      (3) Perceptual - Perceptual Accuracy (projector with slides), Perceptual Speed (Tachistoscope), and Spatial Perception (Revised Minnesota Paper Form Board Test).

      (4) Perceptual - Motor Coordination-Aiming (Lafayette Motor Steadiness Kit), Reaction Time (Multi-Stimulus Reaction Timer), Fine Perceptual Motor Coordination (Polar Pursuit Tracker), and Visual Motor Reversal (Mirror Tracing Apparatus).

      (5) Intelligence - Abstract Reasoning (Raven Progressive Matrices), Verbal Ability (SRA Verbal Test - L Scale), Numerical Ability (SRA Verbal Test - Q Scale), Decision Speed (same equipment as Perceptual Accuracy), Response Orientation (same equipment as Reaction Time), and Oral Directions (Personnel Tests for Industry - Oral Directions Test).

(6) Achievement - Reading (Gates-McGinitie Comprehension Test) and Arithmetic (Level I of the Wide Range Achievement Test).

(7) Physical Strength - Hand Strength (grip dynamometer) and Lifting Ability (standing platform).

b. Grouping of Work Samples - Although each test is independent, they are grouped on the printout according to the seven categories listed above.

c. Packaging of Work Samples - The tests and apparatus are individually packaged. Because some components are needed for two or more psychophysical tasks, the setup must be changed for some tasks. The standardized psychological tests can be ordered directly from their respective publishers.

d. Manual - The loose-leaf manual contains most system details, including administration instructions, data entry codes and instructions, some interpretation materials, and an organized list of all the jobs in the system.

3. Work Evaluation Process

a. Preliminary Screening - No preliminary screening is required. In the three week Vegas evaluation program designed by and used at Chicago Goodwill, the Hester is administered at the beginning of the program to determine basic abilities.

b. Sequence of Work Sample Administration - The tests do not have to be given in any specific order.

c. Client Involvement - Because of the formal nature of the testing process and the emphasis upon accurate measurement, there is little client involvement during actual testing. However, the evaluator is urged to explain the entire system to clients prior to test administration.

d. Evaluation Setting - The psychometric basis of the Hester creates a formal testing atmosphere. The emphasis on accurate measurement using psychophysical devices to determine reaction time, dexterity, etc., could easily create a laboratory-like environment.

e. Time to Complete the Entire System - The developer estimates that the entire battery can be administered in about five hours. The individually administered tests take about one hour to administer. The remaining four hours are devoted to tests that can be administered to small groups.

4. Administration

a. Procedures - Currently available information does not contain details on the layout, materials needed for each task, and how to connect the electrical timing and counting devices. The Hester does not have to be administered by a trained evaluator. The developer states that a clerical person or evaluator aide could easily administer the system.

b. Method of Instruction Giving - All instructions are read aloud to clients and many are accompanied by short demonstrations. The manner of communication of the instructions may be varied to accommodate any special client problems (e.g., hearing problems, low intelligence).

c. Repeating Work Samples - Immediate readministration of the tests is not usually recommended because of the possible influence of practice effects. If readministration is required, the developer suggests retesting after one or two weeks.

d. Providing Assistance to the Client - The evaluator is to make certain that the client fully understands the instructions to each test. No assistance is given during the actual administration of the tests.

5. Scoring and Norms

a. Timing - The evaluator times the client. The timing of the psychophysical tests is carefully controlled by electrical timing devices.

b. Timing Interval - For many tests, timing is the speed with which the client responds to a specific stimulus by performing highly unique responses. A few tests are timed from either start to completion or for a definite period of time.

c. Time Norms - No separate time norms are presented. The raw test scores are sent to the developer for computer scoring.

d. Error Scoring - No separate error scores are computed. The psychophysical tests use mostly time to completion or the number of responses performed within a definite time limit.

e. Scoring Aids - No scoring aids are used.

f. Quality Norms - There are no quality scores reported.

g. Emphasis on Scoring - The emphasis is on time to completion or number of responses performed within a definite time limit.

6. Observation of Clients

a. Work Performance -

b. Work Behaviors -

c. Rating System -

d. Frequency of Observation -

} Because the Hester Evaluation System is a group of psychological and psychophysical tests, no behavioral observations are made.

7. Reporting

a. Forms - Standardized forms are used to record responses on most of the psychophysical tests. All data, together with demographical

information, are transferred to two final forms prior to computer scoring by Chicago Goodwill Industries. The raw scores can be given to the computer in one of three ways: (1) by mailing the forms, (2) by using a computer terminal service available in larger cities, or (3) by calling the results in by telephone. If the computer terminal service is used, the printout containing the results is available within 15 minutes after data entry. Mail and telephone entries are returned by mail.

b. Final Report Form - The following information is contained on the computer printout: (1) demographic and identification supplied by the evaluator, (2) the scores for each test listed under their respective category, (3) the Data-People-Things hierarchies showing client level of functioning, (4) the feasible Worker Trait Groups for the client, and (5) a selected list of job titles taken from the feasible Worker Trait Groups together with their physical limitations, working conditions, GED and SVP.

8. Utility

a. Vocational Exploration - The formal testing atmosphere and the lack of introductory explanations relating the tests to jobs offers the client almost no chance for vocational exploration. However, the jobs listed on the computer printout are intended to provide the client with information that can be used as a basis of vocational exploration.

b. Vocational Recommendations - The Hester printout contains both general groups of jobs (i.e., Worker Trait Groups and specific jobs that are considered to be within the client's ability. The system is completely related to the DOT, even to the extent of giving page numbers.

c. Counselor Utilization - The system is designed to report jobs and job areas that are within the client's abilities. This information, if communicated to the referring counselor effectively, is very useful.

9. Training in the System

a. Training Required - Yes

b. Training Available - Yes

c. Duration - Three days

d. Follow-up - Technical assistance is available after purchase.

10. Technical Considerations

a. Norm Base - The manual states that "norms were developed over the years from test scores of staff members and clients at the Goodwill Rehabilitation Center program." However, the manual does not contain these norms.

b. Reliability - Test-retest reliabilities for individual tests on 45 clients retested after four weeks range from .72 to .95. These are high. The second type of reliability is the reproductibility of the job list. In a test-retest situation, 78% of the job families listed on the first printout were the same as those listed on the second.

c. Validity - The manual contains a discussion of five types of validity, but presents very little data. The construct validity of the Hester is based on several factor analyses; however, none of these are given in the manual. A concurrent validation study of 156 dentists demonstrated that 80% of the dentists "would have been recommended to enter dentistry."

11. Reviewer's Summary and Comments - The Hester uses the trait-and-factor approach that has been used as a test development model for over 40 years. This approach has proven successful for many psychological tests. The Hester attempts to present a picture of the client's abilities and to match these abilities with the structure of the DOT. The logical structure has a definite appeal to persons who stress ability testing as part of the vocational evaluation process. It must be emphasized that the lack of detailed information on the development and the validity of the system are a major source of concern. The Hester does not claim to be a complete vocational evaluation system--the developer realizes the need for occupational information, interest determination, accurate behavioral observations, and evaluator interaction with the client. The Hester could be best described as a very logical series of tests designed to relate client abilities to the Data-People-Things hierarchies of the DOT. The system is probably best used for initial screening at the beginning of the vocational evaluation process.

12. Address

Hester Evaluation System
Goodwill Industries of Chicago
120 South Ashland Boulevard
Chicago, Illinois 60607

13. Cost - Total cost is approximately $4000.00. This includes hardware, training, and expendable supplies for 100 persons.

14. References

Botterbusch, K., Hester Evaluation System. In A. Sax (Ed.) Innovations in Vocational Evaluation and Work Adjustment. Vocational Evaluation and Work Adjustment Bulletin, 1975, 8(4), 62-65.

*Hester, E. J., The differential effects of disability and sex on job sample task performance. Unpublished doctoral dissertation, Loyola University, 1969.

Hester, E. J., Hester Evaluation System. Unpublished paper, Goodwill Industries of Chicago, n.d.

1. Development

   a. Sponsor - ICD Rehabilitation and Research Center

   b. Target Group - The system is primarily aimed at a general rehabilitation population, but it can also be used with special education students, the disadvantaged, and adult offenders. Although not specially designed for mentally retarded persons, it can also be used with educable mentally retarded persons.

   c. Basis of the System - The system is basically a group aptitude test that uses work sample techniques to measure seven aptitudes as defined and used in the Dictionary of Occupational Titles (DOT). The results are related to the aptitude requirements for entry level jobs in specific Worker Trait Groups.

2. Organization

   a. Name and Number of Work Samples - The system contains 13 work samples, divided into five groups of what can be called general aptitudes. Four of the work samples (Want Ads Comprehension, Zip Coding, Blueprint Reading, and Payroll Computation) have alternate forms to prevent copying during administration and for possible use during retesting. The primary aptitude(s) and their DOT abbreviation for each work sample are given in the parentheses:

      1. Motor - Electronic Connector Assembly (F-finger dexterity); Bottle Capping and Packing (M-manual dexterity); and Lamp Assembly (K-motor coordination).

      2. Spatial - Blueprint Reading (S-spatial reasoning); and Graphics Illustration (S-spatial reasoning; K-motor coordination).

      3. Clerical Perception - Filing (Q-clerical perception; K-motor coordination); Mail Sorting (Q-clerical perception; M-manual dexterity); Zip Coding (Q-clerical perception); and Record Checking (Q-clerical perception).

      4. Numerical - Making Change (N-numerical reasoning); and Payroll Computation (N-numerical reasoning).

      5. Verbal - Want Ads Comprehension (V-verbal comprehension); and Message Taking (V-verbal comprehension).

   b. Grouping of Work Samples - The work samples are grouped according to the five aptitude areas listed above.

   c. Packaging of Work Samples - All work samples are individually packaged. Because the system is designed for group administration, a separate set of work samples is needed for each client, plus a demonstration set for the evaluator.

   d. Manual - The system contains several manuals. A general administration and scoring manual, a manual for the group discussion program, a separate manual for each work sample, a technical manual, and an

inventory manual. All manuals are well-organized and contain complete and detailed instructions on setup, administration, scoring, use of results, etc. All manuals are printed.

3. Work Evaluation Process

a. Preliminary Screening - No preliminary screening is required prior to the administration of Micro-TOWER. The manual states, however, that a period of general orientation to the system should be given prior to work sample administration.

b. Sequence of Work Sample Administration - The manual contains several suggested schedules for administration of the work samples and for group discussion. These schedules are only suggestions and the work samples do not have to be given in any set sequence. Within each work sample a carefully defined sequence is followed. All instructions to the clients are recorded on a cassette tape. The first step is the presentation of a series of occupational photos which illustrate jobs requiring the skills assessed by the work sample. Each work sample provides an untimed learning/practice period which includes taped instructions, visual illustrations, evaluator demonstrations, and an opportunity for clients to practice. During this period, the cassette tape automatically stops at preselected places so that the evaluator can give additional instructions, etc. The evaluator is also free to stop the tape at any time if additional help is needed. After this learning/practice period comes the evaluation period. Here clients work entirely on their own without any help. The purpose in clearly separating the practice and evaluation periods is to make certain that the client has learned the task before being required to perform it. The system places a great deal of emphasis on separation of learning from performance. After completion of the task, the clients fill out a self-report form rating their interest and perceived ability.

c. Client Involvement - Micro-TOWER emphasizes client-involvement. This is accomplished in several ways. Prior to administration of the work sample, occupational information is provided; during the instruction period, the evaluator stops at several points to answer questions and provide additional instructions. The practice period also permits feedback. The greatest client involvement is during the group discussion program. Here, client values, interests, needs, etc., are discussed. Suggested activities are provided in a separate manual. Clients also receive formal feedback of their performance on the work samples.

d. Evaluation Setting - The evaluation setting could best be described as a combination of a formal testing situation and a group counseling environment.

e. Time to Complete the Entire System - Total testing time is about 15 hours; if group discussions are included, the total evaluation takes from 19 to 20 hours. Depending on what schedule is used, the battery can be administered in between three and five days. The manual contains several suggested schedules which vary in the number of hours per day that the work samples are administered and in the presence and duration of the group discussion periods.

4. Administration

a. Procedures - General administration procedures are described in the overall manual. The specific manual on each work sample contains detailed instructions on materials, layout, administration, scoring criteria, etc. All procedures are thoroughly defined.

b. Method of Instruction Giving - Instructions are given by several methods. Each work sample begins with a series of large photographs showing jobs requiring skills related to the work sample. The major instructional method, however, is a separate audio-cassette tape for each work sample which is coordinated with the evaluator's demonstrations. This tape is programmed to stop at certain critical points so that the evaluator can provide help, give additional explanations, or check the results of the practice exercises. The system emphasizes standardized instructions and timing; it uses the audio-tape as the major means of insuring standardization. No written instructional materials are used. However, to complete some of the verbal and clerical tasks, a third to fourth grade reading level is required.

c. Repeating Work Samples - The manual contains no instructions or guidelines for repeating work samples. The only reference to readministration is made in regard to the use of alternate forms for four work samples.

d. Providing Assistance to the Client - Extensive assistance is provided during the learning/practice period. None is given during the actual evaluation period.

5. Scoring and Norms

a. Timing - The evaluation period on each work sample is timed through the use of the cassette tape. The tape tells the clients to "begin," then runs through a number of minutes of blank tape and then tells the clients to "stop." This procedure is to insure accurate timing.

b. Timing Interval - Timing is for a specified period within each work sample.

c. Time Norms - No time norms are used in this system. The score for each work sample is the number of correct responses; report forms also provide space for recording the number attempted.

d. Error Scoring - A separate form is used for each work sample to score the number of correct responses, pieces completed, etc. The entire product is scored for each work sample; there are no random checks. The raw scores for each work sample are recorded on the "Summary of Work Sample Performance" sheet. Quality standards are carefully defined.

e. Scoring Aids - Some use is made of scoring aids.

f. Quality Norms - The raw scores for each work sample are compared to the desired norm group. A scale is used to convert the scores into one of five possible ratings. These ratings are based on percentile

norms, one rating for each 20 percentile points. Thus, a very high rating means that the client scored above the 81st percentile. Norms are available for 19 different groups.

g. Emphasis in Scoring - The emphasis is on the quality of work produced within a specified time period.

6. Observation of Clients

a. Work Performance - No specific work performance factors are defined in the manual or listed on the "Behavioral Observations" form. For each work sample there is a space for the evaluator to record general comments; there are no suggestions in the manual as to what these should cover.

b. Work Behaviors - Five work behaviors are listed on the "Behavior Observations" form. These are not defined in behavioral terms (e.g., attention span and efficiency). This form also includes a category called "General Behavior" which includes items such as appearance, self-image, and reaction to pressure. The evaluator is to make short notes for all of the "behaviors" listed on this form.

c. Rating System - No rating system is used for any of the items on the "Behavioral Observations" form. However, a six-point scale is used for general and work behaviors on the Summary Report Form.

d. Frequency of Observation - Observations are to be made during the training phase, during the performance of the work sample, and during group discussion. While no schedule for frequency is specified, it would appear that frequent observations are expected.

7. Reporting

a. Forms - The Micro-TOWER uses a variety of forms. This includes a raw score form for each work sample, the "Behavioral Observations" form mentioned above, a "Summary of Work Sample Performance" form, an attendance form, as well as reporting forms. The client completes a "Client Interest and Perceived Performance" form after the completion of each work sample; there is also a summary sheet for this form.

b. Final Report Format - There are three forms used for reporting. The first is a profile sheet based on percentiles that gives the client's results on each work sample on a scale from much below average to much above average. The second is a narrative summary report format which may or may not include the forms mentioned under 7.a. Finally, there is a "Recommendations" form which uses a checklist format to cover topics such as special training, individual attention, and vocational recommendations.

8. Utility

a. Vocational Exploration - The information given at the beginning of each work sample is designed to make clients aware of what jobs are related to the aptitude(s) being measured by the work sample. This information, plus the group discussion, provide the client with some occupational information.

b. Vocational Recommendations - The system relates aptitudes to Worker Trait Groups that require aptitude patterns similar to those of the client. Thus, in making recommendations, the evaluator would match clients' aptitudes with those required by the Worker Trait Groups. This process would be further broken down according to interests, interpretations from behavior observations, and the results of group discussions. These recommendations would be written in narrative form in the narrative summary report.

c. Counselor Utilization - The system can be used to (1) produce a final report that is designed for the referral agency, or (2) as the first step in an extended evaluation.

9. Training in the System

a. Training Required - Although formal training is not required, it is strongly recommended.

b. Training Available - Optional training programs are available.

c. Duration - Two or three days depending upon the training option.

d. Follow-up - This information is not specified.

10. Technical Considerations

a. Norm Base - Norms are available on many groups: a national sample of 1,500 rehabilitation clients, males, females, Spanish-speaking, left handed persons, physically disabled, psychiatrically disturbed, brain damaged, cerebral palsied, students in special education, the disadvantaged, ex-drug abusers, ex-alcoholics, and adult offenders. In addition, help is available from ICD to assist facilities in developing local norms.

b. Reliability - The Technical Manual provides data on the reliability of the Micro-TOWER work samples. The coefficients range from .74 to .97. The data was based on test-retest, alternate forms, and internal consistency estimates.

c. Validity - Although a factor analysis revealed a large general factor, there was also evidence for grouping the work samples into the five aptitude areas. The construct validity of the work sample battery is supported by examination of the intercorrelations of the Micro-TOWER work samples. Correlations are also available with the factors from the General Aptitude Test Battery (GATB). All data are reported in the Technical Manual. One study providing positive evidence of Micro-TOWER's use in decision-making compared the recommendations made after a one week evaluation with Micro-TOWER to the recommendations made after four additional weeks in TOWER. There was a 74% agreement on vocational recommendations, suggesting that decisions can be reached in a much shorter time for many individuals.

11. Reviewer's Summary and Comments - Micro-TOWER may best be described as a group aptitude battery that uses work sampling techniques as the assessment method. The system claims to measure seven of the nine aptitudes that are used in the Worker Trait Groups arrangement of the DOT. The system has the advantage of being group administered in a fairly short period of time, thus making maximum use of evaluator time. The system attempts to go beyond the mere assessment of aptitudes by providing occupational information and group discussion. Adequate norms are available, except for employed workers. The system generally takes a standardized, psychological test approach with emphasis on carefully controlled administration conditions, the separation of learning from performance, and the reporting of results in terms of percentiles. One major problem with the system is the lack of thorough behavioral observational materials. Another possible problem is the converse of the advantages of a group administered test - the evaluator may not be able to provide the client with the one-to-one relationship that is needed for some severely disabled persons.

12. Address - Micro-TOWER
ICD Rehabilitation and Research Center
340 East 24th Street
New York, New York 10010

13. Cost - The cost of the Micro-TOWER depends primarily upon the number of clients being tested in the group. Each client requires a complete set of equipment. An additional set of equipment is needed for the evaluator. Prices are available for group sizes from 4 to 30, for example:

Number of Persons Tested Per Group	Price
4	$ 4,753.00
7	$ 6,015.00
10	$ 7,207.00
20	$10,110.00
30	$12,647.00

The above prices include all equipment, forms to test 100 clients per work sample, one set of evaluator's equipment for each work sample, a cassette playback and a cue-stop system, table easels and photo books, all shipping and insurance charges, and training in the use of the system.

14. References

*Backman, M. E., Lewis, L. R., & Loeding, D., Examination of the aptitudes measured by work samples in the Micro-TOWER evaluation system. Paper presented at the meeting of the National Council on Measurement in Education. New York City, April 1977.

*Backman, M. E., Micro-TOWER: A new concept in work evaluation. In S. D. Michael (Chair), New Developments in Work Evaluation. Presented at the meeting of the American Personnel and Guidance Association, New York City, March 1975.

*Berven, N., Micro-TOWER: Development, norming and validation. In S. D. Michael (Chair), New Developments in Work Evaluation. Presented at the meeting of the American Personnel and Guidance Association, New York City, March 1975.

*Loeding, D., Micro-TOWER: The work samples. In S. D. Michael (Chair), New Developments in Work Evaluation. Presented at the meeting of the American Personnel and Guidance Association, New York City, March 1975.

Piller, R. P., The Micro-TOWER System. In A. Sax (Ed.) Innovations in Vocational Evaluation and Work Adjustment. Vocational Evaluation and Work Adjustment Bulletin, 1976, 9(4), 50-53.

Vocational Information and Evaluation Work Samples (VIEWS)

1. Development

   a. Sponsor - Philadelphia Jewish Employment and Vocational Service

   b. Target Group - The system is especially designed for mild, moderate and severe mentally retarded persons.

   c. Basis of the System - The VIEWS is based on four Areas of Work and six Worker Trait Groups (WTG) in the Dictionary of Occupational Titles (DOT).

2. Organization

   a. Name and Number of Work Samples - The 16 work samples are organized according to the DOT.

      1. Elemental Area of Work - Handling WTG: Tile Sorting; Nuts, Bolts and Washers Sorting; Paper Count and Paper Cutting; Collating and Stapling; Stamping; Nuts, Bolts and Washers Assembly; and Screen Assembly. Feeding-Offbearing WTG: Machine Feeding.
      2. Clerical Area of Work - Routine Checking and Recording WTG: Mail Sort and Mail Count. Sorting, Inspecting, Measuring and Related WTG: Nut Weighing; and Valve Disassembly.
      3. Machine Area of Work - Tending WTG: Drill Press
      4. Crafts Area of Work - Manipulating WTG: Budgette Assembly; Valve Assembly; and Circuit Board Assembly.

   b. Grouping of Work Samples - The work samples are grouped according to the four areas listed above.

   c. Packaging of Work Samples - Fourteen work samples are individually packaged in portable plastic cabinets. The Drill Press and Machine Feeding Work Samples are permanently mounted on a sturdy work table.

   d. Manual - An offset manual contains all administrative details, such as setup, evaluator and client instructions, and scoring procedures.

3. Work Evaluation Process

   a. Preliminary Screening - No preliminary screening is required.

   b. Sequence of Work Sample Administration - The work samples are given from least complex to most complex. Each work sample has three phases: (1) Demonstration - the evaluator follows the manual to provide an oral description and a physical demonstration for the client; (2) Training - the client is trained to a predetermined criterion of mastery on each work sample---during this phase the evaluator is free to use a wide variety of techniques to make certain that the client learns the task; and (3) Production - after the criterion have been achieved,

the client is assigned a set number of cycles of the work sample to perform independently. The purpose in separating the training and production phases is to make sure that the client has learned each task before he performs it.

c. Client Involvement - There is extensive client involvement. In the training phase for each work sample, the evaluator and the client has a significant amount of interaction during the learning process. The Evaluator's Handbook calls for an informal client feedback session after the first day as well as on subsequent days when needed. There is little client involvement during the production phase.

d. Evaluation Setting - A realistic work atmosphere and setting are stressed in the Handbook and during evaluator training.

e. Time to Complete the Entire System - The developer estimates that the VIEWS can be given in from four to seven, five-hour days; i.e., 20 to 35 hours.

4. Administration

a. Procedures - The Handbook contains all details necessary for administration. A photograph of each work sample is used to insure proper layout. The instructions for the demonstration phase are given in detail and include both oral and physical directions. The training phase criterion are clearly given.

b. Method of Instruction Giving - No reading is required for any work sample. The demonstration phase uses oral instructions plus modeling. During the training phase the evaluator is free to use a variety of verbal and nonverbal techniques; flexibility is stressed here. Because each work sample is individually administered, the client can receive instructions using the methods which best meet his needs.

c. Repeating Work Samples - The VIEWS does not place much emphasis on repeating work samples; it is designed so that the client should have learned the task before the performance phase. However, work samples may be repeated if considered necessary by the evaluator.

d. Providing Assistance to the Client - Extensive assistance is provided during the training phase; little is given during the production phase. If help is needed during the production phases, the evaluator is to record this on the appropriate behavior observation form.

5. Scoring and Norms

a. Timing - The evaluator uses a time stamp machine to time the client.

b. Timing Interval - Timing on each work sample begins when the client enters the production phase and ends with the completion of the task.

c. Time Norms - Raw time scores are converted to a three point rating scale. Predetermined time standards using the MODAPTS approach are also available.

d. Error Scoring - Each work sample is checked against carefully defined quality standards.

e. Scoring Aids - Some use is made of scoring aids.

f. Quality Norms - The total number of errors for each work sample are converted to a three point rating scale. The system also contains rate-of-learning norms for use during the training phase.

g. Emphasis in Scoring - Time and quality are both given equal weight in the VIEWS.

6. Observation of Clients

a. Work Performance - Ten work factors (e.g., motor coordination, finger dexterity, and work rhythm) are carefully specified (e.g., Finger Dexterity - turning nuts; handling small pieces). Each work sample has several factors listed that are to be observed.

b. Work Behaviors - Work behaviors such as attendance and punctuality, response to training, and communication are clearly defined and observed during the course of the day.

c. Rating System - No rating system is used for work behaviors and performance factors.

d. Frequency of Observation - The VIEWS uses extensive observations. Observation of defined work factors is required for each work sample. Work behavior observations are made daily. However, no established time or sample procedures are used for the work behaviors.

7. Reporting

a. Forms - The system uses three standardized forms: (1) a client record form for recording work sample behavioral observations, scores, and work performance (there is a separate page of this form for each work sample); (2) a daily observation form for summarizing work behaviors and performance; and (3) a final report form.

b. Final Report Format - The VIEWS final report uses a standardized format to present information on the following: general observations, interpersonal relations, training, worker characteristics, recommendations, and a profile sheet containing work sample results including the industrial time standards for the work samples. Recommendations are given for training techniques, Worker Trait Groups, and for other services that may be required.

8. Utility

a. Vocational Exploration - Because some of the tasks are not actual jobs because almost no occupational information is provided, the VIEWS is of little use in occupational exploration.

b. Vocational Recommendations - Specific recommendations are made; these are related to the six Worker Trait Groups covered by the VIEWS.

c. Counselor Utilization - The system and the final report are oriented toward the counselor.

9. Training Required

a. Training Required - Yes

b. Training Available - Yes

c. Duration - One week in Philadelphia for new users. A two day on-site training is required for facilities that already have the JEVS Work Sample Battery.

d. Follow-up - One on-site visit for those who come to Philadelphia for VIEWS training.

10. Technical Considerations

a. Norm Base - The VIEWS was normed on 104 mentally retarded persons between the ages of 16 and 61 with a median IQ of 50. MODAPT predetermined time standard norms are also available.

b. Reliability - No data presently available.

c. Validity - No data presently available.

11. Reviewer's Summary and Comments

The VIEWS attempts to evaluate the vocational potential of mentally retarded adults for jobs in six Worker Trait Groups. Job areas that are very common in the national economy and, more important, job areas where many retarded persons have found successful employment. The most unique feature of the system is the attempt to separate learning from performance. Here the developers believe that the client should first be thoroughly taught the task prior to performing it under timed conditions. The VIEWS also uses standardized behavior observations which are combined with time and quality scores to produce a well organized final report. The major problem with using the VIEWS by itself is the lack of occupational information.

12. Address

Vocational Research Institute
Jewish Employment and Vocational Service
1624 Locust Street
Philadelphia, Pennsylvania 19103

13. Cost

Work Sample (hardware, manuals and forms) (including shipping)	$4,895.00
Tuition for one week training	350.00
One on-site training visit (plus travel expenses)	630.00
	$5,875.00

14. References

Rosen, G. A., The VIEWS Evaluation System. In A. Sax (Ed.) Innovations in Vocational Evaluation and Work Adjustment. Vocational Evaluation and Work Adjustment Bulletin, 1977, 10(3), 50-51.