

JOB - RELATED BEHAVIOR RATING SCALE

*report of a preliminary
study for OEO*

The purpose of this study was: (1) to develop and test a procedure for determining what specific job-related behaviors (excluding technical skills) are required for job retention in private and public employment; and (2) to test a procedure for constructing a behavior rating scale which will measure vocational trainees' progressive acquisition of specific job retention behavior. This report presents the background and rationale, the procedure, and the results of the study.

NEED FOR JOB-RELATED BEHAVIOR RATING

The effective use of educational technology and the psychology of learning requires that training objectives be identified in specific detail. In vocational training this is met by the technical skill specifications in the curriculum. However, it is more difficult to meet in regard to the social (or non-technical) behavior required in the performance of a job. The reason is that the literature in vocational training, vocational counseling, personnel selection and placement has little empirical data on what specific job-related behaviors are necessary for retaining a job in public or private employment.

This is true in spite of the fact that job loss for deficient job-related behavior rather than for deficiency in technical skill is a common occurrence in employment circles. A random review of employee turnover files in any sizeable employment situation will reveal a high percentage of cases where job loss is attributable to such behavior as being late to work, failure to observe safety regulations, unexcused absences from work, refusal to follow a supervisor's instructions, etc.

An effective training program would provide for the acquisition of all specific behavior required for job retention as well as for all the technical knowledge and skill required in the performance of a specific occupation. Such a level of training effectiveness has not been possible because empirical data on target

behaviors has not been available to the vocational instructor. In the absence of such data the instructor or curriculum specialist can depend only on his personal judgment regarding essential behavior for job retention. Also, the absence of trainee rating scales which measure the trainee's need for specific behavioral acquisitions and his progressive acquisition of these behaviors forces the instructor to rate the trainee in non-behavioral terms.

PERSONALITY TRAITS

One approach to studying and resolving deficiencies in job-related behavior is to assume that these behaviors represent morale, attitude, or other individual or group "dynamics" problems. The very real difficulty with this traditional assumption of causality is that non-behavioral scales which substitute the language of personality traits for the language of observable behavior have a very poor record in predicting behavior. Such scales or tests do not even correlate highly with each other on trait items, let alone with observable behavior. Peterson¹ reviewed all such instruments and came up with an intra-trait correlation among personality tests of .30 which he said "is no cause for rejoicing." His findings are supported by other authorities such as Meehl², Guion³, and Mischel⁴. The fact of the matter is that a great number of people who have been given such labels as "low morale," "poor attitude," "schizophrenia," "neurotic," "mentally retarded," "culturally deprived," etc. do perform necessary job-relevant behaviors and keep their jobs in private and public employment. Thus, the critical test of job retention capability is observable behavior, not the presence of a personality trait as measured by a personality test.

Nevertheless, the language of personality traits, however ambiguous and unpredictable it may be, will continue to be used in training programs until behavioral data and behaviorally-defined teaching processes are built into the

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curriculum and into teacher training. Inferences concerning personality traits are easy and often-used labels, substituting for precise and meaningful statements about how a person behaves personally, socially, and occupationally. Their ambiguity, unless defined in terms of specific behavior in specific situations, does not prevent their usage even in vocational training circles.

OCCUPATIONAL NORMS

The project assumed that vocational training objectives, behavioral as well as technical, must come from the occupational systems of society. Within-institution norms, whether family, mental hospital, correctional institution, residential school, or a vocational training school, need to be continuously checked against the behavioral and technical norms of the community and its occupational systems. When such validation processes are neglected, institutions develop many norms which are irrelevant outside the institution and omit norms which are necessary for survival in a community or on a job. For functional use the occupational norms must be converted into objective rating scales, so that an instructor can make valid ratings of the student's observed behavior with reference to specific criterion as defined by the occupational system for which the student is being trained.

The statements of job retention criteria used in constructing the tentative scale were obtained directly from a sample of employers in the community. These are the persons who hire, pay, retain or dismiss the graduates of vocational training programs. Item validation data also were derived from the behavioral statements of job supervisors. Other data used in establishing reliability of ratings on the scale were derived from Job Corps staff members. These procedures are described on the following pages.

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PROCEDURES

1. **Sampling.** The proposed rating scale required a sample of employers drawn from private and public employment and a sample of vocational trainees and instructors. The latter was provided through the cooperation of staff and Corpsmen at the Parks Job Corps Center at Pleasanton, California.

The employer sample consisted of supervisors in occupations for which the Job Corps was offering training at the time the study began. Available information indicated that the Job Corps was offering training for Corpsmen in eight of the nine major occupational groups listed by the USES Dictionary of Occupational Titles.⁵ Therefore, one occupation within each major group and at least three employment situations for each occupation were selected.

Within each of the employment situations the immediate supervisor of entry level, semi-skilled employees was interviewed. Also, a personnel representative was interviewed wherever there was a personnel office in charge of screening and placement. In a number of the employment situations several supervisory persons would become interested in the interview and would join together in identifying specific behaviors required for job retention in that situation. Following this selection procedure the following sample was obtained.

CHART 1
OCCUPATIONAL SAMPLE

Occupational Group	Sample Occupations	No. of Work Situations
01 Professional, Technical, Managerial	Medical Technician	3
02 Clerical and Sales Occupations	Sales	1
	Clerical	2
03 Service Occupations	Waitresses	1
	Cooks	3
04 Farming, Fishery, Forestry	Forestry	3
05 Machine Trades	Auto Mechanics	5
	Airplane Mechanics	1
	Machinists	2
06 Bench Work	Electronic Assemblers	3
07 Structural Work	Welders	3
	Maintenance	3
08 Miscellaneous	Typewriter Repair	1
		31
Total of 8 of the 9 Occupational Groups - 13 Sample Occupations		

2. **Data Collection Procedure.** Research assistants were given training in behaviorally oriented interviewing. Such training is emphasized for the very obvious reason that few persons are trained in the language of observable behavior. It was critical to the data collection procedure that the interviewers would structure the interview in such a manner as to elicit from the interviewee specific statements regarding observable behavior and not become detracted

from this focus by preoccupations with and discussion of generalized statements of either behavior or of personality traits. In the initial interviews following the training period the principal investigator accompanied the research assistants and later conducted critique sessions to refine the interview technique. Interviewees were given much social reinforcement for speaking freely about the specific behavior requirements for persons under their supervision. Detailed notes were kept by the interviewers and transcribed daily.

3. **Item Pool.** All of the specific statements regarding behavior required for job retention obtained in the data collection procedure were pooled *across occupations*. After duplications were eliminated, a total of 93 items was obtained.
4. **Item Ranking.** The 93 items were supplemented by eight validity items and a form consisting of 101 items was prepared on which supervisors could rate each item in terms of its essentiality for job retention. The validity items were added simply to rule out indiscriminate ratings. These were worded so that they would break a response set of marking all items in one direction if the rater had such a set. Only one completed form had to be eliminated because of this pattern rating.

The form provided for rating each item in one of three categories; (1) essential for retaining a job, (2) desirable but not essential, (3) unimportant. This form was sent to each of the supervisors who had been interviewed initially in selecting the items. An additional sample of supervisors in the same occupational categories was added. A total of 54 such ratings was obtained.

The item rating data were treated statistically in the following manner. To use all of the obtained ratings in selecting scale items, each category was given an assigned weight of 0 for "essential," 1 for "desirable," and 2 for "unimportant." The number of ratings for each category was then multiplied by its corresponding weight and added for each item. This sum was then divided by the number of total ratings for the item. Thus, a weighted mean was obtained for each item. The mean is a function of the number of ratings in each category, varying from 0 (essential) to 2 (unimportant), to be used for inter-item comparisons. Finally, the items were ranked according to these weights and a cut-off point for retention based on a natural "break" in the distribution was established. The following 43 items were thus retained in the tentative scale.⁶

TENTATIVE SCALE ITEMS

1. Reports to work on time.
2. At work every day except holidays.
3. Keeps tools and equipment clean.
4. Keeps necessary records up to date.
5. When conflicts with others arise he resorts to physical combat.
6. Keeps work area clean.
7. Drinks on the job.
8. Uses narcotics on the job.
9. Wears required uniform or dress on the job.
10. Takes company equipment, tools, or products from the working areas without permission.
11. Makes necessary corrections when supervisor points out discrepancies.
12. Makes derogatory statements regarding other trainees and supervisors.
13. Swears loudly so that others can hear.

14. Telephones if forced to be late because of an emergency.
15. Turns out quality work rather than fast, sloppy work.
16. Gives an honest account of his personal skills, knowledge, and work experience.
17. Learns about new products and new methods when required by the job.
18. Works scheduled number of hours.
19. Takes necessary security precautions to protect company and personal property.
20. Notifies appropriate persons of accident within specified time.
21. Polite to visitors.
22. Fakes illness to get out of work.
23. Fills out all papers pertaining to the job accurately.
24. Operates only the equipment which he is authorized to operate.
25. Uses sex swear words when secretaries or other females can hear.
26. Gambles or solicits while on the job.
27. Does the job he is told to do and the way he is told to.
28. Conforms to the rules of the organization.
29. Wears I.D. badge when required.
30. Is conservative with company materials.
31. Undermines the authority of a supervisor by talking derogatorily about him in front of others.
32. Admits he did something if he did it, i.e., doesn't lie or evade.
33. Checks in for another employee.
34. Explains and has all absences approved.
35. Brings personal weapons to work, e.g., knives, brass knuckles, revolvers.
36. Uses the proper tools for the job.
37. Tactful in dealing with people.
38. Refers to other people by their names, not as "gimpy," "nigger," "white boy," etc.
39. Makes racially discriminatory statements regarding other employees or supervisors.
40. Personal appearance and grooming appropriate for the work situation.
41. Works without constant and immediate supervision.
42. Leaves other employees' and company equipment and tools alone unless explicitly told or given permission to use such materials.
43. Obtains permission before making personal calls on office telephone.

5. **Agreement on Item Ratings Between Supervisors and Job Corps Instructors.** As a matter of interest a sample of 44 instructors in Parks Job Corps Center's vocational training staff also were asked to rate each of the 101 items in the item pool. The sample instructors were given the same form and instructions as were given to the 54 supervisors in private and public employment. The results of this test (Pearsonian rank order correlation) show a correlation of .93. When the formula for item retention was applied to the instructors' rating data, only the following additional items were obtained. "Smokes only in designated areas" and "Replies in a cooperative way when supervisor gives an order" would have been retained. Items which would have been excluded by instructors' ratings were "gives an honest account of his personal skills, knowledge and work experience," and "does not undermine the authority of the supervisor by talking derogatorily about him in front of other employees."

The rating data obtained from job supervisors determined item retention on the tentative behavior rating form. However, it should be noted that the instructors' ratings indicate a very high level of agreement with supervisors on what behaviors a graduate of a vocational training program must acquire in order to retain a job.

6. **Scale Form.** The tentative scale was designed to obtain behavioral ratings in terms of approximations. This is based upon the principle that behavioral learning occurs through step-wise approximations of criterion. At least two alternate forms for presenting approximate ratings are suggested. The form which corresponds most with common scale terminology is to use judgmental statements alone, such as "always," "usually," "seldom," and "never." These may be arranged under each item as below:

Item 10. Takes company equipment, tools, or products from the working premises without permission.

NEVER	SELDOM	USUALLY	ALWAYS
1	2	3	4
5	6	7	

Item 14. Telephones if forced to be late because of an emergency.

NEVER	SELDOM	USUALLY	ALWAYS
1	2	3	4
5	6	7	

A form which would provide specific frequency scoring on each behavioral item, and more planning by the rating staff, is to express the behavioral approximations in terms of rates of acts, or units of behavior. Thus, target behavior may be "always" and is assigned a zero score (0). Rate scores from 1 to 5 or more may be placed after zero. Each number represents the number of times, in a stipulated rating period (one hour, one day, or one week, etc.), that the trainee did not behave up to the criterion required to retain a job. This would be expressed on the form as follows:

Item 1. Reports to work on time.

0	1	2	3	4	5
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Always Number of times late

Item 22. Fakes illness to get out of work.

0	1	2	3	4	5	6	7
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Always Number of times he faked illness when late or absent from work

7. **Agreement Between Behavior Raters.** A test of the agreement between two independent raters was done. Thirty-three Corpsmen at Parks Job Corps Center and two groups of instructors who had observed these trainees' behavior over a period of at least two weeks were selected. Each trainee was rated by one basic education and one vocational instructor. Results (using Pearsonian technique) indicate an overall agreement between two raters of .92. This high correlation suggests that reliable ratings of trainee behavior may be obtained by using only one trained rater after his agreement with another rater is established.
8. **Use of the Scale in Measuring Trainee Progress.** For maximum value of the proposed behavior rating method the ratings should be obtained at stipulated intervals during a trainee's enrollment. A base level measure should be obtained as soon as the instructor has had the opportunity to observe the trainee's behavior for at least one week. This baseline rating establishes: (a) the trainee's

beginning approximation of the behavior required for job retention (training need); (b) the specific behaviors which must be increased in rate during training; and (c) the specific behaviors which must be decreased in rate.

It is important to note in this context that the criteria for retaining a student in a vocational training program must differ in many respects from the criteria for job retention in employment situations. In the training situation an item such as Item 24 "operates only the equipment which he is authorized to operate" may be rated "seldom" or 5 at the end of the first week of training. Furthermore, the item may be further quantified by the instructor and instead of the scale number 5, he may substitute the *number of times* the inappropriate behavior occurred in one week, e.g., 3 times. The *immediate* training goal then is to reduce this behavior to no more than two times next week (unless, of course, the inappropriate behavior is too costly or too dangerous for the subject or for other people, in which case the goal becomes zero times each week or "never"). However, in an employment situation, the employer may dismiss the employee for *one single instance* of operating equipment which the employee is unauthorized to operate. In other words, the objective of a training program is to assist trainees to *acquire job retention behavior* while the employment situation requires *the performance* of the essential behavior at the *required level*. There are modifications of this general statement, of course, but the essential point is evident.

PERIODIC RATINGS

After the baseline behavior rating has been obtained a series of ratings should be scheduled, at stated intervals of time, to measure the trainee's progressive acquisition of target behaviors. Since scoring all of the items is somewhat time consuming, the following procedure is suggested for periodic ratings *after* the baseline behavior is measured.

Each item on which the baseline rating is above the critical score would be listed. These items, showing deficient behaviors, would thus be seen by the staff as requiring maximum attention during the initial part of the training program. Certainly, if a trainee is rated 7 or "never" on being on time, his chance of holding a job is very slender. This behavior is *in critical need of change*. The list of critical items for

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each trainee would then be used, in subsequent ratings, to measure his improvement in *those behaviors* in which *he has been critically deficient*. In this manner each trainee has a tailor-made item list which represents his unique training needs.

As the trainee moves toward graduation from the training program, the full scale should be repeated to determine remaining behavioral deficiencies, and the list of critical items would be revised. The training program would focus on the progressive improvement in the rate of occurrence of the desired target behavior, and periodic ratings on these critical items would provide a measure of training effectiveness.

Whenever a given trainee's ratings are "always" for all appropriate behavior and "never" for inappropriate behavior, he is ready, so far as job relevant behavior is involved, for graduation and placement in a job. He still may need to reach target levels in technical skill and thus remain in the training program for a time. In all probability he will, in fact, acquire these technical skills more rapidly and efficiently if and when his job relevant behavior improves. This prediction is consistent with a primary assumption of this study, i.e., training in job relevant behavior is a necessary and indigenous part of all vocational training.

IMPLICATIONS FOR FURTHER STUDY

The procedure presented in this report appears to be appropriate for the task of determining valid behavioral criteria in occupational training and/or rehabilitation programs and for designing instruments for measuring trainees' progressive approximation of these criteria. The tentative scale produced in this study has a number of obvious deficiencies which could be corrected in further studies following this scale construction model.

A major problem consists of obtaining items which represent observable units of behavior. A casual inspection of the tentative items indicates that some, par-

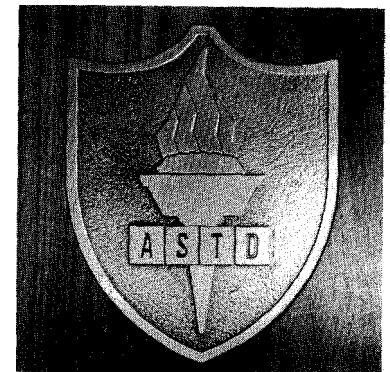
ticularly Items 11, 15, 21, 27, 30 and 37, need to be further reduced to more discrete behavior. This calls for more probing inquiries on the part of interviewers to obtain statements as to what specific behavior is represented by "politeness," "conservative," "tactful," etc. It is critical to this approach that the interviewer makes sure that the respondent describes behavior rather than his subjective inferences regarding a personality trait.

Further studies are necessary to: (1) refine and validate the tentative list of behavioral items on the tentative scale; (2) test the assumption that there are core behavioral requirements common to all occupations and significant differences between major occupational groups in required behavior; and (3) test the effectiveness of the resulting scale or scales by following sample trainees through vocational training and for stipulated periods of post-training employment experience.

Research on the teaching of social-occupational behavior is as essential as devising instruments for assessing such behavior. Recent research on behavior which follows the reinforcement learning paradigm provides a very promising approach to this problem. Knowing what the behavioral objectives are and using valid instruments for measuring the trainees' approximations of those objectives does not automatically assure instructional skill in helping a trainee achieve those objectives. Consequently, effective use of any behavior assessment instrument depends upon instructional skill in teaching behavior.

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