

Chapter 1

Introduction

R-FVII Background

The Reading-Free Vocational Interest inventory grew out of a test first developed at the Columbus State School for the Mentally Retarded in Columbus, Ohio (Becker, 1967). Later refined and researched, two early articles appeared in the literature describing the new test for institutionalized persons with mental retardation (Becker & Ferguson, 1969a; 1969b). The early success of the new test inspired educators in the Ohio Department of Mental Hygiene and Correction (now called Ohio Department of Mental Health and Mental Retardation) to expand the use of the instrument beyond the borders of Ohio. Meetings followed with officials from the various Ohio departments of training and special education who resolved that the author of the original test (1967) write a proposal to a federal agency for funding an expanded version of the Ohio instrument.

Funded in 1968 by the U.S. Bureau of Education for Handicapped Children, a major study entitled "Reading-Free Vocational Interest Inventory" was begun. The project was completed 41 months later and a final report, detailing the results of the study, was submitted to the federal funding agency (Becker, 1971). A series of articles soon followed in the literature: the vocational preferences of EMR youth (Becker, 1973a; 1973b), on the job training of subjects with mental retardation (Becker,

1976), career education of TMR adults (Becker, Widener, & Soforenko, 1979), and correlations of expressed and inventoried vocational interest of clients with mental retardation (Becker, Schull, & Campbell, 1981).

The R-FVII:2 is the year 2000 revision of the 1975 and 1981 *Reading-Free Vocational Interest Inventory*. The 1975 version of the test first published by the American Association on Mental Deficiency (now called American Association on Mental Retardation) consisted of separate test booklets for males and females with mental retardation (Becker, 1975). With the passage of Title IX of the Education Amendment of 1972, prohibiting sex discrimination in education, and the publication of the National Institute for Education's *Guidelines for Assessment of Sex Bias and Fairness in Career Interest Inventories*, the author of the inventory was urged to revise the instrument to meet the current guidelines.

A revision of the R-FVII appeared in 1981 (Becker, 1981; Becker & Becker, 1983) that corrected the concerns reported in the guidelines and met the compliance regulations of Title IX, the prohibition of educational discrimination on the basis of sex. The test booklet of the 1981 revision was common to both genders and had a balance of males and females doing job tasks in all vocational areas. Scores were reported on a single profile form for both sexes.

Nineteen years after the work on the revised R-FVII by Ralph L. Becker, a research psychologist, an updated and re-standardized version called the R-FVII:2 is available. Long-time test consumers will find most of the standard test features intact: the 11 interest areas, administering and scoring procedures, norms for male and female subjects, and a pictorial inventory booklet. However, the R-FVII:2 will reveal some important changes in the artist-drawn pictures that include refinements and modifications and a more identifiable target figure; norms for regular classroom individuals not represented in the original R-FVII; clusters that combine interest area scores for another way of looking at measured interest; profiles of individual performance on the interest and cluster scales; and normative tables more extensive than in earlier versions.

A major effort in redoing the R-FVII:2 for the year 2000 was to edit out outmoded content of pictorial artwork and to add contemporary occupational tasks in the inventory booklet. Also, the content of the manual was given a new format, and relevant tables and graphs appear in the same chapter with the text and no longer are placed in the appendix as in the earlier version (Becker, 1988).

The Nature of Interests

Before describing how the R-FVII:2 assesses vocational interest in individuals, a brief discussion of the types of interest is beneficial. There have been four major interpretations of the term interest, connected with as many different methods of obtaining data. In an attempt to clarify thinking in this area, Super (1947) classified them as (1) expressions, (2) manifestations, (3) tests, and (4) inventories of interests. Power (1984) considered three of Super's classifications as accounting for the nature of interest. He included "tests" as a subclassification of "inventories."

Expressed interest occurs when an individual makes a verbal statement of liking for an activity, task, or occupation. The individual states that he/she prefers or either dislikes

something.

Manifest interest tends to be synonymous with participation in an activity or occupation. An example sometimes given is that the high school senior who is active in the dramatic club has artistic or literary interests.

Tested interest refers to interest as measured by objective tests. It differs from inventoried measurement which is based on subjective self-estimates. Tested interest assumes that interest in an activity or occupation will result in an accumulation of information about the activity or occupation, and the type of information can be measured.

Inventoried interest is assessed by means of lists of activities or tasks which have resemblance to some occupation or work. The result is a pattern of interest which research has shown to be rather stable (Crites et al., 1962). The classifications of tested and inventoried interest are determined through the administration of paper and pencil (or computer disc) assessment. The R-FVII:2 is classified as an *interest inventory* in both the Super and Power classifications. Each scale of the R-FVII:2 is composed of pictorial items that have occupational significance for a particular vocational interest area. Preference for job activities on the R-FVII:2 and dislike for others will result in high to low patterns of vocational interest on the 11 scales.

Assessing Vocational Interest

The R-FVII:2, as well as other interest inventories, usually includes items that relate to a wide range of activities, jobs, and tasks, and the individual is asked to select from among them. In developing an interest inventory that will assess vocational interest of individuals, a choice is made by the developer for one of two ways. If the inventory is to compare an individual's scores with the scores of individuals successfully employed in a variety of occupations, then the *people similarity method* is used (Wallace et al., 1992). The assumption made when this approach is used is that individuals are drawn to a specific occupation because of

their interests. A second method uses a somewhat different approach to assessment. It focuses on the relationship between an individual's preferred and disliked activities and the activities and job tasks that are preferred in certain occupations. This process of interest assessment is termed the *activity similarity method* (Wallace et al., 1992). The R-FVII:2 was developed using the latter method. As noted earlier on the topic discussing the nature of interests, the R-FVII:2 presents 165 pictorial items of occupational significance for which individuals are required to sort out vocational preferences and dislikes. The inventory was developed using a forced-choice technique whereby an individual must choose the vocational activity (one from each triad) that is most characteristic of himself/herself. The method of administering and scoring the R-FVII:2 is presented in Chapter 2.

Description of the Inventory

The R-FVII:2 like its predecessor, is a non-reading vocational preference inventory for use with individuals with mental retardation, learning disabilities, the disadvantaged, and regular classroom students. The non-reading feature of the inventory requires no verbal symbols or written statements for interpretation by examinees. Instead, pictorial illustrations with occupational significance are presented in a forced-choice technique. Presenting pictorial activities of individuals engaged in clearly illustrated, artist-drawn job tasks circumvents the decoding and reading comprehension barrier for those individuals with limited verbal or reading ability. The fact that many well-known and commonly used interest inventories have proven to be unsatisfactory with handicapped individuals because of the requirements for verbal abilities has been cited in the literature (Brolin, 1982; Wallace et al., 1992).

The R-FVII:2 was developed to provide systematic information on the range of interest patterns of the special needs individual who is diagnosed with mental retardation, learning

disability, and the disadvantaged, as well as vocational interest information on the regular classroom student. A disadvantaged individual is anyone who functions below average expectations primarily as a result of cultural, environmental, economic, or educational deprivation. The R-FVII:2 interest patterns furnish information for individuals engaged in a wide range of occupations and job tasks at the unskilled, semiskilled, skilled and technical levels. The occupations represented by the R-FVII:2 are not limited to entry-level. The companion to the R-FVII:2, the *Occupational Title Lists* (Becker, 2001), itemizes occupations in each of the interest areas beyond an entry level classification.

This second edition called the R-FVII:2 is the product of a comprehensive review of 25 years with physically and mentally handicapped individuals in the United States and foreign countries. Revision of the earlier versions of the manual and inventory booklet (1981, 1988) accounts for the numerous modifications and deletions of pictorial items since first published by the American Association on Mental Deficiency in 1975. The items of the R-FVII:2 have undergone many item analyses with samples of different populations to achieve the current level of survival. The R-FVII:2 interest scale was normed on over 15,000 individuals of which 6505 were persons with mental retardation who were attending school, in programs of vocational training, employed in the community in competitive work, and engaged in sheltered work. Chapter 4 presents data on the normative sample.

The R-FVII:2 Inventory Booklet

The current inventory booklet consists of 165 artist-drawn pictures of occupational significance displayed in 55 triads. Illustrations are drawn with relevant occupational tools or equipment and set in a natural environment. Specifications for artwork called for clean, bold, line drawings, free of fine detail and figure-ground problems of perception. The dominant figure is drawn to enable the examinee to identify with the depicted activity or task.

The R-FVII:2 inventory booklet is designed to meet the following guidelines listed earlier in this section: (a) provide a simple test booklet minimizing sexual stereotyping in occupations; (b) have a common item-pool for both sexes; (c) obtain a balance of male and female target figures; and (d) desex any grammar and vocabulary that may appear in the cover page of instructions of the booklet.

The inventory booklet is available as a consumable test booklet. It is designed with two detachable sheets for scoring and profiling results. A discussion of administering and scoring the R-FVII:2 is given in Chapter 2.

The R-FVII:2 Scores

Once the inventory booklet is administered and scored by the examiner, the results are interpreted in terms of interest area scores and cluster scores.

Interest Area Scores. Interest scores are obtained for 11 different vocational areas. These are listed as:

1. Automotive
2. Building Trades
3. Clerical
4. Animal Care
5. Food Service
6. Patient Care
7. Horticulture
8. Housekeeping
9. Personal Service
10. Laundry Service
11. Materials Handling

Interest scores are derived by counting the number of items (X's on the answer sheet) selected in a given area and summed for a total score. The raw score total for each interest area is converted to T-scores and equivalent percentile ranks using normative tables in the appendix.

Cluster Scores. Cluster scores are derived from a cluster analysis of the 11 interest area

scores on samples of individuals with mental retardation, learning disability, the disadvantaged, and regular classroom students. Kerlinger (1973) defines a "cluster as a subset of 'objects'—persons, tests, and so on—the members of which are more similar or closer to each other than they are to members outside the cluster" (p. 576).

In practical situations investigators who have collected a series of test scores (such as the 11 interest area scores on the R-FVII:2) on a sample of subjects wish to know which subjects have similar profiles on the obtained measures. Using the R-FVII:2 in a sample of 859 subjects, five subsets of persons were identified using Ward's (1963) minimum variance technique. In a study conducted by Becker (1987) on the clustering of 300 educable mentally retarded males and females using the R-FVII, a five cluster solution was obtained showing distinctive patterns of occupational interest markedly similar to subsets obtained with the R-FVII:2.

The names of the five clusters (formed groups) and the interest areas which contribute to them are listed below.

1. Mechanical
Automotive
Building Trades
2. Outdoor
Animal Care
Horticulture
3. Mechanical-Outdoor
Automotive
Building Trades
Animal Care
Horticulture
Housekeeping
4. Food Service-Handling Operations
Food Service
Materials Handling
5. Clerical-Social Service
Clerical
Patient Care
Personal Service
Laundry

The cluster scores are derived by summing the raw score totals of each contributing

interest area scale for that cluster. The total raw score for each cluster is converted to standard scores (Cluster Quotient) and equivalent percentile ranks using normative tables in the appendix.

Testability of the Subject

The usefulness of the information obtained by administering the R-FVII:2 depends on the ability of the subject to understand and follow instructions, comprehend and interpret the contents of the pictorial items, and to record his/her responses as given in the instructions. Any number of physical or mental conditions may impair this ability. Although the handicap of limited reading skills is removed in the R-FVII:2 through the presentation of pictures replacing words, there still remains the question of an examinee's comprehension of what the picture is depicting. The question is most vital for subjects with mental retardation whose condition may be so severe as to make their responses useless regarding any meaningful interpretation of the results. In some cases a one-to-one administration of the inventory may be the sole process to collect the data. It is the responsibility of the person administering the inventory to determine whether the examinee's performance may be considered valid for the purpose the inventory is being given.

The manual for the MMPI-2 (Hathaway & McKinley, 1989) testifies to the problem of the testability of the subject. Although the statement given in the manual is directed to an individual's deficiencies in reading skills, it may be considered a general observation for test administrators. The authors state that: "The item content must be meaningful to the subject, given his or her range of life experience (a more difficult challenge for the very young, the intellectually limited, the learning disabled, the severely culturally deprived, or the recent immigrant to this country for whom the meaning of many English idioms may be obscure)" (p. 14).

Research

The R-FVII:2 may be used in many types of research projects when vocational interests are being investigated. Because no reading skill is required to challenge the subject, the R-FVII:2 can be administered to non-readers or to those with limited reading comprehension and to subjects for whom English is a second language.

Examples of specific research applications of the R-FVII:2 are:

1. To determine the relationship between an individual's expressed interest in an occupation and measured vocational interest.
2. To assess the relationship between an individual's current occupation with performance on measured vocational interest.
3. To determine the predictive validity of the instrument using an individual's current measured interest assessment and later follow-up when in an occupation.
4. To assess if exposure to certain types of vocational experience and training have a significant effect on pretest and post-test vocational interest scores of males and females.
5. Is there significant relationship between measured vocational interest and academic achievement? Between socio-economic status and vocational interest?
6. Are there areas of vocational interest in which males and females most differ? Are there vocational interest areas of least difference?
7. What is the relationship between job satisfaction and measured vocational interest among males with mental retardation? Among females with mental retardation? Among males who are learning disabled? Among females who are learning disabled?

Chapter 2

Administration and Scoring

User Qualifications

The amount of training required of the examiner to properly administer, interpret, and use the test results of the R-FVII:2 is considered to be Level B, as defined by the American Psychological Association on Test Standards. The R-FVII:2 may be administered and scored by a trained clerical or paraprofessional. However, decisions with regard to vocational planning, training, and job placement should be made by trained professionals such as vocational counselors, work-study teachers or coordinators, psychologists, vocational trainers and supervisors, occupational therapists, and other professional personnel who have knowledge of guidance and counseling practices and are trained in test and measurement issues.

The R-FVII:2 may easily be administered within a 45-minute class period including distribution of the Inventory Booklet, reading of instructions, selections by examinees, and collection of all test materials. The average amount of time to complete the inventory is twenty minutes or less.

Administration Instructions

The R-FVII:2 is self-administering and has no time limit. It is suitable for use with subjects from 12 through 61 years of age. It can be

administered to individuals on a one-to-one basis as well as to groups the size of a classroom. Males and females are provided with the same test and a common Inventory Booklet. The general guidelines for individual and group administration of the R-FVII:2 are reviewed below.

Individual Administration

When administered individually, the examiner reads aloud the identifying information and assists the examinee in completing this section. When the necessary identification information is completed, the examiner continues reading aloud starting with the section: How to Use this Booklet. After these instructions are read, the examiner asks, "Do you understand what to do?" After answering any questions, the examiner opens the inventory booklet to triad 1, and says, "Here are three pictures. Find which job or kind of work you like the best and draw a big circle on that picture." After the examinee completes triad I, the examiner says, "Now do all of the other rows of pictures and be sure to choose only one picture in each row."

After the examinee completes the booklet, inspect each triad for the selection of a single picture in each group of three. If the examinee

has made an error, and selected more than one picture in a triad, instruct the subject to point to the item he or she really wants in that triad. The remaining drawings in the triad should be marked "void" by the examiner.

The R-FVII:2 is suitable for individual administration to subjects with physical or intellectual limitations who require close supervision by the examiner. In some cases it may be necessary to cover one of the triads on a page, using a half sheet of blank paper, to reduce visual stimuli interfering with an examinee's selection. This procedure is continued until all triads have been reviewed by the examinee.

Group Administration

When group administration is practical, a slightly different method is used. Before distributing inventory booklets to examinees, the examiner says:

Examiner: This is not a test. We wish to know what kind of work you would like to do. You are going to be given a booklet and a pencil. When you receive your booklet, please leave it closed until you receive more instructions.

Distribute test materials to examinees. An examinee may be chosen to assist the examiner in distributing all materials. After test materials are distributed, say:

Examiner: Look at the booklet where you will see spaces for your name, date, birthdate, etc. (Demonstrate with your copy.) Write in all of the information where it tells you to. (Examiners may require only the examinee's name and date—all other data being available from personal data records.)

After all examinees have completed the necessary top lines of the booklet, the examiner says:

Examiner: Now I'm going to tell you how to use this booklet. Listen very carefully so that you will understand what to do. This is not a test. There are no wrong or right answers. Your answers will tell about the kind of work you like best. On each page of this booklet there are groups of three pictures in a straight row, just like the three pictures at the bottom of your booklet. Look at the example on your booklet. (Demonstrate with your copy. Pause 15 seconds. If you liked best the picture of building a wall, you would make a big circle on this picture. You can only choose *one picture* of the three, so choose the one you like the best.

If you like all three pictures you must decide on only one, so make a circle on the picture you like best. If you do not like any of the three pictures, choose the one you would do for only a very short time.

There are many rows of pictures of people working at different jobs just like the pictures in your example. Be sure you *circle one picture* in each row. (Pause.) Do you have any questions? (Answer all questions.)

Now turn to the next page and look at the three pictures at the top of this page. (Demonstrate with your copy.) Remember: choose only one picture and put a circle on it. When you finish row 1, go on to the next row. Then go right on to the next

page until you finish all the pages of pictures in the booklet. Try not to spend too much time on any group of pictures. You may begin.

The examiner should attempt to visually check booklets five minutes after examinees begin to work, to determine that examinees are marking correctly. During the testing, rechecks should be made while monitoring the class. As each examinee completes the inventory, individual booklets may be collected and inspected for marking and completion of necessary identifying data. If booklets are incorrectly marked, return them to the examinees and instruct on the correct method.

Scoring

The interest area scores and cluster scores are obtained differently on the R-FVII:2. Interest area scores are obtained from the Inventory Booklet, whereas cluster scores are computed from interest area scores reported on the Record of Interest and Cluster Scores form discussed in Chapter 3.

Figure 2.1 presents page 1 of the Inventory Booklet, showing triads 1 and 2. Figure 2.2 presents the Score Sheet for the R-FVII:2. The triad numbers (1 to 55) are located outside the score grid in the left column. The capital letters (A through K) at the top of the grid represent each of the 11 interest areas (A = Automotive; B = Building Trades; etc.). The lower case letters inside a grid box correspond to a pictorial item in each of the 55 triads.

To score the inventory, remove the first perforated sheet called the Record of Interest and Cluster Scores from the back of the Inventory Booklet. Enter the identifying information at the top of the page. This information may be taken from the front cover of the booklet or from personal data records. Write in the norm group that is most like the subject administered the inventory.

Beginning with triad 1 of the Inventory Booklet (Figure 2.1) and using the scoring grid (Figure 2.2) mark an X on the lettered box or boxes that correspond to the picture selected by the examinee in triad 1. For example, if the examinee placed a circle on the picture of a carpenter building a wall, the box with the letter "b" is marked with an X. Similarly, selecting the picture of a trainer walking a horse, the boxes with the letter "d" are marked with an X. This procedure is followed for each of the 55 triads. It is necessary that the examiner mark all lettered boxes in a triad indicated by the item circled in the Inventory Booklet.

After transferring all of the examinee's selections from the Inventory Booklet to the scoring grid, you may dispose of the booklet. Next, obtain the raw score total for each interest area by counting the number of Xs in each vertical column (A, B, C, etc.). Record this raw score total for each interest area in the space titled TOTAL at the bottom of the grid. On the left margin of the Score Sheet are the letters A through K; record the raw score total for each interest area on the appropriate line here—the raw score totals are found in the row titled TOTAL, located at the bottom of the grid.

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