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## **A Study in the Use of Psychological Tests in Determining Effectiveness and Ineffectiveness Among Practicing School Administrators**

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To the Graduate Council:

I am submitting herewith a dissertation written by Michael Yates Nunnery entitled "A Study in the Use of Psychological Tests in Determining Effectiveness and Ineffectiveness Among Practicing School Administrators." I have examined the final electronic copy of this dissertation for form and content and recommend that it be accepted in partial fulfillment of the requirements for the degree of Doctor of Education, with a major in Educational Administration.

Ralph B. Kimbrough, Major Professor

We have read this dissertation and recommend its acceptance:

Orin B. Graff, Galen Drewry, E. O. Milton, Dale Wantling

Accepted for the Council:

Carolyn R. Hodges

Vice Provost and Dean of the Graduate School

(Original signatures are on file with official student records.)

March 18, 1958

To the Graduate Council:

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Ralph B. Kimbrough  
Major Professor

We have read this thesis and  
recommend its acceptance:

Chas. B. Gray  
Yakov M. Lewy  
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Ralph W. Mantling

Accepted for the Council:

Ralph W. Mantling  
Dean of the Graduate School

33  
#39

A STUDY IN THE USE OF PSYCHOLOGICAL TESTS IN DETERMINING  
EFFECTIVENESS AND INEFFECTIVENESS AMONG  
PRACTICING SCHOOL ADMINISTRATORS

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A THESIS

Submitted to  
The Graduate Council  
of  
The University of Tennessee  
in  
Partial Fulfillment of the Requirements  
for the degree of  
Doctor of Education

---

by

Michael Yates Nunnery

June 1958



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## CHAPTER I

### INTRODUCTION

#### Background of the Study

In 1952 the Department of Educational Administration and Supervision of the University of Tennessee undertook a cooperative research project with the Southern States Cooperative Program in Educational Administration (since 1952 the name of the organization has been changed to Associated Programs in Educational Administration). Generally speaking, the central aim of the project was, and is, the improvement of educational leadership in the Southern States Region. To be more specific, the aims of the project at the University of Tennessee are probably best stated in terms of its original purposes.

1. To validate some characteristics of (a) effective educational administration and (b) effective school administrators.

2. To create a program which will be effective in developing desirable characteristics in educational administration.

3. To further round out and fill in the pattern of studies of the Southern States Cooperative Program in Educational Administration, which are designed to develop new insights in the nature of educational administration, the characteristics of successful administration and preparation programs for developing administrators who possess the

characteristics needed for effective administration of public education.<sup>1</sup>

As can be determined by the foregoing, the research activities of the staff at the University of Tennessee have been centered around defining and identifying the behavioral characteristics of effective and ineffective school administrators and experimenting with programs to develop the desirable characteristics.

The statements of behavioral characteristics developed in the program were incorporated in a rating guide, which later became known as the Tennessee Rating Guide.<sup>2</sup> Several studies have been conducted for the purpose of validating the characteristics incorporated therein. Also, as a part of the activities, attempts have been made to determine sounder methods of selecting students for graduate study in the Department of Educational Administration and Supervision of the University of Tennessee.<sup>3,4</sup> The present thesis

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<sup>1</sup>"The University of Tennessee Kellogg Research Project on Behavioral Characteristics of Effective and Ineffective School Administrators--A Progress Report," University of Tennessee, December 1956, pp. 1-2. (Multilithed)

<sup>2</sup>Ibid., p. 2.

<sup>3</sup>Charles R. Moffett, "Operational Characteristics of Beginning Masters' Students in Educational Administration and Supervision" (Unpublished Ed. D. thesis, University of Tennessee, June 1954).

<sup>4</sup>James N. Luton, "A Study of the Use of Standardized Tests in the Selection of Potential Educational Administrators" (Unpublished Ed. D. thesis, University of Tennessee, March 1955).

behavior. However, it was felt that evidence exists to support the idea that paper and pencil instruments will provide a "quick look" at an individual's behavioral characteristics. Furthermore, it was noted that a large number of the graduate schools in the nation utilized psychological tests of the paper and pencil variety in some form in their selection processes.

As has been previously mentioned, there have been two other studies in the use of psychological tests in the selection process at the University of Tennessee. The present study was viewed as an extension and modification of the studies reported by Moffett<sup>5</sup> and Luton<sup>6</sup>.

It was felt that another study in the area of selection was needed for four major reasons:

1. The behavioral characteristics describing school administrators have been more sharply defined since the completion of the studies reported by Moffett and Luton.

2. In his study, Moffett used the 1951 version of the University of Tennessee Rating Guide, Characteristics of School Administrators, many items of which were later found to be ambiguous. Luton used only thirteen of the twenty-seven items of the University of Tennessee Rating

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<sup>5</sup>Moffett, op. cit.

<sup>6</sup>Luton, op. cit.

Guide, Characteristics of School Administrators. The thirteen items used by Luton were the items which Moffett found had reliability coefficients of .70 or better. Based on research completed since the studies of Moffett and Luton the University of Tennessee Rating Guide, Characteristics of School Administrators has undergone revisions. Thus, there was a need for a study in which all of the items of the University of Tennessee Rating Guide, Characteristics of School Administrators were utilized.

3. If certain psychological tests, or parts thereof, could be found which would identify the behavioral characteristics in question, such tests could eventually become a part of the selection process for graduate study in the Department of Educational Administration and Supervision of the University of Tennessee.

4. It was also felt that the findings of the study would provide help in the guidance of students in the preparation program if tests could be identified which would accurately foretell a person's strengths and weaknesses.

#### Limitations of the Study

The study was restricted to:

1. The group of thirty-five practicing school administrators selected for study.
2. The selected psychological test battery



administered to each school administrator selected for study.

3. The field rating of each school administrator selected for study, utilizing the February, 1957, revision of the University of Tennessee Rating Guide, Characteristics of School Administrators.

### Definition of Terms

University of Tennessee Rating Guide, Characteristics of School Administrators. The inventory of behavioral characteristics of school administrators, a field rating on which was used in the present study as the criterion for the validation of the psychological tests. Hereafter in the present study it is referred to as the Tennessee Rating Guide or simply as the Rating Guide.

Behavioral characteristics. Characteristics possessed by individuals which are identified through an observation of behavior. The items included in the Tennessee Rating Guide (see Appendix A) describe behavioral characteristics.

On-the-job visits. Those visits made by members of the research staff to observe each school administrator selected for participation in the present study in his on-the-job environment. An "on-the-job visit" team was composed of two persons. The purpose of the on-the-job visits was to gain insight into the behavioral characteristics of the administrators in question and arrive at a rating on the Tennessee Rating Guide.



Field rating. A rating, utilizing the Tennessee Rating Guide, of the behavioral characteristics of an individual school administrator in an on-the-job situation.

The staff. Those persons who participated in the on-the-job study of the school administrators and assisted in making the field ratings. This group was composed of advanced graduate students and regular staff members of the Department of Educational Administration of the University of Tennessee.

School administrators. Those persons who were actively engaged in some administrative capacity in the public schools (grades one through twelve). In this study, this group included superintendents, supervisors, elementary and secondary school principals, attendance officials, and assistant principals.

The team rating method. The method by which each school administrator included in the study received a field rating utilizing the Tennessee Rating Guide. Essentially, it consisted of a "pooling" of knowledge about the behavioral characteristics of the school administrator in question by each member of the staff following the on-the-job visits. Then after a full discussion of all available data the administrator in question was given a field rating.

Critical problem technique. A technique utilized by members of the staff to gain insight into the behavioral

characteristics of the selected school administrators. The technique involved asking an administrator to relate some fundamental problem or issue that he had faced, describing the decision(s) he had made and the course(s) of action that had been followed within the confines of the decision(s). Furthermore, the school administrator in question was asked to explain why the particular course(s) of action had been taken.

Upper Group. Those administrators who averaged 4.0 or better as a result of a field rating on the Tennessee Rating Guide. Gentry concluded that a rating of 4.0 or better characterized the effective school administrator.<sup>7</sup>

Middle Group. Those administrators who averaged between 3.1 and 3.9 as a result of a field rating on the Tennessee Rating Guide.

Lower Group. Those administrators who averaged 3.0 or below as a result of a field rating on the Tennessee Rating Guide. Gentry concluded such a rating characterized the ineffective school administrator.<sup>8</sup>

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<sup>7</sup>Harold W. Gentry, "Patterns of Behavioral Characteristics Exhibited by School Administrators" (Unpublished Ed. D. thesis, University of Tennessee, June 1957), p. 94.

<sup>8</sup>Loc. cit.

## Procedures Utilized in the Study

The procedures which were utilized in the study are presented under the following headings:

1. The Subjects and Their Selection.
2. The Psychological Testing Program.
3. Field Ratings of the Subjects.
4. Treatment of the Data.

### The Subjects and Their Selection

The subjects included in the study were all practicing school administrators. Two criteria were used as a basis for the selection of subjects. First, the individual in question had to be actively engaged in the field of school administration. Second, there had to be an expression of a willingness to participate in the study. That is, the school administrator had to agree to take the selected psychological test battery and be visited on the job by members of the staff. The selection began in January, 1957, and continued through August, 1957. Thirty-five school administrators were selected, tested, and visited.

Some of the characteristics of the selected group of administrators were as follows:

1. The group consisted of four women and thirty-one men.
2. The age range was from twenty-three years to

fifty-one years.

3. The experience in education range was from three years to twenty-nine years.

4. The training of the group was as follows: one administrator held a Doctor of Education degree, two administrators had Masters' degrees plus one year, sixteen administrators held Masters' degrees, thirteen administrators held Bachelors' degrees, and three had completed three years of college.

5. The group consisted of: two county superintendents, two county supervisors, two county attendance officials, five principals of schools consisting of grades one through twelve, three principals of schools consisting of grades nine through twelve, nineteen principals of schools consisting of grades one through eight, and two assistant secondary school principals.

#### The Psychological Testing Program

There were seven psychological tests included in the battery of tests administered to each of the thirty-five school administrators. The seven psychological tests utilized were:

Allport-Vernon-Lindzey Study of Values

Cooperative English Test (Mechanics and Effectiveness of Expression)

Edwards Personal Preference Schedule

Miller Analogies Test (Graduate Level)

Minnesota Teacher Attitude Inventory

Thurstone Temperament Schedule

Watson-Glaser Critical Thinking Appraisal

The Allport-Vernon-Lindzey Study of Values, Cooperative English Test (Mechanics and Effectiveness of Expression), Miller Analogies Test, Minnesota Teacher Attitude Inventory, and the Watson-Glaser Critical Thinking Appraisal were found to have some relation to all, or part, of the Tennessee Rating Guide by Moffett<sup>9</sup> and Luton<sup>10</sup>. In a study reported by Taylor<sup>11</sup> there were indications that the Edwards Personal Preference Schedule and the Thurstone Temperament Schedule might be related to the behavioral characteristics described in the Tennessee Rating Guide, especially the categories dealing with interpersonal relations and emotional stability.

The psychological tests were administered to the school administrators during the period January, 1957, through August, 1957. The tests were administered in group situations at times found to be convenient to the school administrators. The psychological tests were scored by the

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<sup>9</sup>Moffett, op. cit.

<sup>10</sup>Luton, op. cit.

<sup>11</sup>Gem K. Taylor, "The Development of Effective Characteristics in Students of School Administration" (Unpublished Ed. D. thesis, University of Tennessee, June 1957).

Tennessee State Testing Service and the University of Tennessee Student Counseling Service. The results of the tests were not viewed by members of the staff until the field ratings had been completed.

### Field Ratings of the Subjects

The behavioral characteristics of each school administrator included in the study were translated by the staff into a rating on the Tennessee Rating Guide. To arrive at a field rating the following steps were taken for each school administrator included in the study. First, a rating team composed of at least two members of the staff was designated for each subject. Second, the designated rating team visited the subject in question on the job. The on-the-job visit by the rating team was during the subject's working hours. The length of the visit varied from two to four hours, depending on the raters' previous acquaintance with the person on the job. The sole purpose of the on-the-job visit was to gain insight into the subject's behavioral characteristics to arrive at a field rating. If it was felt that a second visit was necessary to obtain an accurate rating, this was made. During the course of an on-the-job visit the rating team employed various techniques to gain insight into the subject's behavioral characteristics. The techniques utilized included: observation of the subject in operation, interviews using the critical problem technique, and discussion of the subject's

behavioral characteristics with superiors, peers, and subordinates of the subject. Third, the team rating method was utilized and the subject was given a rating on the Tennessee Rating Guide. That is, the rating team, in consultation with other members of the staff who had some knowledge of the behavioral characteristics of the subject in question, considered all available information on the subject and assigned the subject a rating on each item of the Tennessee Rating Guide.

#### Treatment of the Data

The reader is reminded that in effect the problem of the study was to determine selected psychological tests which would differentiate among effective and ineffective school administrators. Thus, it was necessary to utilize statistical procedures which would determine if psychological test scores would differentiate between groups according to their degree of effectiveness or ineffectiveness as measured by the Tennessee Rating Guide. Several statistical methods were considered carefully before determining the best procedures of treating the data gathered in the study. First, attention was given to various parametric statistical techniques, such as the Pearson Product-Moment Coefficient of Correlation technique and the Kelley critical-ratio technique. However, these and all other parametric techniques are based upon certain assumptions about the data to be treated. Two such basic



assumptions are: (1) the data were drawn from a normally distributed population, and (2) the relationship (if such exists) between the variables is linear. Such assumptions could not be accepted for the data treated in the present study since the population was not considered to be normally distributed. That is, it was assumed that school administrators were something of a select group. Thus consideration was given to the various nonparametric techniques which could possibly be utilized.

Nonparametric statistical techniques focus on the order or ranking of scores, not on their numerical value, and it is not necessary to make numerous or stringent assumptions about the data. For example, it is not necessary to make any assumption about the shape of the population from which the data are drawn. After careful consideration of the possible nonparametric techniques, it was felt that a combination of two techniques; the Kruskal-Wallis one-way analysis of variance test,<sup>12</sup> and the Mann-Whitney U test<sup>13</sup> were most appropriate for the data to be treated. The reader is referred to the reference cited for a complete discussion of these techniques.

In order to utilize the forementioned techniques it

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<sup>12</sup>Sidney Siegel, Nonparametric Statistics for the Behavioral Sciences (New York: McGraw-Hill Book Company, Inc., 1956), pp. 184-193.

<sup>13</sup>Ibid., pp. 116-126.



was necessary that the field rating of each administrator on the Tennessee Rating Guide be weighted so that a score could be determined for the Total Rating Guide and for each of its six sections. Gentry concluded that an average score of 4.0 or above characterized the effective school administrator and an average score of 3.0 and below characterized the ineffective school administrator.<sup>14</sup> Based on Gentry's conclusions the selected group of school administrators were divided into "upper" (effective), "middle," and "lower" (ineffective) groups for Sections I, II, V, VI and the Total Rating Guide according to their average scores. Then Kruskal-Wallis H scores were computed between each of the forementioned Sections and the Total Rating Guide and each psychological test and sub-test to determine the extent of the relationships.

For Sections III and IV of the Rating Guide it was possible to divide the school administrators into only "upper" (effective) and "lower" (ineffective) groups according to their average scores. As the Kruskal-Wallis technique could not be used with fewer than three groups it was necessary to utilize the Mann-Whitney technique. Mann-Whitney U scores which were converted to z scores were computed between Sections III and IV and each psychological test and sub-test to determine the extent of the relationships.

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<sup>14</sup>Gentry, op. cit., p. 94.

The utilization of both the Kruskal-Wallis and the Mann-Whitney techniques for the treatment of the data included in this study did not seem incompatible since the rationale underlying both techniques is the same. The Kruskal-Wallis technique was designed to be used when one variable can be divided into three or more categories and the Mann-Whitney technique was designed to be used when one variable can be divided into only two categories.

### Organization of the Study

Chapter I contains the background of the study, the statement of the problem, the hypothesis, the basic assumptions, the significance of the study, the definition of the terms used in the study, the limitations of the study, the procedures utilized in the study, and the organization of the study. Chapter II is a review of the research that was pertinent to the study. The development, reliability, and validity of the Tennessee Rating Guide are discussed in Chapter III. Chapter IV presents a brief description of each of the psychological tests included in the psychological testing program. Contained in Chapter V is an analysis of the relationships found to exist between the standardized tests and the Tennessee Rating Guide. Chapter VI contains a summary of the study and the conclusions reached as a result of the investigation.

## CHAPTER II

### REVIEW OF RELATED RESEARCH

There has been much research conducted in the area of selection for leadership positions and leadership training programs. In view of this, an attempt to present a review of all available research in the area is impractical. Thus, the review reported here is limited to those research studies deemed pertinent to the problem in question. That is, only research which has dealt solely, or in part, with psychological tests as a selection device will be considered here. Furthermore, those research studies which dealt with the validity and reliability of the Tennessee Rating Guide are reported in Chapter III and are not discussed in this chapter.

In 1951 Kelly and Fiske<sup>1</sup> reported the University of Michigan Assessment Program which was one of the most ambitious undertakings in the area of selection. This program, conducted in cooperation with the Veterans Administration, was designed for the purpose of providing for more effective procedures of selecting clinical psychologists. It began in 1946 and was carried on continuously for five years. Involved in the research were several hundred college

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<sup>1</sup>E. Lowell Kelly and Donald W. Fiske, The Prediction of Performance in Clinical Psychology (Ann Arbor, Michigan: University of Michigan Press, 1951).

graduates who were either applicants or beginning students in the four-year Veterans Administration training program in clinical psychology in some forty universities. The applicants and students were evaluated by the use of a wide variety of techniques and procedures, and predictions were made relative to their probable success in training and their future professional competencies. The techniques and procedures used included projective tests, interviews, situational tests, credentials, autobiographical data, pooled ratings, self-ratings, teammate ratings, and objective tests. The objective tests used included:

Miller Analogies Test (Form G)

Thurstone Tests of Primary Mental Abilities

Allport-Vernon Study of Values

Minnesota Multiphasic Personality Inventory

Guilford-Martin Battery of Personality Inventories

Strong Vocational Interest Blank

Kuder Preference Record

The major findings of the research were:

1. The potential validity of all predictors was apparently limited by the inadequacies of the criterion measures. That is, the criterion measures appeared to have certain weaknesses including; low reliability, too general or too specific, and not relevant to actual professional competence.

2. The intellectual aspects of professional competence were more readily predictable than were the clinical and social skills aspects involved in professional competence.

3. The validity of pooled ratings was not significantly greater than the validity of individual ratings.

4. Predictions based on projective test data alone tended to have very low correlations with criterion measures.

5. Predictions based on credentials plus objective test profiles tended to be almost as accurate as those predictions based on more data. That is, such materials as autobiographical data, interviews, projective tests, and situational tests did not appear to increase significantly the validity of the prediction.

6. In general, predictions based solely on the observation of a candidate in situational tests were about as valid as staff ratings based on credentials alone.

7. Self-ratings appeared to have some predictive value for criteria of intellectual success.

8. Only a small number of the objective test scores were found to correlate significantly with the criterion measures. The most generally useful were the Miller Analogies Test and the Strong Vocational Interest Blank.

As part of an investigation conducted by Pascal and Hurt,<sup>2</sup> attention was given to the difference in personality

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<sup>2</sup>A Preliminary Study of Personality Factors Affecting

factors of a group of "poorest" scientists and "best" scientists as measured by certain psychological instruments. Involved in the study were ten "best" chemists, ten "best" physicists, ten "poorest" chemists and ten "poorest" physicists of the physics and chemistry Divisions of the Oak Ridge National Laboratory. From these there emerged a group of "best" scientists and a group of "poorest" scientists, and a third group about which there was some disagreement. The assigning of individuals to categories was on the basis of superiors' ratings.

All subjects were administered the following tests:

Rorschach Test

Vigotsky Stress Test

Bender Gestalt Test

Minnesota Multiphasic Personality Inventory

Kuder Preference Record - Vocational

Kuder Preference Record - Personal

It was found that:

1. In the Rorschach Test there was no significant difference in the "best" group and the "poorest" group in the signs of ability to establish good interpersonal relations. There was a significantly higher percentage of

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On-the-Job Competence of Research Scientists (unpublished report), quoted in James N. Luton, "A Study of the Use of Certain Standardized Tests in the Selection of Potential Educational Administrators" (Unpublished Ed. D. thesis, The University of Tennessee, March 1955), pp. 11-15.



scientists in the "poorest" group that showed two or more signs indicative of maladjustment.

2. In the Vigotsky Stress Test there was no significant difference between the "best" group and the "poorest" group in Direction of Aggression, Intensity of Reaction, Degree of Perseverance, Level of Confidence and Total Number of Responses.

3. There were no significant differences between the "best" group and "poorest" group found by use of the Bender Gestalt Test.

4. The Minnesota Multiphasic Personality Inventory revealed no significant differences between the "best" group and the "poorest" group. It should be noted that the means on all the scales were higher for the total group than for the standardizing population. This would seem to indicate that the group was more "psychologically disturbed" than the standardizing population.

5. In the Kuder Preference Record - Vocational, a significant difference was found between the "best" group and the "poorest" group. There was also a much greater percentage of the "best" group in which either scientific or computational interests formed the highest score.

6. There was a significant difference between the "best" group and the "poorest" group in the Kuder Preference Record - Personal. All of the scientists who had theoretical

interest scores above the 75th percentile and patterns in which agreeable interest scores were highest followed by practical interest scores were found to be in the "best" group.

Pascal and Hurt concluded that there appeared to be a number of "personality" differences between "good" and "poor" scientists.

Sartain<sup>3</sup> conducted a study in which the problem was to determine the extent to which success in supervision in an aircraft factory could be predicted by standardized test scores. The criterion of success was a combination of four ratings by superiors. There was a total of forty foremen and assistant foremen involved in the study. The following standardized tests were administered to each subject:

Otis Self-Administering Test of Mental Ability  
(Higher Form)

Tiffin and Lamshe Adaptability Test (Form A)

Revised Minnesota Paper Form Board

Bennett Test of Mechanical Comprehension (Form AA)

Remmers and File How Supervise? (Experimental  
Edition, Form A)

Bernreuter Personality Inventory

Kuder Preference Record - Vocational

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<sup>3</sup>A. Q. Sartain, "Relation Between Scores on Certain Standard Tests and Supervisory Success in an Aircraft Factory," The Journal of Applied Psychology, 30:328-332, August 1946.



The test scores were correlated with the criterion of success. It was found that the correlation coefficients obtained were too low to be considered significant. The range of the coefficients was from  $-.18$  to  $+.12$ . It was concluded that the selected standardized tests had little or no predictive value for success as a supervisor in the aircraft factory.

As was mentioned in Chapter I the present study can be viewed as an extension of the research studies conducted by Moffett<sup>4</sup> and Luton.<sup>5</sup> Thus, it is appropriate that the portions of these investigations dealing with the predictive value of standardized tests be rather fully reported.

The problem in the study conducted by Moffett was to determine the operational characteristics of a group of beginning masters' students in Educational Administration and Supervision at the University of Tennessee. As a part of the problem the relationship between certain psychological tests and observable behavior of the group was determined. That is, there was an attempt to determine the predictive

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<sup>4</sup>Charles R. Moffett, "Operational Characteristics of Beginning Masters' Students in Educational Administration and Supervision" (Unpublished Ed. D. thesis, University of Tennessee, June 1954).

<sup>5</sup>James N. Luton, "A Study of the Use of Standardized Tests in the Selection of Potential Educational Administrators" (Unpublished Ed. D. thesis, University of Tennessee, March 1955).

value of the selected standardized tests for success in the area of school administration.

The thirty-four member group was administered the following tests:

Rorschach Test

Minnesota Teacher Attitude Inventory

Cooperative English Test (Mechanics and Effectiveness of Expression)

Opinion Scale

Attitude Questionnaire

Kuder Preference Record - Vocational

Watson-Glaser Critical Thinking Appraisal

Miller Analogies Test

Allport-Vernon Scale of Values

The instrument used to record the observable behavior and the criterion was the Tennessee Rating Guide. The form of the Rating Guide used contained thirty-six items and six sections which related to the operational behavior of school administrators. The sections of the guide were:

- I. Democratic Operation
- II. Intelligent Operation
- III. Condition of Health
- IV. Ethical and Moral Strength
- V. Adequacy of Communication
- VI. Operation as a Citizen

The test battery was administered to the group in an "on-the-campus" situation by individuals outside the Department of Educational Administration and Supervision; thus, no member of the department had any knowledge of the test scores. Following the testing program each member of the group was visited "on-the-job" by at least two members of the Department of Educational Administration and Supervision. The purpose of visiting a person in his teaching or administrative situation was to assign a rating on the Rating Guide based on the observable behavior and other available data.

Moffett used the Pearson Product-Moment Coefficient of Correlation technique to determine the relationship between the tests and success on the job as determined by a rating on the Tennessee Rating Guide. Coefficients of correlation were computed between each test, or part thereof, and each section of the Rating Guide. Following are the tests, or parts thereof, with coefficients of correlation which correlated significantly, at the .01 level of confidence with certain sections of the Rating Guide:

#### Section I. Democratic Operation

<u>Kuder Preference Record</u> (Computational)	.55
<u>Miller Analogies</u>	.46
<u>Allport-Vernon Study of Values</u> (Economic)	-.57
<u>Allport-Vernon Study of Values</u> (Social)	-.52
<u>Allport-Vernon Study of Values</u> (Aesthetic)	-.51

## Section II. Intelligent Operation

<u>Opinion Scale</u>	-.46
<u>Miller Analogies</u>	.60
<u>Allport-Vernon Study of Values (Social)</u>	-.47

## Section III. Condition of Health

<u>Opinion Scale</u>	-.47
<u>Kuder Preference Record (Computational)</u>	-.55

## Section IV. Ethical and Moral Strength

<u>Rorschach Test</u>	.45
<u>Watson-Glaser Critical Thinking Appraisal</u>	.49
<u>Miller Analogies</u>	.47

## Section IV. Adequacy of Communication

None

## Section VI. Operation as a Citizen

<u>Allport-Vernon Study of Values (Aesthetic)</u>	-.50
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Moffett concluded that the criterion of success, the Tennessee Rating Guide, was a rather reliable instrument and that the tests which showed significant correlations were of value for predicting success in the area of educational administration.

In March, 1955, Luton<sup>6</sup> reported another study involving the Tennessee Rating Guide and standardized tests which utilized certain data collected by Moffett as well as certain data collected by himself. The problem in this

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<sup>6</sup>Loc. cit.

study was to identify standardized tests, or parts thereof, that would differentiate among groups that were judged to possess different operational characteristics as measured by the Rating Guide.

As a criterion, Luton used certain sections and items of the Rating Guide. Although Moffett concluded that for the most part the Rating Guide was a reliable instrument for determining the operational characteristics of educational administrators, Luton used as a criterion only those items which had reliability coefficients of .70 or better. This meant that Luton used only thirteen items of the Rating Guide from the following sections:

Democratic Operation

Intelligent Operation

Adequacy of Communication

Operation as a Citizen

It should be noted that the Condition of Health Section and Ethical and Moral Strength Section were not used in Luton's study.

The standardized test battery used in the study consisted of:

Minnesota Teacher Attitude Inventory

Allport-Vernon Study of Values

Cooperative English Test (Mechanics and Effectiveness of Expression)

"F" Scale

Attitude QuestionnaireKuder Preference Record - VocationalWatson-Glaser Critical Thinking AppraisalMiller Analogies TestRorschach Test

The sample utilized in the study consisted of the thirty-four subjects involved in Moffett's study and twenty-seven subjects about which Luton collected data. Luton used basically the same approach as Moffett in testing the subjects and then rating their operational behavior using the Tennessee Rating Guide.

In treating the data, the Kelly critical ratio technique was used. That is, the top 27 per cent (upper group) and bottom 27 per cent (lower group) of the sample were utilized for comparative purposes. Comparisons were made of the mean scores on the psychological tests of the upper and lower groups. The following tests were found to be significant in differentiating between the upper and lower groups who were judged, by use of the Rating Guide, to possess different characteristics within the following areas:

Democratic Operation

Minnesota Teacher Attitude (upper group, high score)

Watson-Glaser Critical Thinking (upper group, high score)

Allport-Vernon (Economic) (upper group, high score)

Allport-Vernon (Aesthetic) (upper group, low score)

Kuder Preference (Computational) (upper group, high score)

### Intelligent Operation

- Cooperative English (Expression) (upper group, high score)
- "F" Scale (upper group, low score)
- Watson-Glaser Critical Thinking (upper group, high score)
- Miller Analogies (upper group, high score)
- Allport-Vernon (Economic) (upper group, high score)
- Allport-Vernon (Aesthetic) (upper group, low score)
- Kuder Preference (Musical) (upper group, high score)

### Adequacy of Communication

- Minnesota Teacher Attitude (upper group, high score)
- Cooperative English (Mechanics and Expression) (upper group, high score)
- "F" Scale (upper group, low score)
- Watson-Glaser Critical Thinking (upper group, high score)
- Miller Analogies (upper group, high score)
- Allport-Vernon (Political) (upper group, low score)
- Kuder Preference (Outdoor and Mechanical) (upper group, low score)

### Operation as a Citizen

- Cooperative English (Mechanics and Expression) (upper group, high score)
- Watson-Glaser Critical Thinking (upper group, high score)
- Miller Analogies (upper group, high score)
- Allport-Vernon (Religious) (upper group, high score)
- Kuder Preference (Computational) (upper group, high score)<sup>7</sup>

It is noted that many of the findings of Luton's study are consistent with the findings of Moffett relative to the value of certain tests to differentiate among groups according to the degree to which the characteristics described

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<sup>7</sup>Luton, op. cit., pp. 73-74.



in the Tennessee Rating Guide are possessed. However, it should be noted that Moffett's sample also comprised a part of Luton's sample.

In a study reported by Leavitt,<sup>8</sup> which was conducted at Northwestern University during the years 1949-52, an effort was made to determine the usefulness of various kinds of personal data for predicting probable success in student teaching. The data were obtained from the personnel records of 266 elementary education majors. The data included various kinds of background and academic information as well as percentile ranks on The American Council on Education Psychological Examination, Ohio State University Psychological Test, and The Northwestern Analogies for each member of the group. When the data were compared to ratings of effectiveness in student teaching, which were used as the criterion, it was found that:

1. There was little relationship between the degree of effectiveness in student teaching and the number of methods courses taken and the marks obtained in them.
2. There did not seem to be any relationship between experiences with children and in the working world and degree of effectiveness in student teaching.
3. When the combination of general grade average, grade average in methods courses, and grade average in speech

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<sup>8</sup>Jerome E. Leavitt, "Personnel Data and Prediction of Success for Student Teachers," The Journal of Teacher Education, 4:194-197, September 1953.



courses was used as a composite average there was no direct relationship found with degree of student teaching success.

4. The students who ranked above the 60th percentile on The American Council on Education Psychological Examination attained a greater degree of success than those students who ranked below the 60th percentile.

5. There was no significant relationship found between percentile rank on The Ohio State University Psychological Examination or The Northwestern Analogies and degree of effectiveness in student teaching.

6. When the results of all three of the forementioned tests were considered as a group and related to student teaching success it was indicated that students who ranked above the 60th percentile had a much better chance of a high degree of success in student teaching than did the students who ranked below the 39th percentile.

Leavitt concluded that there was no single index for predicting success in student teaching.

Ohlsen and Schultz<sup>9</sup> also reported a study dealing with test scores and student teaching success. In this study test results as well as some personal history data were analyzed for approximately fifty (top 15 per cent) "best" student teachers and approximately fifty (bottom 15 per cent)

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<sup>9</sup>Merle M. Ohlsen and Raymond E. Schultz, "A Study of Variables for Use in Selection," The Journal of Teacher Education, 5:279-282, December 1954.

"poorest" student teachers. The subjects were placed in the "best" or "poorest" categories according to supervisors' ratings. Tests involved in this comparison were:

Ohlsen's Sociometric Test

Thematic Apperception Test (Alexander's adaptation)

Strong Vocational Interest Blank

Ohlsen's Life Values Test

Incomplete Sentence Test

From a comparison of the test results of the two groups it was concluded that only the sociometric device was a promising technique for differentiating between persons according to their degree of success in student teaching. In general the findings of the sociometric test indicated that the "best" student teachers were much more readily accepted by their peers than were the "poorest" student teachers. It was also concluded that further research might prove the Incomplete Sentence Test and the adaption of the Thematic Apperception Test to be of predictive value for student teaching success.

Gould<sup>10</sup> reported a study conducted at the University of Pittsburgh which attempted to evaluate the efficiency of certain personal, academic, and psychological test data for predicting success on the job of first-year teachers. One

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<sup>10</sup>George Gould, "The Predictive Value of Certain Selective Measures," Educational Administration and Supervision, 33:208-12, April 1947.

hundred thirteen first-year teachers were rated by their principals on a five point rating device, and this rating was used as the criterion of success in teaching. The contingency method was used to determine the extent of the relationship between the on-the-job ratings of the teachers and the several selective devices. Following is a list of the selective measures used and their correlations with the on-the-job ratings expressed in terms of coefficients of contingency:

Student teaching grade	.66
Rating in personal interview	.64
<u>ACE Psychological Examination</u>	.53
Quality point average	.44
<u>Cooperative Contemporary Affairs Test</u>	.38
<u>Bell Adjustment Inventory</u>	.37
<u>Washburne Social Adjustment Inventory</u>	.35
<u>Willoughby (Clark-Thurstone) Personality Schedule</u>	.23

Gould pointed out that the correlations are somewhat higher than those found in similar investigations. However, he stated that in light of the proposed use of the selective measures they have a low "forecasting efficiency."

A similar study, reported by Stoelting,<sup>11</sup> was conducted at the University of Wisconsin. The central problem

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<sup>11</sup>Gustave J. Stoelting, "The Selection of Candidates for Teacher Education at the University of Wisconsin," Journal of Experimental Education, 24:115-132, December 1955.

in this study was to determine the efficiency with which the several selective devices used at the University of Wisconsin differentiated between superior teachers and teachers who had only limited success. The selective devices included: rank in high school, grade point averages, a speech proficiency test, and the following standardized tests:

Henmon-Nelson Psychological Test

ACE Psychological Test

Cooperative Reading Test

Cooperative General Culture Test

Minnesota Multiphasic Personality Inventory

The selection devices were correlated with measures of success in teaching. The criteria of success in teaching consisted of: an in-service rating by a superior, practice teaching grades, a placement bureau rating, and a rating by the faculty of the teacher's major department at college.

From the findings, based on a sample of approximately 350 teachers, it was concluded that:

1. None of the selected standardized tests employed appeared capable of differentiating between successful and unsuccessful teachers. That is, they had little or no predictive value.

2. Earned grade point average appeared to be the most useful device employed.

3. The high school rank appeared to be of doubtful value.

4. The speech proficiency test had value only for assuring that candidates had the minimum speech attainment necessary for classroom work.

As part of a study reported by Topetzes<sup>12</sup> an effort was made to determine the feasibility of utilizing selected standardized tests to select students for physical therapy or occupational therapy work. These tests which were administered to a sample of students of physical therapy and occupational therapy included:

Wechsler-Bellevue Intelligence Scale

California Mental Maturity Test

Kuder Preference Record - Vocational

The Wide Range Achievement Test

The Michigan Speed of Reading Test

The Purdue Pegboard Test

The Minnesota Rate of Manipulation Test

The Minnesota Paper Form Board Test

The Bennett Mechanical Comprehension Test

The Minnesota Multiphasic Personality Inventory

The Washburne Social Adjustment Inventory

The Cardall Practical Judgment Test

The forementioned tests were then correlated with ratings of the student on a five point rating scale which was

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<sup>12</sup>Nick J. Topetzes, "A Program for the Selection of Trainees in Physical Medicine," Journal of Experimental Education, 25:263-322, June 1957..

concerned with the characteristics necessary for success in physical therapy and occupational therapy.

Topetzes made the following conclusions relative to this part of the study:

Many of the correlations of the various tests with the ratings were small. It appears that those correlations which are of any size at all may be due to chance. The low correlations with the ratings seem to indicate two possibilities:

1. The rating scale does not give a good evaluation of the student as a therapist, and
2. The committee may have chosen some tests which are not highly related to success in therapy.<sup>13</sup>

McIntyre<sup>14</sup> reported the results of some exploratory research conducted at the University of Texas dealing with the use of standardized tests in predicting capabilities in the area of educational administration. The problem in effect was to determine which of the several selected standardized tests were sensitive enough to identify prospective, successful school administrators. The following standardized tests were administered to eighty subjects:

Contemporary Affairs Test

Miller Analogies Test

Cooperative English Test C2

Watson-Glaser Critical Thinking Appraisal

Allport-Vernon-Lindzey Study of Values

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<sup>13</sup>Ibid., p. 303.

<sup>14</sup>Kenneth E. McIntyre, "What Are They Like?" Phi Delta Kappan, 37:288-291, April 1956.



Guilford-Morten InventoriesStrong Vocational Interest BlankMinnesota Teacher Attitude Inventory

Correlations of test scores with staff judgments, which served as the criterion, failed to show a "foolproof" test or combination of tests. However, the following tests correlated high enough with staff judgments to be considered useful and worthy of further study:

Watson-Glaser Critical Thinking AppraisalMiller Analogies TestCooperative English Test C2

### Chapter Summary

This chapter has presented a review of research which focused on the use of standardized psychological tests as a selection device. From an analysis of the research it would seem that the findings relative to the predictive value of standardized tests for success in various occupations are inconclusive. That is, in some situations certain tests appear to have predictive value while in other situations they seem to have little or no relationship to the criterion of success. The greatest weakness of most of the studies reviewed seemed to be in the inadequacies of the criterion measure, that is, the lack of well defined measures of degree of success.

### CHAPTER III

#### THE UNIVERSITY OF TENNESSEE RATING GUIDE, CHARACTERISTICS OF SCHOOL ADMINISTRATORS

The present chapter, dealing with the Tennessee Rating Guide, is divided into three parts. First, there is a discussion of the development of the instrument. Second, the research to establish the reliability of the Tennessee Rating Guide is presented. Third, the efforts to validate the instrument are reported. Included in Appendix A is a copy of the February, 1957, revision of the Tennessee Rating Guide. The reader is invited to inspect this instrument in connection with the discussion which follows:

##### Development of the Tennessee Rating Guide

Basic to the development of the Tennessee Rating Guide was the assumption that the behavioral characteristics for effective and/or ineffective school administrators could be identified and stated. Furthermore, it was assumed that a school administrator would be more effective and render a greater service if he followed a pattern of democratic leadership rather than utilizing other methods.

There were two documents which were rather basic to the development of the Tennessee Rating Guide. First, a report of the May, 1951, work-conference of the Southern



States Cooperative Program in Educational Administration listed characteristics which leaders in the field of educational administration felt were desirable if a person expected to become an effective school administrator. Second, a report of the second work-conference of the National Conference of Professors of Educational Administration set forth certain characteristics which were deemed pertinent to the problem. Based on the material contained in these two reports the staff of the Department of Educational Administration and Supervision of the University of Tennessee selected, refined, restated, and classified certain pertinent characteristics, developing a rating device which was designated as "the rating guide." This instrument was then submitted to members of the University of Tennessee Department of Psychology for suggestions as to how it might be improved. Then the "revised" Rating Guide was submitted to various educators in the area for further suggestions and revised a second time.<sup>1</sup>

The instrument that emerged as a result of the forementioned efforts was put to use in rating the operational characteristics of students of educational administration and school administrators. As the research studies which are

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<sup>1</sup>James N. Luton, "A Study of the Use of Standardized Tests in the Selection of Potential Educational Administrators" (Unpublished Ed. D. thesis, University of Tennessee, March 1955), p. 34.

discussed in other sections of this chapter were completed, the Rating Guide was revised further in light of the research evidence.

The February, 1957, revision of the Tennessee Rating Guide, which was used in this study, contained the following sections under which specific operational characteristics were classified:

1. Interpersonal Relations
2. Intelligent Operation
3. Emotional Stability
4. Ethical and Moral Strength
5. Adequacy of Communication
6. Operation as a Citizen

#### Reliability of the Tennessee Rating Guide

The first test of the reliability of the Tennessee Rating Guide was reported by Moffett.<sup>2</sup> In conducting this test two staff members selected thirty people whom they thought they knew well enough to rate on the Rating Guide. Then the two staff members independently rated each of the thirty people selected. It should be noted that the revision of the Rating Guide utilized in the reliability test contained

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<sup>2</sup>Charles R. Moffett, "Operational Characteristics of Beginning Masters' Students in Educational Administration and Supervision" (Unpublished Ed. D. thesis, The University of Tennessee, June 1954), pp. 47-49.

the following sections:<sup>3</sup>

1. Democratic Operation
2. Intelligent Operation
3. Condition of Health
4. Ethical and Moral Strength
5. Adequacy of Communication
6. Operation as a Citizen

Table I, page 43, contains the correlation coefficients of the judgment ratings of the two staff members. It can be noted from this table that the correlations, in most instances, were significant and it was concluded that for the most part the Rating Guide was a reliable instrument when used by different raters. There were two sections of the Rating Guide for which there were insignificant correlations: Sections III and IV.

Another test of reliability was reported as a part of a study conducted by Coker.<sup>4</sup> Two raters, using the November, 1955, version of the Rating Guide in which extensive changes had been made in attempting to overcome the weaknesses discovered by Moffett, made independent judgments of thirty-two school principals. Correlation coefficients of these

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<sup>3</sup>Ibid., pp. 50-65.

<sup>4</sup>Phyllis Coker, "A Study of the Use of the Tennessee Rating Guide as a Means of Differentiating Between Effective and Ineffective School Administrators" (Unpublished M.S. thesis, The University of Tennessee, August 1956).

TABLE I

THE CORRELATION COEFFICIENTS OF THE JUDGMENT RATINGS OF  
THIRTY INDIVIDUALS UTILIZING THE RATING GUIDE<sup>a</sup>

Sections of the Rating Guide	Coefficient of Correlation	Sections of the Rating Guide	Coefficient of Correlation
I.	.74	IV.	.46
A	.62	A	<u>.40</u>
B	<u>.44</u>	B	<u>.50</u>
C	.61	C	.47
D	.77	D	<u>.58</u>
E	.68		
F	.96	V.	.75
G	.91	A	.96
		B	.89
II.	.79	C	.77
A	.72	D	.58
B	.66	E	.60
C	.94	F	.52
D	.94	G	.54
E	.74		
F	.69	VI.	.76
G	.59	A	.80
H	.65	B	<u>.15</u>
I	<u>.48</u>	C	<u>.43</u>
		D	.71
III.	.40	E	.86
A	<u>.30</u>		
B	<u>.86</u>		
C	.70		
D	<u>.03</u>		

Note: Those correlations which are underlined are not significant.

<sup>a</sup>Source: Charles R. Moffett, "Operational Characteristics of Beginning Masters' Students in Educational Administration and Supervision" (Unpublished Ed. D. thesis, The University of Tennessee, Knoxville, 1954), p. 48.

judgments were computed for each item of the Rating Guide utilizing the Pearson Product-Moment method. It was found that all of the coefficients of correlation were significant at the .01 level of confidence except one item in the Condition of Health section.

In the Fall of 1956 another reliability check was begun. In conducting this check members of the staff and advanced graduate students in the Department of Educational Administration and Supervision divided into two-man rating teams and rated a total of thirteen people. In doing this the rating teams selected persons whom they felt they knew well enough to judge on the Rating Guide. Then each member of a team rated the person in question without consulting the other member. The ratings by each member of the team were then filed. The forementioned procedure was conducted in September of 1956 and one member of each team was considered inexperienced in the use of the Rating Guide. Furthermore, the persons chosen as subjects were people with whom the raters probably would have no contact between September, 1956, and February, 1957.

In January of 1957 the rating teams were asked again to rate the subjects whom they had rated in September of 1956. This rating was conducted in the same manner as the first rating. The raters did not have an opportunity to view their previous rating of a subject nor did the raters

have any contact with the subjects. Thus, it was felt that a rater would have forgotten his previous rating of a subject and any difference in the first and second rating of a subject would be due to inconsistency. Furthermore, since two persons rated each subject there was an opportunity to compare the agreement between raters about a subject.

Tables II, III, and IV, pages 46-49, give the results of this project in terms of percentages of agreement and difference. Table II shows, in terms of percentages, the extent to which each judge agreed with his first rating of a subject on a second rating of the subject. It can be noted that the percentages of complete agreement on item judgments between the first and second ratings ranged from 40.75 per cent to 92.60 per cent. In terms of the item judgments that showed a difference of +2 or -2 when first and second ratings were compared, the percentages of difference ranged from 14.81 per cent to 0 per cent with only twelve of the twenty-six ratings showing any percentages of difference at the +2 or -2 level. Furthermore, an examination of Table II shows that in only one case does the percentage of difference in excess of +1 or -1 exceed 12 per cent. That is, within +1 or -1 there was not less than 88 per cent agreement in the item judgments on the first and second ratings in twenty-five out of the twenty-six cases.

Table III deals with the percentages of agreement and difference between judges (each pair of judges represented

TABLE II

PERCENTAGE OF RATE AND RE-RATE AGREEMENT (BY INDIVIDUAL JUDGES AND SUBJECTS)

Judge	Subject	Percentage of Item Judgments That Were Identical on Rate and Re-Rate	Percentage of Item Judgments That Had a Difference of +1 or -1 on Rate and Re-Rate	Percentage of Item Judgments That Had a Difference of +2 or -2 on Rate and Re-Rate	Percentage of Item Judgments That Had a Difference of +3 or -3 on Rate and Re-Rate
1.	A	77.77	22.23	---	---
	B	66.66	22.23	3.70	7.40
	C	74.08	25.92	---	---
2.	D	77.77	22.23	---	---
	E	59.26	37.04	3.70	---
	B	40.75	48.14	11.11	---
	F	48.15	44.45	7.40	---
3.	G	59.26	37.04	3.70	---
	A	92.60	7.40	---	---
	H	59.26	29.63	11.11	---
	I	77.77	22.23	---	---
4.	J	66.67	25.93	7.40	---
5.	H	44.45	37.04	14.81	3.70
	E	74.08	18.52	7.40	---



TABLE II (continued)

## PERCENTAGE OF RATE AND RE-RATE AGREEMENT (BY INDIVIDUAL JUDGES AND SUBJECTS)

Judge	Subject	Percentage of Item Judgments That Were Identical on Rate and Re-Rate	Percentage of Item Judgments That Had a Difference of +1 or -1 on Rate and Re-Rate	Percentage of Item Judgments That Had a Difference of +2 or -2 on Rate and Re-Rate	Percentage of Item Judgments That Had a Difference of +3 or -3 on Rate and Re-Rate
6.	K	77.77	22.23	---	---
	F	62.96	37.04	---	---
7.	L	77.77	22.23	---	---
8.	D	70.38	29.62	---	---
	M	51.85	48.15	---	---
	G	66.67	33.33	---	---
	L	51.85	40.75	7.40	---
	J	59.26	37.04	3.70	---
	I	62.96	33.34	3.70	---
9.	K	59.26	40.74	---	---
	M	62.96	37.04	---	---
	C	66.67	33.33	---	---



TABLE III

PERCENTAGE OF AGREEMENT BETWEEN JUDGES ON FIRST RATING  
(BY PAIRED JUDGES AND SUBJECTS)

Judges	Sub- ject	Percentage of Item Judgments in Which the Judges Were in Complete Agreement	Percentage of Item Judgments in Which the Judges Had a Difference of +1 or -1	Percentage of Item Judgments in Which the Judges Had a Difference of +2 or -2	Percentage of Item Judgments in Which the Judges Had a Difference of +3 or -3
1 and 3	A	59.26	33.34	7.40	---
1 and 2	B	62.96	18.53	11.11	7.40
1 and 9	C	33.33	51.86	11.11	3.70
2 and 8	D	55.56	33.33	11.11	---
2 and 5	E	33.34	48.15	11.11	7.40
2 and 6	F	37.04	51.86	7.40	3.70
3 and 8	G	77.77	22.23	---	---
3 and 5	H	14.83	51.85	29.62	3.70
3 and 8	I	48.15	44.45	3.70	3.70
4 and 8	J	29.63	51.87	14.80	3.70
6 and 9	K	40.74	44.46	14.80	---
7 and 8	L	33.34	59.26	7.40	---
8 and 9	M	33.34	51.86	14.80	---

TABLE IV

PERCENTAGE OF AGREEMENT BETWEEN JUDGES ON SECOND RATING  
(BY PAIRED JUDGES AND SUBJECTS)

Judges	Sub- ject	Percentage of Item Judgments in Which the Judges Were in Complete Agreement	Percentage of Item Judgments in Which the Judges Had a Difference of +1 or -1	Percentage of Item Judgments in Which the Judges Had a Difference of +2 or -2	Percentage of Item Judgments in Which the Judges Had a Difference of +3 or -3
1 and 3	A	74.07	25.93	---	---
1 and 2	B	48.16	40.74	7.40	3.70
1 and 9	C	18.52	66.67	11.11	3.70
2 and 8	D	77.77	18.53	3.70	---
2 and 5	E	44.46	51.84	3.70	---
2 and 6	F	59.26	40.74	---	---
3 and 8	G	62.96	33.34	3.70	---
3 and 5	H	48.16	40.74	7.40	3.70
3 and 8	I	62.96	37.04	---	---
4 and 8	J	18.52	40.74	40.74	---
6 and 9	K	29.64	62.96	7.40	---
7 and 8	L	25.92	48.16	25.92	---
8 and 9	M	59.26	29.63	11.11	---

one rating team) on the first rating of the subjects. That is, percentages of agreement and differences were computed between the item judgments of the two judges for each subject. It can be readily noted that within a difference of  $\pm 1$  or  $-1$  there was 80 per cent, or greater, agreement on the item judgments in twelve of the thirteen cases. Table IV which shows the percentage of agreement and differences between judges for the second rating reveals essentially the same results as Table III. That is, within  $\pm 1$  or  $-1$  there was 85 per cent, or greater, agreement on item judgments in eleven of the thirteen cases. An analysis of the item judgments showed that the greatest amount of difference tended to be in the items in the Condition of Health Section and Ethical and Moral Strength Section. This finding was consistent with the findings of the reliability tests reported by Moffett and Coker.

The University of Florida used the Tennessee Rating Guide as a part of an experimental program in educational leadership. Each of thirty-four principals in the program were rated using the Tennessee Rating Guide. Four teachers acted as raters for each of the principals. Tentative results have indicated that there was a high degree of consistency among the ratings of the four teachers. Furthermore, using the total score on the Rating Guide it was

found to discriminate between "good" and "poor" principals.<sup>5</sup>

### Validity of the Tennessee Rating Guide

There have been three studies completed relating to the validation of the Tennessee Rating Guide.

In June, 1956, Greever reported an investigation which attempted to identify the operational characteristics of personnel of central administrative staffs of six selected school systems in East Tennessee by use of a modified critical incident approach.<sup>6</sup> Greever hypothesized to the effect that the operational characteristics identified by studying the central staffs of the school systems would be identified and described in the Rating Guide. In analyzing the data, which were gathered by use of the critical incident approach, Greever abstracted 137 statements of behavioral characteristics from 178 critical incidents. From these statements Greever concluded that:

1. Eighty-two statements of behavioral characteristics, of the 137 abstracted from critical incidents, seemed to be related to the Rating Guide.

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<sup>5</sup>William D. Spears, Assistant Professor of Education, University of Florida, personal interview, December 10, 1957.

<sup>6</sup>Clarence E. Greever, "A Study of the Characteristics of Selected Effective Superintendencies in East Tennessee" (Unpublished Ed. D. thesis, The University of Tennessee, June 1956).

2. Fifty-five statements of behavioral characteristics, of the 137 abstracted from critical incidents, appeared not to relate to the Rating Guide.

3. The eighty-two statements of behavioral characteristics which seemed to be related to the Rating Guide appeared to be in harmony with the purposes and philosophy of the Rating Guide.

4. The purposes and philosophy which underlie the Rating Guide provide a definite and describable scope and limitation.

5. Fifty-five statements of behavioral characteristics, of the 137 abstracted from critical incidents, which appeared not to relate to the Rating Guide, seemed to lie outside the scope and purpose of the Rating Guide.<sup>7</sup>

The research staff of the Department of Educational Administration and Supervision of the University of Tennessee reviewed further the fifty-five statements which Greever had stated did not appear to relate to the Rating Guide and concluded that the fifty-five statements were not actually statements of behavioral characteristics as defined in the Rating Guide.<sup>8</sup>

Relative to the hypothesis of the study Greever stated:

The specific findings emphasized that the purposes and philosophy which seem to underlie the Rating Guide provided a definite scope and limitation and that all abstracted statements which seemed to be within this framework appeared to relate to the Rating Guide. Conversely, those characteristics which seemed to lie outside this framework did not seem applicable. In view of

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<sup>7</sup>Ibid., pp. 186-187.

<sup>8</sup>"The University of Tennessee Kellogg Research Project on Behavioral Characteristics of Effective and Ineffective School Administrators--A Progress Report," University of Tennessee, Knoxville, Tennessee, December 1, 1956, p. 8. (Multilithed)

these findings, this study would seem to have substantiated the hypothesis to a considerable degree.<sup>9</sup>

The major part of the study by Coker,<sup>10</sup> which was reported in August, 1956, was conducted to determine the validity of the Rating Guide in differentiating between effective and ineffective school principals. In the study a four-member committee, which had intimate knowledge of the operational behavior of the subjects under consideration, selected two groups each composed of sixteen principals. One of the groups was composed of "effective" principals and the other group of "ineffective" principals. Then, without any knowledge relative to the groups in which the principals were placed by the four-member committee, a team of two raters, who were thoroughly familiar with the Rating Guide, rated each of the thirty-two principals utilizing the Rating Guide.

Coker hypothesized to the effect that a pattern of characteristics common to effective school principals would be identified and that a pattern of characteristics common to ineffective school principals would be identified by application of the Rating Guide.<sup>11</sup>

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<sup>9</sup>Greever, op. cit., p. 188.

<sup>10</sup>Coker, op. cit.

<sup>11</sup>Ibid., p. 49.

It was found that the Rating Guide as a whole clearly differentiated between the "effective" group and the "ineffective" group. The mean score for the "effective" group on all sections of the Rating Guide was 4.3 with the range being from 4.1 to 4.6. The mean score for the "ineffective" group on all sections of the Rating Guide was 2.8 with the range being from 2.2 to 3.3.<sup>12</sup> The scores were based on a one-to-five scale with the higher scores indicating the more desirable characteristics. Due to low reliability, one item of the "Condition of Health" section was not used in analyzing the data, and it was recommended that this section of the Rating Guide be revised.<sup>13</sup>

Coker concluded that the hypothesis of the study had been proved and that on the basis of the study the Rating Guide would differentiate between effective and ineffective school principals.<sup>14</sup>

Another study to validate the behavioral characteristics of school administrators was reported by Gentry in June, 1957.<sup>15</sup> The purpose of the study was to identify patterns of

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<sup>12</sup>Ibid., p. 45.

<sup>13</sup>Ibid., p. 53.

<sup>14</sup>Ibid., p. 52.

<sup>15</sup>Harold W. Gentry, "Patterns of Behavioral Characteristics Exhibited by School Administrators" (Unpublished Ed. D. thesis, University of Tennessee, June 1957).



behavioral characteristics of selected administrators. It was hypothesized to the effect that an analysis of the data would reveal a pattern of common behavioral characteristics for effective school administrators which would be decisively different from a pattern of common behavioral characteristics for ineffective school administrators.<sup>16</sup>

To collect the data the following procedure was used. Twenty-five professors of educational administration from various parts of the United States were contacted and asked to select three competent practicing public school administrators to serve as "raters." Each of the "raters" was asked to rate one of the most effective school administrators and one of the most ineffective school administrators whom he knew intimately, utilizing the Rating Guide. From the foregoing there emerged a group of fifty-five effective school administrators and a group of fifty-five ineffective school administrators with a rating for each member of both groups on the Rating Guide.<sup>17</sup>

From a comparative analysis of the ratings of the two groups Gentry concluded the following:

1. The effective administrators rated had common characteristics which tend to differentiate them from the ineffective administrators rated.

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<sup>16</sup>Ibid., pp. 88-89.

<sup>17</sup>Ibid., pp. 90-91.

2. A rating of four or better characterized the effective administrator.

3. While the effective administrators possessed a core of common characteristics, they varied in some instances in the possession of characteristics which were not considered desirable for effective administration.

4. The ineffective administrators rated had common characteristics which tend to differentiate them from the effective administrators rated.

5. A rating of three or less characterized the ineffective administrator.

6. The ineffective administrators' ratings varied widely especially within a one to three range.

7. The preceding conclusions, when viewed as a whole, suggest the general conclusion that the hypothesis which gave direction to this study has been substantiated to a relatively high degree.<sup>18</sup>

Schmitt<sup>19</sup> has completed the collection of data for a study relating to the validity of the Rating Guide. In this study behavioral characteristics were extracted from critical incidents collected from twenty-four principals in the East Tennessee area. Unknown to the investigator an independent committee had judged twelve of the principals to be "effective" and twelve to be "ineffective." The problem was to identify a pattern of behavioral characteristics for the effective principals and for the ineffective principals. It was hypothesized that there would be a significant difference in the behavioral pattern of the effective principals and the ineffective principals. Furthermore, it was

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<sup>18</sup>Ibid., pp. 94-95.

<sup>19</sup>Leonard R. Schmitt, Principal, Hamilton County School System, personal interview, November 20, 1957.

hypothesized that the behavioral characteristics of the effective principals would show a high correlation with the statements of effective characteristics found in the Tennessee Rating Guide and that the behavioral characteristics of the ineffective principals would show a high correlation with the statements of ineffective characteristics found in the Tennessee Rating Guide.

Tentative results from this study have indicated that the hypotheses have been substantiated to a relatively high degree. That is, the group judged to be effective showed a pattern of behavioral characteristics significantly different from the ineffective group. Furthermore, a high degree of consistency was found between the behavior patterns and the characteristics described in the Tennessee Rating Guide. In general the tentative results of this study are consistent with the findings of Greever<sup>20</sup> and Gentry.<sup>21</sup>

### Chapter Summary

Chapter III has presented a brief history of the Tennessee Rating Guide and a review of the efforts relative to establishing the reliability and validity of the instrument. The February, 1957, revision of the Tennessee Rating

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<sup>20</sup>Greever, op. cit.

<sup>21</sup>Gentry, op. cit.

Guide emerged as a result of the research discussed in this chapter. In the February, 1957, revision of the Rating Guide, Sections III and IV which were entitled Condition of Health and Ethical and Moral Strength were given close attention. The Condition of Health Section was eliminated as being beyond the scope of the Rating Guide and the Ethical and Moral Strength Section was re-written.

## CHAPTER IV

### THE PSYCHOLOGICAL TEST BATTERY

The psychological test battery administered to each of the selected school administrators in the present study consisted of seven tests. Chapter I gave an enumeration of the tests, a discussion of the reasons for their inclusion in the battery, and a description of the conditions under which the tests were administered. The findings from the psychological test battery are reported in Chapter V. Thus, the information which follows deals only with a description of ~~the seven~~ tests used in the present study.

Allport-Vernon-Lindzey Study of Values. This scale is designed to measure the dominant interests or motives in personality. Based on Edward Spanger's Types of Men, which theorizes that men's personalities are best known by a study of their values or evaluative attitudes, the test aims to measure the relative prominence of six basic interests: the theoretical, economic, aesthetic, social, political, and religious.

The dominant interest of the theoretical man is the discovery of truth, thus he seeks to observe and reason. He is empirical, critical, and rational. His chief aim in life is to order and systematize his knowledge. The economic man is primarily interested in what is useful. He is a

"practical" man and has interests in the affairs of the business world. The aesthetic man sees his highest value in form and harmony. Such an individual finds his greatest pleasures in the artistic aspects of life. The individual whose dominant interests are in the social category places a great deal of value on love of people. In its purest form the social interest is selfless and tends to approach very closely to the religious attitude. The political man is chiefly interested in power. Such a man enjoys competition and struggle and wishes for personal power and influence. The religious man is mystical. He places his highest value on "unity." That is, he seeks to comprehend the cosmos as a whole and relate himself to the totality.<sup>1</sup>

Cooperative English Test (Mechanics and Effectiveness of Expression). This is a test of scholastic aptitude and achievement. The Mechanics part of the test is designed to measure a person's knowledge of grammar, punctuation, capitalization, and spelling. The Effectiveness of Expression part of the test is designed to measure a person's ability in the areas of sentence structure and style, diction, and organization. Both parts of the test are designed to measure

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<sup>1</sup>Gordon W. Allport, et al., Study of Values - A Scale for Measuring the Dominant Interest in Personality (Boston: Houghton-Mifflin Company, 1951). (Manual of Directions)

the skills believed necessary for adequate communication.<sup>2</sup>

Edwards Personal Preference Schedule. This instrument is designed to measure the relative strength of fifteen personality variables. The variables are considered to be normal and independent of each other. The names of each of the fifteen variables with a brief description of the manifest needs associated with each are as follows:

1. ach Achievement: To do one's best, to be successful, to accomplish tasks requiring skill and effort, to be a recognized authority, to accomplish something of great significance, to do a difficult job well, to solve difficult problems and puzzles, to be able to do things better than others, to write a great novel or play.

2. def Deference: To get suggestions from others, to find out what others think, to follow instructions and do what is expected, to praise others, to tell others that they have done a good job, to accept the leadership of others, to conform to custom and avoid the unconventional, to let others make decisions.

3. ord Order: To have written work neat and organized, to make plans before starting a difficult task, to have things organized, to keep things neat and orderly, to make advance plans when taking a trip, to organize details of work, to keep letters and files according to some system, to have meals organized and a definite time for eating, to have things arranged so that they run smoothly without change.

4. exb Exhibition: To say witty and clever things, to tell amusing jokes and stories, to talk about personal adventures and experiences, to have others notice and comment upon one's appearance, to say things just to see what effect it will have on others, to talk about personal achievements, to be

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<sup>2</sup>The Cooperative English Expression Tests. Information Concerning Their Construction, Interpretation, and Use (New York: The Cooperative Test Service, 1940). (Manual)



the center of attention, to use words that others do not know the meaning of, to ask questions others cannot answer.

5. aut Autonomy: To be able to come and go as desired, to say what one thinks about things, to be independent of others in making decisions, to feel free to do what one wants, to do things that are unconventional, to avoid situations where one is expected to conform, to do things without regard to what others may think, to criticize those in positions of authority, to avoid responsibilities and obligations.

6. aff Affiliation: To be loyal to friends, to participate in friendly groups, to do things for friends, to form new friendships, to make as many friends as possible, to share things with friends, to do things with friends rather than alone, to form strong attachments, to write letters to friends.

7. int Intraception: To analyze one's motives and feelings, to observe others, to understand how others feel about problems, to put one's self in another's place, to judge people by why they do things rather than by what they do, to analyze the behavior of others, to analyze the motives of others, to predict how others will act.

8. suc Succorance: To have others provide help when in trouble, to seek encouragement from others, to have others be kindly, to have others be sympathetic and understanding about personal problems, to receive a great deal of affection from others, to have others do favors cheerfully, to be helped by others when depressed, to have others feel sorry when one is sick, to have a fuss made over one when hurt.

9. dom Dominance: To argue for one's point of view, to be a leader in groups to which one belongs, to be regarded by others as a leader, to be elected or appointed chairman of committees, to make group decisions, to settle arguments and disputes between others, to persuade and influence others to do what one wants, to supervise and direct the actions of others, to tell others how to do their jobs.

10. aba Abasement: To feel guilty when one does something wrong, to accept blame when things do not go right, to feel that personal pain and misery suffered does more good than harm, to feel better when giving in and avoiding a fight than when having one's own way, to feel the need for confession of errors, to feel depressed by the inability to handle

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situations, to feel timid in the presence of superiors, to feel inferior to others in most respects.

11. nur Nurturance: To help friends when they are in trouble, to assist others less fortunate, to treat others with kindness and sympathy, to forgive others, to do small favors for others, to be generous with others, to sympathize with others who are hurt or sick, to show a great deal of affection toward others, to have others confide in one about personal problems.

12. chg Change: To do new and different things to travel, to meet new people, to experience novelty and change in daily routine, to experiment and try new things, to eat in new and different places, to try new and different jobs, to move about the country and live in different places, to participate in new fads and fashions.

13. end Endurance: To keep at a job until it is finished, to complete any job undertaken, to work hard at a task, to keep at a puzzle or problem until it is solved, to work at a single job before taking on others, to put in long hours of work without distraction, to stick at a problem even though it may seem as if no progress is being made, to avoid being interrupted while at work.

14. het Heterosexuality: To go out with members of the opposite sex, to engage in social activities with the opposite sex, to be in love with someone of the opposite sex, to kiss those of the opposite sex, to be regarded as physically attractive by those of the opposite sex, to participate in discussions about sex, to read books and plays involving sex, to listen to or tell jokes involving sex, to become sexually excited.

15. agg Aggression: To attack contrary points of view, to tell others what one thinks about them, to criticize others publicly, to make fun of others, to tell others off when disagreeing with them, to get revenge for insults, to become angry, to blame others when things go wrong, to read newspaper accounts of violence.<sup>3</sup>

Miller Analogies Test. This test was developed for the purpose of measuring scholastic aptitude at the graduate

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<sup>3</sup>Allen L. Edwards, Edwards Personal Preference Schedule (New York: The Psychological Corporation, 1954), p. 5. (Manual of Directions)

school level. It consists of one hundred analogies covering a wide variety of fields of learning. The test is predominantly verbal in character. It has a time limit of fifty minutes, however, the speed factor is said to be of negligible importance. Thus, it is essentially a power test. The test scores correlate very highly with scores of so-called "intelligence" tests. It is a restricted test and is available only through licensed testing centers.<sup>4</sup>

Minnesota Teacher Attitude Inventory. This instrument consists of 150 statements involving a wide variety of ideas which deal largely with children's behavior and classroom situations. The testee must respond to each item indicating some degree of agreement or disagreement. It is designed to measure attitudes on a democratic-autocratic continuum. A teacher ranking at the high end of the scale is assumed to be able to maintain with pupils harmonious relationships characterized by mutual affection and sympathetic understanding. A teacher who ranks at the other end of the scale is assumed to be one who attempts to dominate the classroom and creates an atmosphere of tension, fear, and submission. As can be noted from the foregoing, the primary purpose of the inventory is to predict how well a teacher

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<sup>4</sup>Frank S. Freeman, Theory and Practice of Psychological Testing (New York: Henry Holt and Company, 1950), p. 234.

will get along with pupils in interpersonal relations. Also, it is felt that the inventory will indirectly predict how well a person will be satisfied with teaching as a profession.<sup>5</sup>

Thurstone Temperament Schedule. The schedule was devised for the purpose of assessing the normal personality traits that are relatively stable. It excludes those traits which reflect recent social experience, social identification, disturbing experiences, or exposure to propaganda. The author emphasizes that the schedule is not designed for psychotic or neurotic persons, but to describe how normal, well-adjusted people differ from each other.

The schedule consists of 140 questions about likes, dislikes, preferences, and habits in everyday life. The testee must decide the degree to which the questions describe him by answering "yes," "no," or "?" to each question.

The schedule purports to measure seven areas of temperament. The areas covered and a brief description of each are as follows:

Active (A). A person scoring high in this area usually works and moves rapidly. He is restless whenever he has to be quiet. He likes to be "on the go" and tends to hurry. He usually speaks, walks, writes, drives, and works rapidly, even

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<sup>5</sup>Walter W. Cook, Minnesota Teacher Attitude Inventory (New York: The Psychological Corporation, 1951). (Manual of Directions)

when these activities do not demand speed.

Vigorous (V). A person with a high score in this area participates in physical sports, work requiring the use of his hands and the use of tools, and outdoor occupations. The area emphasizes physical activity using large muscle groups and great expenditure of energy. This trait is often described as "masculine," but many women and girls will score high in this area.

Impulsive (I). High scores in this area indicate a happy-go-lucky, dare-devil, carefree, acting-on-the-spur-of-the-moment disposition. The person makes decisions quickly, enjoys competition, and changes easily from one task to another. The decision to act or change is quick regardless of whether the person moves slowly or rapidly (Active), or enjoys or dislikes strenuous projects (Vigorous). A person who doggedly "hangs on" when acting or thinking is typically low in this area.

Dominant (D). People scoring high on this factor think of themselves as leaders, capable of taking initiative and responsibility. They are not domineering, even though they have leadership ability. They enjoy public speaking, organizing social activities, promoting new projects, and persuading others. They are the ones who would probably take charge of the situation in case of an accident.

Stable (E for emotionally stable). Persons who have high stable scores usually are cheerful and have an even disposition. They can relax in a noisy room, and they remain calm in a crisis. They claim that they can disregard distractions while studying. They are not irritated if interrupted when concentrating, and they do not fret about daily chores. They are not annoyed by leaving a task unfinished or by having to finish it by a deadline.

Sociable (S). Persons with high scores in this area enjoy the company of others, make friends easily, and are sympathetic, cooperative, and agreeable in their relations with people. Strangers readily tell them about personal troubles.

Reflective (R). High scores in this area indicate that a person likes meditative and reflective thinking and enjoys dealing with theoretical rather than practical problems. Self-examination is characteristic of reflective persons. These people are usually quiet, work alone, and enjoy work that requires accuracy and fine detail. They often take



on more than they can finish, and they would rather plan a job than carry it out.<sup>6</sup>

Watson-Glaser Critical Thinking Appraisal. This is an instrument which is intended to evaluate an individual's abilities to think critically and also to assist him in further developing such abilities. It is a non-timed, ninety-nine item device composed of five sub-tests. Each sub-test is intended to measure a different factor related to the total concept of critical thinking. The sub-tests along with the purpose and a brief description of each are as follows:

Inference - This sub-test is designed to measure an individual's ability to determine the degree of truth or falsity of certain inferences drawn from a given set of facts. It is composed of four sets of facts with five proposed inferences for each set of facts.

Recognition of assumptions - This sub-test is intended to measure the ability of an individual to recognize unstated assumptions in a given series of statements. There are six statements with two or three proposed assumptions for each. The testee must decide whether each of the proposed assumptions is made.

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<sup>6</sup>L. L. Thurstone, Thurstone Temperament Schedule (Chicago: Science Research Associates, Inc., 1953), pp. 1-2. (Manual of Directions)

Deduction - This sub-test consists of eight exercises composed of two premises each. Each exercise is followed by certain proposed conclusions. The testee must decide whether the proposed conclusions follow from the premises given. It is designed to sample the ability to reason deductively from a given set of data.

Interpretation - This section is intended to sample the ability to weigh evidence and determine whether given inferences are warranted beyond a reasonable doubt. It is composed of eight short paragraphs, each of which is followed by proposed inferences. The testee must decide whether each of the proposed inferences follows beyond a reasonable doubt.

Evaluation of arguments - This sub-test is intended to measure an individual's ability to distinguish between arguments that are strong and important to the issue in question and those that are not. It consists of a series of issues each of which is followed by three or four arguments. The testee must decide which arguments are strong and which are weak.

The total instrument tends to correlate around .45 with various measures of intelligence.<sup>7</sup>

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<sup>7</sup>Goodwin Watson and Edward M. Glaser, Watson-Glaser Critical Thinking Appraisal (Yonkers-on-Hudson: World Book (Manual of Directions))



### Chapter Summary

Chapter IV has given a description of each of the psychological tests used in the present study. The seven tests revealed a total of thirty-three scores. As a whole they attempted to measure a person's values, ability in written communication, temperament, scholastic aptitude, attitude toward the teaching profession, and critical thinking ability.

Chapter V, which follows, presents a comparison between the psychological test scores and ratings on the Tennessee Rating Guide.

## CHAPTER V

### THE RELATIONSHIPS BETWEEN PSYCHOLOGICAL TEST SCORES AND RATINGS ON THE TENNESSEE RATING GUIDE

#### Introduction

The reader is reminded that in effect the central purpose of the present study was to determine the value of a selected battery of psychological tests for predicting a person's effectiveness as a school administrator as measured by a field rating on the Tennessee Rating Guide. In collecting the data for the present study thirty-five public school administrators were selected, administered the selected psychological test battery, and rated on the Tennessee Rating Guide. The selected psychological test battery included the following tests:

Cooperative English Test (Mechanics and Effectiveness  
of Expression)

Watson-Glaser Critical Thinking Appraisal

Miller Analogies Test

Minnesota Teacher Attitude Inventory

Allport-Vernon-Lindzey Study of Values

Thurstone Temperament Schedule

Edwards Personal Preference Schedule

The reader is referred to Chapter IV for a description of the tests. Contained in Appendix A is a copy of the

criterion, the Tennessee Rating Guide. For Rating Guide Sections I, II, V, VI, and the Total Rating Guide the administrators were divided into "upper," "middle," and "lower," groups according to their average ratings on the items contained in each of these categories. For Rating Guide Sections III and IV it was possible to divide the administrators into only "upper" and "lower" groups according to their average ratings. Contained in Appendix B are the test scores of the administrators according to the groups in which they were placed.

In order to determine the relationships which existed between the test scores and ratings on the Tennessee Rating Guide it was necessary to utilize two statistical techniques; the Kruskal-Wallis one-way analysis of variance and the Mann-Whitney U test. The remainder of this chapter is devoted to the results obtained through the use of these techniques.

#### Relationships Between Psychological Test Scores and Ratings on Rating Guide Sections I, II, V, VI and the Total Rating Guide

For Rating Guide Sections I, II, V, VI and the Total Rating Guide the Kruskal-Wallis technique was used. This technique reveals "H" scores which were computed between each of the forementioned categories of the Rating Guide and each group of psychological test scores, of which there

were thirty-three. An H score of 5.99 or greater meant, at the .05 level of confidence, that there was a genuine difference in the populations from which the data were gathered. Thus it can be concluded that there was a significant difference, at the .05 level of confidence, in the "upper," "middle," and "lower" groups test performance for every case in which the H score was 5.99 or greater. For such a difference to be significant at the .01 level of confidence it was necessary for the H score to be 9.21 or greater.

Tables V, VI, VII, and VIII, pages 73-78, present the H scores between the selected tests and Rating Guide Sections I, II, V and VI and the Total Rating Guide. Contained in Table IX, pages 80-81, are the mean and median scores for the "upper," "middle," and "lower" groups on the psychological tests that were found to be significant for Rating Guide Sections I, II, V, VI and the Total Rating Guide. A review of the H scores shows that there were fourteen instances out of 165 possibilities in which the H scores were significant.

To give the reader a better understanding of the data each psychological test and its relationships to Rating Guide Sections I, II, V, VI and the Total Rating Guide will be discussed individually. Furthermore, for each case in which a test was found to be significantly related to any of the forementioned categories of the Rating Guide the mean scores of each group will be discussed.

TABLE V

KRUSKAL-WALLIS H SCORES FOR CERTAIN PSYCHOLOGICAL TESTS (BY CERTAIN SECTIONS OF THE RATING GUIDE AND BY THE TOTAL GUIDE)

Rating Guide	Cooperative English (Mechanics)	Cooperative English (Expression)	Watson-Glaser Critical Thinking	Miller Analogies	Minnesota Teacher Attitude
Section I	4.42	7.71*	5.00	4.52	1.77
Section II	.36	2.46	1.19	.17	.67
Section V	1.38	1.53	2.51	.84	.74
Section VI	.81	.93	3.23	2.46	.21
Total Rating Guide	.83	3.21	3.18	.66	.68

Note: An asterisk indicates that the H score is significant at the .05 level of confidence.

TABLE VI

KRUSKAL-WALLIS H SCORES FOR THE ALLPORT-VERNON-LINDZEY STUDY OF VALUES  
(BY CERTAIN SECTIONS OF THE RATING GUIDE AND BY THE TOTAL GUIDE)

Rating Guide	Theoretical	Economic	Aesthetic	Social	Political	Religious
Section I	.01	4.21	.62	.73	1.96	5.49
Section II	2.91	4.85	3.46	.92	.39	3.30
Section V	.02	2.36	2.39	.39	.06	.28
Section VI	.71	3.16	2.02	.67	.66	.58
Total Rating Guide	1.36	3.39	1.28	.47	3.22	6.25*

Note: An asterisk indicates that the H' score is significant at the .05 level of confidence.

TABLE VII

KRUSKAL-WALLIS H SCORES FOR THE THURSTONE TEMPERAMENT SCHEDULE  
(BY CERTAIN SECTIONS OF THE RATING GUIDE AND BY THE TOTAL GUIDE)

Rating Guide	Active	Vigorous	Impulsive	Dominant	Stable	Sociable	Reflective
Section I	.72	2.85	1.59	.16	.84	.99	.47
Section II	2.68	2.42	2.15	1.44	2.82	3.87	3.52
Section V	.41	4.88	.85	6.40*	4.71	3.83	1.38
Section VI	.65	6.59*	.28	5.65	5.55	6.27*	1.87
Total Rating Guide	.93	.77	1.69	.07	1.78	1.07	.11

Note: An asterisk indicates that the H score is significant at the .05 level of confidence.



TABLE VIII

KRUSKAL-WALLIS H SCORES FOR THE EDWARDS PERSONAL PREFERENCE SCHEDULE  
(BY CERTAIN SECTIONS OF THE RATING GUIDE AND BY THE TOTAL GUIDE)

Rating Guide	Achievement	Deference	Order	Exhibition	Autonomy
Section I	5.04	3.00	7.95*	1.80	3.78
Section II	2.47	1.86	2.15	3.14	2.51
Section V	1.70	5.00	3.93	.57	3.29
Section VI	.98	1.78	3.30	1.51	3.00
Total Rating Guide	.76	2.83	5.88	.82	3.80

Note: An asterisk indicates that the H score is significant at the .05 level of confidence.

TABLE VIII (continued)

KRUSKAL-WALLIS H SCORES FOR THE EDWARDS PERSONAL PREFERENCE SCHEDULE  
(BY CERTAIN SECTIONS OF THE RATING GUIDE AND BY THE TOTAL GUIDE).

Rating Guide	Affiliation	Intracception	Succorance	Dominance	Abasement
Section I	3.30	8.65*	2.50	.61	5.48
Section II	.62	7.47*	1.48	1.00	3.09
Section V	.04	7.83*	4.72	.28	.23
Section VI	1.40	3.13	.51	2.68	.97
Total Rating Guide	5.55	7.66*	4.35	.48	2.30

Note: An asterisk indicates that the H score is significant at the .05 level of confidence.

TABLE VIII (continued)

KRUSKAL-WALLIS H SCORES FOR THE EDWARDS PERSONAL PREFERENCE SCHEDULE  
(BY CERTAIN SECTIONS OF THE RATING GUIDE AND BY THE TOTAL GUIDE)

Rating Guide	Nurturance	Change	Endurance	Heterosexuality	Aggression
Section I	1.03	.36	6.01*	4.69	3.36
Section II	1.96	1.97	6.43*	1.62	1.47
Section V	1.12	.96	2.89	3.94	5.55
Section VI	.27	.48	7.52*	3.56	1.71
Total Rating Guide	2.18	.27	8.40*	4.61	3.22

Note: An asterisk indicates that the H score is significant at the .05 level of confidence.

Cooperative English Test (Mechanics and Effectiveness of Expression)

The Cooperative English Test (Mechanics) did not relate significantly with any of the forementioned categories of the Rating Guide. However, it can be seen from Table V, page 73, that there was a significant relationship between Section I, Interpersonal Relations, and the Cooperative English Test (Expression). That is, this test appeared to differentiate between the "upper," "middle," and "lower" groups on Section I of the Rating Guide. The Cooperative English Test (Expression) measures a person's ability in sentence structure and style, diction, and organization. An examination of Table IX, pages 80-81, shows that on this test the mean score for the "upper" group was 44.30, for the "middle" group 34.30, and for the "lower" group 35.80.

Watson-Glaser Critical Thinking Appraisal, Miller Analogies Test, and Minnesota Teacher Attitude Inventory

Table V, page 73, indicates that there were no significant relationships between the Watson-Glaser Critical Thinking Appraisal, Miller Analogies Test, and the Minnesota Teacher Attitude Inventory and Rating Guide Sections I, II, V, VI, and the Total Rating Guide. In other words, these tests did not appear to differentiate between the groups for the forementioned categories of the Tennessee Rating Guide.

TABLE IX

SIGNIFICANT MEAN AND MEDIAN SCORES ( $H > 5.99$ ) OF "UPPER," "MIDDLE," AND "LOWER" GROUPS ON CERTAIN PSYCHOLOGICAL TESTS (BY CERTAIN SECTIONS OF THE RATING GUIDE AND BY THE TOTAL GUIDE)

Significant Relationships	Mean Scores			Median Scores		
	Upper	Middle	Lower	Upper	Middle	Lower
Section I and Co-operative English (Expression)	44.30	34.30	35.80	45.50	32.00	35.00
Section I and Edwards Personal Preference Schedule (Order)	10.10	13.20	17.00	10.00	12.50	17.00
Section I and Edwards Personal Preference Schedule (Intracception)	17.40	18.85	23.80	17.50	18.50	23.00
Section I and Edwards Personal Preference Schedule (Endurance)	14.00	14.25	19.60	15.00	14.00	20.00
Section II and Edwards Personal Preference Schedule (Intracception)	17.29	20.09	22.14	18.00	21.00	23.00
Section II and Edwards Personal Preference Schedule (Endurance)	14.82	12.81	18.57	15.00	13.00	17.00
Section V and Thurstone Temperament Schedule (Dominant)	12.20	14.28	16.62	12.50	15.00	18.00

TABLE IX (continued)

SIGNIFICANT MEAN AND MEDIAN SCORES ( $H > 5.99$ ) OF "UPPER," "MIDDLE," AND "LOWER" GROUPS ON CERTAIN PSYCHOLOGICAL TESTS (BY CERTAIN SECTIONS OF THE RATING GUIDE AND THE TOTAL GUIDE)

Significant Relationships	Mean Scores			Median Scores		
	Upper	Middle	Lower	Upper	Middle	Lower
Section V and Edwards Personal Preference Schedule (Intracception)	17.65	22.57	19.87	18.00	23.00	22.00
Section VI and Thurstone Temperament Schedule (Vigorous)	10.66	13.75	13.00	12.00	15.50	14.00
Section VI and Thurstone Temperament Schedule (Sociable)	14.00	12.43	16.85	14.50	12.00	18.00
Section VI and Edwards Personal Preference Schedule (Endurance)	14.75	13.31	19.00	15.00	14.00	19.00
Total Rating Guide and Allport-Vernon-Lindzey Study of Values (Religious)	41.57	38.68	50.40	41.00	40.00	54.00
Total Rating Guide and Edwards Personal Preference Schedule (Intracception)	18.64	18.12	23.80	19.00	17.50	23.00
Total Rating Guide and Edwards Personal Preference Schedule (Endurance)	15.57	12.93	19.60	15.50	14.00	20.00

### Allport-Vernon-Lindzey Study of Values

Table VI, page 74, contains the H scores for the six variables of the Allport-Vernon-Lindzey Study of Values. Only one of these scores was significant at the .05 level of confidence. The Religious variable appeared to differentiate between "upper," "middle," and "lower" groups according to the ratings on the Total Rating Guide. Table IX shows the mean score on the Religious variable for the "upper" group was 41.57, for the "middle" group 38.68, and for the "lower" group 50.40. A person who has a high Religious interest (the higher the score the higher the interest) is said to be "mystical" and places his highest value on "unity."

### Thurstone Temperament Schedule

The relationships between the various variables of the Thurstone Temperament Schedule and Sections I, II, V, VI and the Total Rating Guide are presented in Table VII, page 75. There were three significant scores at the .05 level of confidence for this instrument. The Vigorous variable appeared to differentiate between the "upper," "middle," and "lower" groups for Section VI, Operation as a Citizen, of the Rating Guide. The mean score for the "upper" group was 10.66, for the "middle" group 13.75, and for the "lower" group 13.00 (see Table IX). The person with a high score on the Vigorous variable has a preference for physical activity using large muscle groups. The Dominant variable related significantly



with Section V, Adequacy of Communication. Persons with high scores on this variable like to think of themselves as leaders and like to take initiative and responsibility. The mean on the Dominant variable for the "upper" group was 12.20, for the "middle" group 14.28, and for the "lower" group 16.62. The Sociable variable differentiated between the "upper," "middle," and "lower" groups for Section VI, Operation as a Citizen, of the Rating Guide. People with high scores in the Sociable area enjoy company of other people and regard themselves as sympathetic, cooperative, and agreeable. Table IX reveals the mean score for the "upper" group was 14.00, for the "middle" group 12.43, and for the "lower" group 16.85.

#### Edwards Personal Preference Schedule

Table VIII, pages 76-78, presents the relationships between the variables of the Edwards Personal Preference Schedule and Sections I, II, V, VI and the Total Rating Guide. There were nine relationships which were significant at the .05 level of confidence. The Edwards Personal Preference Schedule measures fifteen personality variables each of which is associated with a manifest need. The variables on which a person scores highest are the variables that the person considers most descriptive of himself.

According to Table VIII the Order, Intracception, and Endurance variables differentiated between the "upper," "middle," and "lower" groups for Section I, Interpersonal

Relations. A high score on the Order variable indicates a need to make advance plans, organize details, and arrange work according to some system. A person with a high score on the Intracception variable seemingly has a need for analyzing the behavior of others and for judging people by why they do things rather than what they do. An individual who prefers to work on a single task until it is completed and likes to work without distractions and interruptions generally has a high score on the Endurance variable. Contained in Table IX, pages 80-81, are the mean scores for the "upper," "middle," and "lower" groups on Section I for each of the forementioned variables. On the Order variable the mean for the "upper" group was 10.10, for the "middle" group 13.20, and for the "lower" group 17.00. On the Intracception variable the mean for the "upper" group was 17.40, for the "middle" group 18.85, and for the "lower" group 23.80. On the Endurance variable the mean for the "upper" group was 14.00, for the "middle" group 14.25, and for the "lower" group 19.60.

Table VIII, pages 76-78, shows that for Section II, Intelligent Operation, of the Rating Guide, the Intracception and Endurance variables differentiated between the "upper," "middle," and "lower" groups. On the Intracception variable the mean score for the "upper" group was 17.29, for the "middle" group 20.09, and for the "lower" group 22.14 (see Table IX). On the Endurance variable the mean for the "upper"

group was 14.82, for the "middle" group 12.81, and for the "lower" group 18.57. According to Table VIII the Intracception variable differentiated between the "upper," "middle," and "lower" groups for Section V, Adequacy of Communication, of the Rating Guide. The mean for the "upper" group was 17.65, for the "middle" group 22.57, and for the "lower" group 19.87.

The Endurance variable differentiated between the "upper," "middle," and "lower" groups for Section VI, Operation as a Citizen, of the Rating Guide as shown in Table VIII. The mean for the "upper" group was 14.75, for the "middle" group 13.31, and for the "lower" group 19.00.

For the Rating Guide as a whole (Total Rating Guide) both the Intracception and Endurance variables of the Edwards Personal Preference Schedule differentiated between the "upper," "middle," and "lower" groups. On the Intracception variable the mean for the "upper" group was 18.64, for the "middle" group 18.12, and for the "lower" group 23.80. On the Endurance variable the mean score for the "upper" group was 15.57, for the "middle" group 12.93, and for the "lower" group 19.60.

#### Relationships Between Psychological Test Scores and Ratings on Sections III and IV of the Tennessee Rating Guide

As has been mentioned previously, to determine the extent of the relationships between the psychological test

scores and ratings on Section III, Emotional Stability, and Section IV, Ethical and Moral Strength, of the Rating Guide the Mann-Whitney technique was used. In using this technique the administrators were divided into "upper" and "lower" groups according to their average rating on each of the forementioned sections of the Rating Guide. Then, using the Mann-Whitney technique, U scores which were converted to z scores were computed between Sections III and IV of each psychological test score. The results are presented in Tables X, XI, XII, and XIII, pages 87-92.

Contained in Table XIV, page 93, are the mean and median test scores for the "upper" and "lower" groups on the psychological tests that were found to relate significantly to ratings on Section III and IV of the Rating Guide. A z score of 1.96 or greater indicated that in effect there was a significant difference in the test scores of the "upper" and "lower" groups at the .05 level of confidence. A z score of 2.58 or greater indicated there was a significant difference in the test scores of the two groups at the .01 level of confidence. An examination of Tables X, XI, XII, and XIII reveals that there were six significant z scores, at the .05 level of confidence, out of sixty-six possibilities.

Following the procedure used earlier in this chapter each psychological test and its relationships to Section III and/or IV of the Rating Guide will be discussed individually.

TABLE X

MANN-WHITNEY U SCORES CONVERTED TO z SCORES FOR CERTAIN PSYCHOLOGICAL TESTS  
(BY SECTIONS III AND IV OF THE RATING GUIDE)

Rating Guide	Cooperative English (Mechanics)	Cooperative English (Expression)	Watson-Glaser Critical Thinking Appraisal	Miller Analogies	Minnesota Teacher Attitude
Section III	1.04	.45	.28	.05	.31
Section IV	2.12*	1.57	1.02	.73	.33

Note: An asterisk indicates that the score is significant at the .05 level of confidence.

TABLE XI

MANN-WHITNEY U SCORES CONVERTED TO z SCORES FOR  
 THE ALLPORT-VERNON-LINDZEY STUDY OF VALUES  
 (BY SECTIONS III AND IV OF THE RATING GUIDE)

Rating Guide	Theoretical	Economic	Aesthetic	Social	Political	Religious
Section III	1.27	2.36*	.75	1.46	.94	.73
Section IV	.16	.65	.71	.75	.39	.73

Note: An asterisk indicates that the score is significant at the .05 level of confidence.

TABLE XII

MANN-WHITNEY U SCORES CONVERTED TO z SCORES FOR THE  
THURSTONE TEMPERAMENT SCHEDULE (BY SECTIONS  
III AND IV OF THE RATING GUIDE

Rating Guide	Active	Vigorous	Impulsive	Dominant	Stable	Sociable	Reflective
Section III	2.17*	1.46	1.25	.14	2.48*	.28	.35
Section IV	.51	.57	.18	1.00	.37	1.83	2.06*

Note: An asterisk indicates that the score is significant at the .05 level of confidence.



TABLE XIII

MANN-WHITNEY U SCORES CONVERTED TO z SCORES FOR THE  
EDWARDS PERSONAL PREFERENCE SCHEDULE (BY SECTIONS  
III AND IV OF THE RATING GUIDE)

Rating Guide	Achievement	Deference	Order	Exhibition	Autonomy
Section III	.45	1.49	1.88	1.70	.09
Section IV	1.02	.27	.94	.82	.71

Note: An asterisk indicates that the score is significant at the .05 level of confidence.

TABLE XIII (continued)

MANN-WHITNEY U SCORES CONVERTED TO z SCORES FOR THE  
EDWARDS PERSONAL PREFERENCE SCHEDULE (BY SECTIONS  
III AND IV OF THE RATING GUIDE)

Rating Guide	Affiliation	Intracception	Succorance	Dominance	Abasement
Section III	1.84	2.15*	.14	1.08	1.16
Section IV	.00	.98	.84	1.30	.37

Note: An asterisk indicates that the score is significant at the .05 level of confidence.

TABLE XIII (continued)

MANN-WHITNEY U SCORES CONVERTED TO z SCORES FOR THE  
EDWARDS PERSONAL PREFERENCE SCHEDULE (BY SECTIONS  
III AND IV OF THE RATING GUIDE)

Rating Guide	Nurturance	Change	Endurance	Heterosexuality	Aggression
Section III	.12	.61	1.51	1.20	.66
Section IV	.57	.08	.92	.98	.27

Note: An asterisk indicates that the score is significant at the .05 level of confidence.

TABLE XIV

SIGNIFICANT MEAN AND MEDIAN SCORES ( $z > 1.96$ ) OF "UPPER"  
AND "LOWER" GROUPS ON CERTAIN PSYCHOLOGICAL TESTS BY  
SECTIONS III AND IV OF THE RATING GUIDE

Significant Relationships	Mean Scores		Median Scores	
	Upper	Lower	Upper	Lower
Section III and Allport-Vernon-Lindzey Study of Values (Economic)	43.00	36.40	43.00	37.00
Section III and Thurstone Temperament Schedule (Active)	11.87	7.80	12.50	8.00
Section III and Thurstone Temperament Schedule (Stable)	12.73	17.20	12.00	19.00
Section III and Edwards Personal Preference Schedule (Intracception)	18.47	23.20	18.50	23.00
Section IV and Cooperative English (Mechanics)	103.81	80.50	108.00	84.00
Section IV and Thurstone Temperament Schedule (Reflective)	9.96	7.63	10.00	8.50

Also, in the six instances where the tests were significant the mean test score of the "upper" and "lower" group will be discussed.

Cooperative English Test (Mechanics and Effectiveness of Expression)

Table X, page 87, shows that the Cooperative English Test (Mechanics) related significantly to Section IV of the Rating Guide. That is, the test scores of the persons rated in the "lower" group and in the "upper" group were significantly different. This test measures a person's knowledge of grammar, punctuation, capitalization and spelling. According to Table XIV, page 93, the mean score on the Cooperative English Test (Mechanics) for the "upper" group was 103.81 and for the "lower" group 80.50. The Cooperative English Test (Expression) did not relate significantly with either Sections III or IV of the Rating Guide.

Watson-Glaser Critical Thinking Appraisal, Miller Analogies Test, and Minnesota Teacher Attitude Inventory

According to Table X, page 87, the Watson-Glaser Critical Thinking Appraisal, Miller Analogies Test, and the Minnesota Teacher Attitude Inventory did not differentiate significantly between the "upper" and "lower" groups on either Sections III or IV of the Rating Guide.

### Allport-Vernon-Lindzey Study of Values

From Table XI, page 88, it can be seen of the variables of the Allport-Vernon-Lindzey Study of Values one was significant for differentiating between the "upper" and "lower" groups on Sections III or IV of the Rating Guide. The Economic variable differentiated between the "upper" and "lower" groups on Section III. An individual who has a high score in the Economic area is primarily concerned with being useful and is interested in the affairs of the business world. The mean score for the "upper" group on this variable was 43.00 and for the "lower" group 36.40.

### Thurstone Temperament Schedule

There were three significant scores for the Thurstone Temperament Schedule (Table XII, page 89). The Active variable differentiated between the "upper" and "lower" groups on Section III of the Rating Guide. A high score on the Active variable indicates a person who is restless and works or moves rapidly. According to Table XIV, page 93, the mean for the "upper" group on the Active variable was 11.87 and for the "lower" group 7.80. The Stable variable also differentiated between the "upper" and "lower" groups on Section III. Persons with high Stable scores are usually cheerful, have an even disposition, and are not easily upset by interruptions or distractions. The mean Stable score for the

"upper" group was 12.73 and for the "lower" group 17.20. The Reflective variable differentiated between the "upper" and "lower" groups on Section IV of the Rating Guide. A high score in this area is indicative of a person who likes to meditate and enjoys dealing with theoretical rather than practical problems. Self-examination is also characteristic of a "reflective" person. The mean for the "upper" group on this variable was 9.96 and for the "lower" group 7.63.

#### Edwards Personal Preference Schedule

Table XIII, pages 90-92, shows that of the variables of the Edwards Personal Preference Schedule one had a significant relationship with Sections III or IV of the Rating Guide. The Intracception variable differentiated between the "upper" and "lower" groups on Section III of the Rating Guide. The mean on the Intracception variable for the "upper" group was 18.47 and for the "lower" group 23.20.

#### Chapter Summary

This chapter has presented an analysis of the relationships between the psychological test scores of the selected group of school administrators and their ratings on the Tennessee Rating Guide. An examination of the results as a whole shows that there were twenty instances out of 231 possibilities where the test results were significant, at the



.05 level of confidence, for differentiating between groups according to ratings on all or part of the Tennessee Rating Guide. It should be noted that nine of the twenty significant instances involved the Intracception or Endurance variables of the Edwards Personal Preference Schedule. There were five significant relationships for the Intracception variable and four for the Endurance variable. There were no psychological tests which differentiated between groups at the .01 level of confidence.

## CHAPTER VI

### SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

#### Summary

The problem in the present study was to identify certain psychological tests, or parts thereof, which would differentiate among practicing school administrators with regard to effectiveness and ineffectiveness by using a field rating on the Tennessee Rating Guide as the criterion. An average rating of 4.0 or greater on the Rating Guide characterized the effective school administrator. The effective school administrators were referred to as the "upper" group in the study. An average rating of 3.0 or less on the Rating Guide characterized the ineffective school administrator. The ineffective school administrators were referred to as the "lower" group in the study.

It was hypothesized that certain psychological tests, or parts thereof, could be identified which would differentiate among a selected group of practicing school administrators, with regard to effectiveness and ineffectiveness, by using a field rating on the Tennessee Rating Guide as the criterion. It was assumed that the Tennessee Rating Guide was a valid and reliable instrument for determining the behavioral characteristics of school administrators.

A battery of psychological tests, containing a total of thirty-three instruments, was selected for use in this investigation. Tentative research evidence, which indicated that the tests included in the battery might have value in differentiating between school administrators according to their degree of effectiveness, was the basis on which the tests were selected. A total of thirty-five practicing school administrators were selected, administered the selected psychological test battery, and assigned a field rating on the Rating Guide.

It was necessary to use two statistical procedures in treating the data. Based on average scores "upper," "middle," and "lower" groups were determined for Sections I, II, V, VI, and the Total Rating Guide. The Kruskal-Wallis technique seemed most appropriate for determining the relationships between the test scores and the forementioned categories of the Rating Guide. For Sections III and IV of the Rating Guide only "upper" and "lower" groups emerged; thus, the Mann-Whitney technique seemed appropriate.

An analysis of the data revealed that of 231 possible relationships between the psychological tests and the categories of the Rating Guide twenty were found to be significant at the .05 level of confidence. There were no significant relationships at the .01 level of confidence.

It was found that the tests listed below were significant in differentiating between groups who were judged to

possess different operational characteristics within the following categories of the Rating Guide. Also indicated, based on mean scores, are the groups which had the higher and lower scores.

#### Section I, Interpersonal Relations

Cooperative English Test (Expression) (upper group, high score; middle group, low score)

Edwards Personal Preference Schedule (Order) (upper group, low score; lower group, high score)

Edwards Personal Preference Schedule (Intracception) (upper group, low score; lower group, high score)

Edwards Personal Preference Schedule (Endurance) (upper group, low score; lower group, high score)

#### Section II, Intelligent Operation

Edwards Personal Preference Schedule (Intracception) (upper group, low score; lower group, high score)

Edwards Personal Preference Schedule (Endurance) (middle group, low score; lower group, high score)

#### Section III, Emotional Stability

Allport-Vernon-Lindzey Study of Values (Economic) (upper group, high score; lower group, low score)

Thurstone Temperament Schedule (Active) (upper group, high score; lower group, low score)

Thurstone Temperament Schedule (Stable) (upper group, low score; lower group, high score)

Edwards Personal Preference (Intracception)

(upper group, low score; lower group, high score)

Section IV, Ethical and Moral Strength

Cooperative English Test (Mechanics)

(upper group, high score; lower group, low score)

Thurstone Temperament Schedule (Reflective)

(upper group, high score; lower group, low score)

Section V, Adequacy of Communication

Thurstone Temperament Schedule (Dominant)

(upper group, low score; lower group, high score)

Edwards Personal Preference Schedule (Intracception)

(upper group, low score; middle group, high score)

Section VI, Operation as a Citizen

Edwards Personal Preference Schedule (Endurance)

(middle group, low score; lower group, high score)

Thurstone Temperament Schedule (Vigorous)

(upper group, low score; middle group, high score)

Thurstone Temperament Schedule (Sociable)

(middle group, high score; lower group, high score)

Total Rating Guide

Allport-Vernon-Lindzey Study of Values (Religious)

(middle group, low score; lower group, high score)

Edwards Personal Preference Schedule (Intracception)

(middle group, low score; lower group, high score)

Edwards Personal Preference Schedule (Endurance)

(middle group, low score; lower group, high score)

No significant relationships were found between the operational behavior of the school administrators, as measured by the Rating Guide, and the Miller Analogies Test, Watson-Glaser Critical Thinking Appraisal, and the Minnesota Teacher Attitude Inventory. This finding was inconsistent with the findings of Moffett<sup>1</sup> and/or Luton<sup>2</sup>. The research conducted at the University of Texas<sup>3</sup> also indicated that the Miller Analogies Test and the Watson-Glaser Critical Thinking Appraisal had some value in predicting on-the-job performance of educators. Furthermore, the University of Michigan investigations, which were reported by Kelly and Fiske,<sup>4</sup> found the Miller Analogies Test to have some predictive value.

It should be noted that the present study has substantiated the findings of Moffett<sup>5</sup> and Luton<sup>6</sup> to the extent

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<sup>1</sup>Charles R. Moffett, "Operational Characteristics of Beginning Masters' Students in Educational Administration and Supervision" (Unpublished Ed. D. thesis, University of Tennessee, June 1954), p. 163.

<sup>2</sup>James N. Luton, "A Study of the Use of Standardized Tests in the Selection of Potential Educational Administrators" (Unpublished Ed. D. thesis, University of Tennessee, March 1955), pp. 73-74.

<sup>3</sup>Kenneth E. McIntyre, "What Are They Like," Phi Delta Kappan, 37:288-291, April 1956.

<sup>4</sup>E. Lowell Kelly and Donald W. Fiske, The Prediction of Performance in Clinical Psychology (Ann Arbor, Michigan: University of Michigan Press, 1951), p. 195.

<sup>5</sup>Moffett, op. cit., p. 163.

<sup>6</sup>Luton, op. cit., pp. 73-74.



that the Cooperative English Test (Mechanics and Effectiveness of Expression) and certain variables of the Allport-Vernon Lindzey Study of Values appear to have some predictive value relative to the performance of school administrators. However, it is emphasized that there was no instance in which either of the forementioned tests was found to be significantly related to the categories of the Rating Guide specifically designated by Moffett and/or Luton.

### Conclusions

Based on the results of this investigation, the following conclusions seemed warranted:

1. The higher an individual's score on the Cooperative English Test (Expression) the more effective he is likely to be in those aspects of his operational behavior measured by Section I of the Rating Guide.

2. The lower an individual's score on the Intra-ception variable of the Edwards Personal Preference Schedule the more effective he is likely to be in those aspects of his operational behavior measured by Sections I, II, III, V, and the Total Rating Guide.

3. The higher an individual's score on the Endurance variable of the Edwards Personal Preference Schedule the more ineffective he is likely to be in those aspects of his



operational behavior measured by Sections I, II, VI, and the Total Rating Guide.

4. The higher an individual's score on the Order variable of the Edwards Personal Preference Schedule the more ineffective he is likely to be in those aspects of his operational behavior measured by Section I of the Rating Guide.

5. The higher an individual's score on the Economic variable of the Allport-Vernon-Lindzey Study of Values the more effective he is likely to be in those aspects of his operational behavior measured by Section III of the Rating Guide.

6. The higher an individual's score on the Active variable of the Thurstone Temperament Schedule and the lower his score on the Stable variable the more effective he is likely to be in those aspects of his operational behavior measured by Section III of the Rating Guide.

7. The higher an individual's score on the Co-operative English Test (Mechanics) and the Thurstone Temperament Schedule (Reflective) the more effective he is likely to be in those aspects of his operational behavior measured by Section IV of the Rating Guide.

8. The lower an individual's score on the Dominant variable of the Thurstone Temperament Schedule the more effective he is likely to be in those aspects of his operational behavior measured by Section V of the Rating Guide.

9. The lower an individual's score on the Vigorous variable of the Thurstone Temperament Schedule the more effective he is likely to be in those aspects of his operational behavior measured by Section VI of the Rating Guide.

10. The higher an individual's score on the Sociable variable of the Thurstone Temperament Schedule the more ineffective he is likely to be on those aspects of his operational behavior measured by Section VI of the Rating Guide.

11. The higher an individual's score on the Allport-Vernon-Lindzey Study of Values (Religious) the more ineffective he is likely to be in those aspects of his operational behavior measured by the Rating Guide as a whole.

12. Among the battery of tests utilized in the present study there is no one test which is the best predictor of effectiveness in school administration. For those aspects of operational behavior measured by the Rating Guide the Thurstone Temperament Schedule and the Edwards Personal Preference Schedule seem to be most promising.

13. The preceding conclusions, when viewed as a whole, suggest the general conclusion that the hypothesis which gave direction to this study has not been substantiated to a very high degree.

### Recommendations

The results of the research studies reviewed in Chapter II of the present study were inconclusive relative to the predictive value of standardized psychological tests. Furthermore, the results of the present study were inconclusive relative to the value of selected tests in differentiating among effective and ineffective school administrators. There are at least two possible explanations for the lack of conclusive data in the present study. First, the psychological tests included in the test battery used might not have been the most appropriate available instruments. Second, the possibility exists that there was a weakness in the criterion measure used, a field rating on The Tennessee Rating Guide.

In view of the foregoing the following possibilities are suggested:

1. Research to uncover more appropriate standardized psychological tests for differentiating among effective and ineffective school administrators could be undertaken.
2. Using appropriate available data, a standardized instrument for determining the degree of effectiveness in school administration could be developed.
3. Other research using different criteria for establishing the degree of effectiveness in school administration could be undertaken.

## BIBLIOGRAPHY

## BIBLIOGRAPHY

Allport, Gordon W., et al. Study of Values - A Scale for Measuring the Dominant Interest in Personality. Boston: Houghton-Mifflin Company, 1951. (Manual of Directions)

Coker, Phyllis. "A Study of the Use of the Tennessee Rating Guide as a Means of Differentiating Between Effective and Ineffective School Administrators." Unpublished M.S. thesis, The University of Tennessee, August 1956.

Cook, Walter W. Minnesota Teacher Attitude Inventory. New York: The Psychological Corporation, 1951. (Manual of Directions)

Cooperative English Expression Tests. Information Concerning Their Construction, Interpretation, and Use. New York: The Cooperative Test Service, 1940. (Manual)

Edwards, Allen L. Edwards Personal Preference Schedule. New York: The Psychological Corporation, 1954. (Manual of Directions)

\_\_\_\_\_, Statistical Analysis. New York: Rinehart & Company, Inc., 1946.

Freeman, Frank S. Theory and Practice of Psychological Testing. New York: Henry Holt and Company, 1950.

Garrett, Henry E. Statistics in Psychology and Education. Fourth Edition. New York: Longmans, Green and Company, Inc., 1955.

Gentry, Harold W. "Patterns of Behavioral Characteristics Exhibited by School Administrators." Unpublished Ed. D. thesis, The University of Tennessee, June 1957.

Gould, George. "The Predictive Value of Certain Selective Measures," Educational Administration and Supervision, 33 (April 1947), 208-12.

Greever, Clarence E. "A Study of the Characteristics of Selected Effective Superintendencies in East Tennessee." Unpublished Ed. D. thesis, The University of Tennessee, June 1956.

- Kelley, Truman Lee. Fundamentals of Statistics. Cambridge: Harvard University Press, 1947.
- Kelly, E. Lowell and Fiske, Donald W. The Prediction of Performance in Clinical Psychology. Ann Arbor: University of Michigan Press, 1951.
- Leavitt, Jerome E. "Personnel Data and Prediction of Success for Standard Teachers," The Journal of Teacher Education, 4 (September 1953), 194-197.
- Luton, James N. "A Study of the Use of Standardized Tests in the Selection of Potential Educational Administrators." Unpublished Ed. D. thesis, The University of Tennessee, March 1955.
- McIntyre, Kenneth E. "What Are They Like," Phi Delta Kappan, 37 (April 1956), 288-291.
- Moffett, Charles R. "Operational Characteristics of Beginning Masters' Students in Educational Administration and Supervision." Unpublished Ed. D. thesis, The University of Tennessee, June 1954.
- Ohlsen, Merle M. and Schultz, Raymond E. "A Study of Variables for Use in Selection," The Journal of Teacher Education, 5 (December 1954), 279-282.
- Sartain, A. Q. "Relation Between Scores on Certain Standard Tests and Supervisory Success in an Aircraft Factory," The Journal of Applied Psychology, 30 (August 1946), 328-332.
- Siegel, Sidney. Nonparametric Statistics for the Behavioral Sciences. New York: McGraw-Hill Book Company, Inc., 1956.
- Stoelting, Gustave J. "The Selection of Candidates for Teacher Education at the University of Wisconsin," Journal of Experimental Education, 24 (December 1955), 115-132.
- Taylor, Gem K. "The Development of Effective Characteristics in Students of School Administration." Unpublished Ed. D. thesis, The University of Tennessee, June 1957.
- Thurstone, L. L. Thurstone Temperament Schedule. Chicago: Science Research Associates, Inc., 1953. (Manual of Directions)

Topetzes, Nick J. "A Program for the Selection of Trainees in Physical Medicine," Journal of Experimental Education, 25 (June 1957), 263-322.

"The University of Tennessee Kellogg Research Project on the Behavioral Characteristics of Effective and In-effective School Administrators--A Progress Report." Prepared by the staff of the Department of Educational Administration and Supervision, The University of Tennessee, December 1956. (Multilithed)

Watson, Goodwin and Glaser, Edward M. Watson-Glaser Critical Thinking Appraisal. Yonkers-on-Hudson: World Book Company, 1952. (Manual of Directions)



## APPENDIXES

**APPENDIX A**

**University of Tennessee Rating Guide  
Characteristics of School Administrators  
As Revised February 21, 1957**

UNIVERSITY OF TENNESSEE RATING GUIDE  
Characteristics of School Administrators

As revised February 21, 1957

I. Interpersonal Relations

A. How does he relate to others?

- ☐ 1. Tends to be a lone wolf
- ☐ 2. Has a few friends but tends to ignore others
- ☐ 3. Friendly when approached by others
- ☒ 4. Popular; has many casual acquaintances
- ☐ 5. Steadily warm and appealing in relationship with others

Remarks:

B. Does he utilize the opinion of others?

- ☐ 1. Generally ignores the viewpoints of others
- ☐ 2. Uses opinions if they agree with his own
- ☐ 3. Values opinions of those who volunteer suggestions but fails to seek opinions of others
- ☐ 4. Highly selective in utilizing opinions; sometimes values ideas that differ from his own
- ☐ 5. Consistently seeks and considers the opinions of others

Remarks:

C. Is he skillful in developing an organization in which each can do his best?

- ☐ 1. Most people with whom he works are carrying important responsibilities in which they are genuinely interested
- ☐ 2. Sometimes delegates responsibilities with regard to special interests and abilities of associates
- ☐ 3. Delegates tasks largely mechanically; fails to recognize special abilities of others
- ☐ 4. Plays favorites in delegating responsibility
- ☐ 5. Runs the whole show himself

Remarks:

D. Is he skillful in getting policies formulated co-operatively?

- ☐ 1. Involves general public, staff members and students in major policy formulation
- ☐ 2. Attempts to involve general public staff members and students in policy formulation but has difficulty in setting up necessary machinery
- ☐ 3. Involves only key people in policy formulation
- ☐ 4. Discusses policies with others, but decisions are usually made prior to the discussion
- ☐ 5. Formulates policies himself; rarely discusses them with others

Remarks:

E. Is he skillful in continuous implementation of policies?

- ☐ 1. Tends to ignore new policies
- ☐ 2. Tends to defer action on new policies
- ☐ 3. Vacillates with regard to employing new policies
- ☐ 4. Overly cautious in effecting new policies
- ☐ 5. Moves surely and judiciously in effecting new policies

Remarks:

F. Does he help the group arrive at a working consensus?

- ☐ 1. Tries to force group to quick agreements without really considering problems
- ☐ 2. Forces action on the basis of majority opinions without careful group consideration
- ☐ 3. Sometimes neglects recognition of minority viewpoints on problems
- ☐ 4. Strives for consensus but sometimes encourages group action on insufficient data
- ☐ 5. Continually strives for careful group problem analysis; helps group recognize points of agreement

Remarks:

G. Do his actions indicate that he believes democratic means are essential to the attainment of democratic ends?

- ☐ 1. Urges the use of processes consistent with best democratic practices
- ☐ 2. Is cognizant of responsibility to use democratic procedures; is sometimes unsure of how to employ them
- ☐ 3. Attempts to use democratic means; however, can be expected to resort to expedient means on pressing problems
- ☐ 4. Gives lip service to democratic processes which are not evident in his behavior
- ☐ 5. Uses any expedient method available to attain a predetermined end

Remarks:

II. Intelligent Operation

A. Does he give sufficient consideration to new data in problem solving?

- ☐ 1. Disregards new data that challenge the status quo
- ☐ 2. Uses new data only when they support his position
- ☐ 3. Will consider new data when presented to him
- ☐ 4. Seeks new data along lines of special interests
- ☐ 5. Consistently seeks and employs new data

Remarks:

B. Does he recognize and define problems?

- ☐ 1. Tends not to recognize the existence of problems
- ☐ 2. Tends to consider symptoms instead of problems
- ☐ 3. Sometimes confuses symptoms with problems in his efforts to improve
- ☐ 4. Recognizes problems but has difficulty in analyzing them
- ☐ 5. Recognizes and analyzes problems.

Remarks:

C. Is he consistent in terms of his basic assumptions?

- ☐ 1. Supports conflicting ideas; action characterized by inconsistency
- ☐ 2. Has a tendency to discuss important problems in terms of his likes and dislikes
- ☐ 3. Frequently uncertain of his position on controversial subjects
- ☐ 4. Is certain of his position and consistent in his behavior in areas which he considers important
- ☐ 5. Is dependable and predictable in word and action

Remarks:

D. Does he have an experimental attitude?

- ☐ 1. Tends to try out new ideas after careful study and follows through on basis of results of experimentation
- ☐ 2. Undertakes various new projects for improvement but fails to interpret their significance
- ☐ 3. May be premature in trying out ideas for improvement; fails to fully incorporate accepted principles of experimentation
- ☐ 4. Action tends to be based on hunches, intuition, and other subjective means
- ☐ 5. Tends to operate within traditional practices

Remarks:

E. Does he try to recognize and deal with his own biases?

- ☐ 1. Consistently examines his own position in relation to the positions of others
- ☐ 2. Tends to evaluate his position but will resort to biases under pressure
- ☐ 3. Feels uneasy about his position at times; can be stimulated to examine his opinions
- ☐ 4. Assumes that his position is generally right; does not know how to identify his own biases
- ☐ 5. Refuses to examine his position

Remarks:

F. Does he appear to have profited by previous experience?

- ☐ 1. Frequently makes the same mistake but seldom admits it
- ☐ 2. Usually attempts to justify mistakes
- ☐ 3. Recognizes that some mistakes are inevitable but has difficulty in making readjustments
- ☐ 4. Makes some improvement as a result of past mistakes
- ☐ 5. Recognizes a mistake when he makes one and seeks to avoid repeating it

Remarks:

G. Does he have the ability to size up people?

- ☐ 1. Judges potentialities of people in terms of their race, religion, nationality, or other such concepts
- ☐ 2. Makes judgements about people in terms of hunches
- ☐ 3. Tends to base judgments of people on past experiences without rethinking in terms of present situations
- ☐ 4. Judges people on basis of personal experiences, using additional resources when problem situations arise
- ☐ 5. Consciously endeavors to understand the basic potentialities of each person through objective procedures

Remarks:

H. Does he accept responsibility wisely?

- ☐ 1. Budgets the assuming of responsibilities wisely in terms of own limitations in present situation
- ☐ 2. Carries out pressing responsibilities well but neglects to postpone less urgent duties
- ☐ 3. Concentrates on school routine; supports non-school endeavors on a highly selective basis
- ☐ 4. Attends strictly to school routine without participating in community enterprises
- ☐ 5. Accepts too many responsibilities or refuses to assume responsibilities normally expected of him

Remarks:



## III. Emotional Stability

A. Is he emotionally stable?

- ☐ 1. Tends to be upset by everyday occurrences and keeps staff in continuous uproar
- ☐ 2. Attempts to exemplify outward calmness but explodes about trivial matters
- ☐ 3. Is upset in novel situations and has a tendency to upset others
- ☐ 4. Meets novel situations well but lets some problems involve him in distracting entanglements
- ☐ 5. Appears to meet crises with a contagious calmness; others feel at ease in his presence

Remarks:

## IV. Ethical and Moral Strength

A. Does he have the courage of his convictions?

- ☐ 1. Tends to weasel out of situations
- ☐ 2. Usually follows most popular viewpoint
- ☐ 3. Has a tendency to accept some viewpoints which he realizes are in conflict with his own
- ☐ 4. Has well-tempered convictions which he tries to follow but is sometimes unsure as to their soundness
- ☐ 5. Place principle above his own personal advantage

Remarks:

B. Does he deal honestly with others?

- ☐ 1. Considers agreements with others as promissory notes to which he is committed
- ☐ 2. Exhibits honesty in important agreements, but in less important agreements is somewhat careless
- ☐ 3. Tends to rationalize inadvertent breaches of agreements
- ☐ 4. Through indirect methods leads people to believe in false situations
- ☐ 5. Tends to be unscrupulous in accomplishing his purposes

Remarks:

## V. Adequacy of Communication

A. How well does he express himself orally?

- ☐ 1. Chooses words which clearly convey ideas, and has the ability to draw analogies in expressing abstract ideas
- ☐ 2. Can express practical thoughts fairly well, but has difficulty with abstractions
- ☐ 3. Is unimpressive in oral communication
- ☐ 4. Expresses himself in a fuzzy, incomprehensible manner and tends to puzzle listeners concerning what he means
- ☐ 5. Is either unable or does not desire to bother about attempting to convey thoughts to others

Remarks:

B. Is he a good listener?

- ☐ 1. Attempts to be attentive in trying to grasp ideas expressed by others
- ☐ 2. Listens carefully to things in which he is interested
- ☐ 3. Appears to listen but has difficulty in concentration
- ☐ 4. Tends to disrupt oral communication by inattentiveness or by introduction of irrelevant ideas
- ☐ 5. Tends to listen only to himself

Remarks:

C. Does he interest people in examining ideas?

- ☐ 1. Stimulates people to seek solutions through critical analyses of ideas
- ☐ 2. Encourages examination of ideas that he thinks are important
- ☐ 3. Waxes hot and cold in stimulating examination of ideas
- ☐ 4. Appears to consider intellectual curiosity as unimportant
- ☐ 5. Discourages examination of ideas

Remarks:

D. How skillful is he in chairing group discussions?

- ☐ 1. Is at a loss when he finds himself appointed official leader of a group
- ☐ 2. Permits everyone to talk without ever achieving a group decision
- ☐ 3. Tends to rely on key persons in group discussions
- ☐ 4. Operates well within a structured agenda
- ☐ 5. Facilitates a stimulating and well-ordered climate conducive to reaching group decisions

Remarks:

VI. Operation as a Citizen

A. Does he help people interpret significant contemporary trends and events?

- ☐ 1. Does not seem to be informed about or interested in contemporary events
- ☐ 2. Discusses current affairs in terms of stock phrases and generalities
- ☐ 3. Knows about current affairs but is influenced by prejudice in discussing them
- ☐ 4. Is well informed in the socioeconomic problems in which he is interested
- ☐ 5. Discusses intelligently major social, political and economic issues

Remarks:

B. How cooperative is he with non-educational groups working for community betterment?

- ☐ 1. Is aware of and actively concerned with desires and interests of community groups, agencies and organizations
- ☐ 2. Is interested in cooperating with community groups but spreads his efforts too thinly
- ☐ 3. Is selective in cooperating with groups in proportion to pressures applied
- ☐ 4. Becomes so involved with activities of non-educational groups that he neglects proper administration of the school program
- ☐ 5. Considers the school an island that is competitive with non-educational groups

Remarks:

C. What is his attitude toward minority groups in the school community?

- ☐ 1. Insists that minority points of view be appropriately represented in community-school decisions
- ☐ 2. Upholds right of most minority viewpoints to be represented but neglects consideration of those that are extreme
- ☐ 3. Follows a hands-off policy in regard to minority groups in the community
- ☐ 4. Tends to ignore the existence of minority groups in the community
- ☐ 5. Indicates that minority groups have no right to representation in community-school affairs

Remarks:

## APPENDIX B

Test Scores of Administrators on Certain Psychological  
Tests Who Rated in the "Upper Group," "Middle Group,"  
and in the "Lower Group" on Each Section of the  
Rating Guide and the Total Rating Guide

TABLE XV

TEST SCORES OF ADMINISTRATORS ON SELECTED PSYCHOLOGICAL TESTS  
WHO RATED IN THE "UPPER GROUP," "MIDDLE GROUP," AND IN THE  
"LOWER GROUP" ON SECTION I OF THE RATING GUIDE.

Cooperative English (Mech.)	English (Exp.)	Watson-Glaser Critical Thinking App.	Miller Analogies	Minn. T. Attitude
<u>Upper Group</u>				
87	45	65	28	85
109	38	81	59	104
90	41	67	28	61
44	31	60	25	66
117	36	59	28	53
138	45	70	54	111
136	53	83	43	107
145	56	84	59	56
120	46	76	30	86
148	52	91	49	95
<u>Middle Group</u>				
113	48	73	76	-22
118	23	77	33	96
96	26	58	32	96
73	30	52	14	-10
58	30	74	27	54
55	35	58	19	24
95	38	56	19	- 2
105	40	65	35	81
53	29	57	23	31
79	27	56	31	82
128	52	86	43	97
137	31	61	32	95
89	33	65	24	67
103	45	77	30	94
87	25	74	47	94
82	26	67	23	83
86	25	59	20	3
128	47	57	15	87
69	38	73	21	99
108	38	65	28	42
<u>Lower Group</u>				
98	35	65	45	- 2
65	23	68	20	93
118	44	75	27	42
106	42	85	37	109
64	35	66	33	65

TABLE XVI

TEST SCORES OF ADMINISTRATORS ON THE ALLPORT-VERNON-LINDZEY  
STUDY OF VALUES WHO RATED IN THE "UPPER GROUP," "MIDDLE  
GROUP," AND IN THE "LOWER GROUP" ON SECTION I ...  
OF THE RATING GUIDE

Theoretical	Economic	Aesthetic	Social	Political	Religious
<u>Upper Group</u>					
40	39	40	36	43	41
47	57	50	40	32	27
50	50	26	39	32	43
48	44	31	32	44	41
46	44	27	48	34	41
24	33	54	33	55	41
38	50	26	41	45	40
48	43	35	40	38	36
45	45	28	40	43	39
36	44	25	37	50	48
<u>Middle Group</u>					
66	43	40	21	39	31
45	53	30	33	47	32
42	41	29	53	43	32
38	50	35	29	47	41
55	44	23	32	45	40
38	43	27	32	51	49
44	49	22	40	41	44
40	35	30	44	45	46
35	41	41	36	38	39
43	36	47	31	50	33
40	45	30	49	39	37
49	47	54	25	40	25
40	42	37	39	39	43
39	34	26	48	46	47
41	37	33	42	41	46
53	31	32	43	42	49
46	42	28	27	39	58
40	31	53	47	39	30
48	43	25	38	44	42
45	42	37	37	39	40
<u>Lower Group</u>					
40	41	28	32	46	53
48	35	28	47	28	54
44	37	36	39	30	54
38	32	32	47	37	54
46	49	25	39	44	37



TABLE XVII

TEST SCORES OF ADMINISTRATORS ON THE THURSTONE TEMPERAMENT SCHEDULE WHO RATED IN THE "UPPER GROUP," "MIDDLE GROUP," AND IN THE "LOWER GROUP" ON SECTION I OF THE RATING GUIDE

Active	Vigorous	Im- pulsive	Dominant	Stable	Sociable	Re- flective
<u>Upper Group</u>						
15	16	12	17	14	18	6
13	13	12	15	18	15	6
9	14	9	7	13	12	9
9	12	14	18	8	16	11
12	12	14	15	17	15	8
13	9	6	0	14	7	10
12	14	4	12	6	9	10
9	5	5	12	14	14	10
10	6	14	19	19	19	13
15	6	10	13	9	11	7
<u>Middle Group</u>						
14	17	7	8	11	4	18
12	14	10	6	12	11	11
8	16	15	16	19	8	5
12	12	12	12	9	11	11
3	16	8	14	17	11	9
18	9	10	17	14	18	8
16	11	9	10	12	10	8
17	13	10	14	8	13	10
8	9	12	13	17	18	14
10	15	10	14	11	16	11
18	11	11	20	12	17	11
14	18	19	19	19	17	10
9	7	10	15	12	18	9
6	14	11	14	14	16	9
13	8	9	18	9	16	8
15	14	11	17	11	13	11
6	12	12	17	11	15	7
11	14	7	16	19	18	12
15	18	12	11	14	15	6
5	15	12	8	12	8	8
<u>Lower Group</u>						
11	16	8	13	13	9	13
14	15	14	19	15	18	9
4	8	9	7	19	13	12
5	16	7	15	16	18	5
14	12	8	16	10	18	5

TABLE XVIII

TEST SCORES OF ADMINISTRATORS ON THE EDWARDS PERSONAL PREFERENCE  
SCHEDULE WHO RATED IN THE "UPPER GROUP," "MIDDLE GROUP," AND  
IN THE "LOWER GROUP" ON SECTION I OF THE RATING GUIDE

Achievement	Deference	Order	Exhibition	Autonomy
<u>Upper Group</u>				
12	14	7	11	10
16	13	6	18	15
19	13	13	11	13
24	18	12	16	5
10	18	16	10	8
15	18	10	7	20
25	14	15	15	13
16	16	9	21	10
24	16	10	13	9
20	10	3	16	14
<u>Middle Group</u>				
19	17	18	9	12
16	17	10	11	8
16	12	10	12	13
9	17	13	8	10
13	16	13	13	16
9	10	11	11	9
14	17	10	17	7
14	14	18	21	5
12	12	12	9	13
23	22	24	16	9
10	10	10	10	10
16	13	6	9	13
6	17	5	8	17
7	13	12	10	7
16	15	14	15	11
10	14	13	9	10
14	12	13	19	12
14	20	20	4	12
20	10	9	16	11
14	16	23	12	11
<u>Lower Group</u>				
17	16	15	9	18
12	20	17	13	6
18	20	18	9	4
11	18	19	12	5
13	13	16	13	7

TABLE XVIII (continued)

TEST SCORES OF ADMINISTRATORS ON THE EDWARDS PERSONAL PREFERENCE SCHEDULE WHO RATED IN THE "UPPER GROUP," "MIDDLE GROUP," AND IN THE "LOWER GROUP" ON SECTION I OF THE RATING GUIDE

Affiliation	Intracception	Succorance	Dominance	Abasement
<u>Upper Group</u>				
20	18	11	19	9
20	17	5	24	9
12	14	18	7	16
20	21	8	16	11
15	22	19	15	14
11	14	20	9	8
14	16	3	25	10
19	13	12	19	7
17	19	2	20	6
18	20	15	15	11
<u>Middle Group</u>				
12	19	8	16	11
14	15	18	14	14
11	18	12	16	9
16	18	13	21	11
13	10	9	18	12
19	14	18	17	14
17	18	16	20	15
18	24	7	21	7
14	17	15	24	14
14	14	8	13	8
20	24	10	24	11
12	22	12	14	12
16	23	4	21	11
25	22	3	10	17
10	21	14	16	9
15	23	14	12	15
13	19	8	23	13
12	28	11	14	13
11	12	11	18	10
9	16	17	9	20
<u>Lower Group</u>				
8	23	11	20	12
16	26	3	17	11
12	25	11	14	18
18	22	8	12	15
13	23	5	15	13

TABLE XVIII (continued)

TEST SCORES OF ADMINISTRATORS ON THE EDWARDS PERSONAL PREFERENCE  
SCHEDULE WHO RATED IN THE "UPPER GROUP," "MIDDLE GROUP," AND  
IN THE "LOWER GROUP" ON SECTION I OF THE RATING GUIDE

Nurturance	Change	Endurance	Heterosexuality	Aggression
<u>Upper Group</u>				
15	19	11	24	10
11	11	15	17	10
15	14	15	18	12
9	15	20	10	5
23	14	17	0	10
23	10	5	22	18
12	6	21	6	15
11	24	15	12	6
11	18	14	21	10
18	15	7	17	11
<u>Middle Group</u>				
8	21	23	4	14
14	11	9	24	15
8	17	8	27	20
15	16	17	10	16
18	16	14	13	16
24	9	17	17	11
16	9	6	13	17
16	21	9	6	9
13	14	18	14	11
14	16	19	2	7
25	11	11	1	24
2	23	15	23	18
16	15	14	22	15
24	17	16	24	3
15	21	13	11	9
14	10	16	15	20
13	10	11	17	12
13	13	21	6	9
16	19	14	13	10
14	11	14	14	10
<u>Lower Group</u>				
14	12	20	0	15
17	14	24	6	8
19	14	21	2	5
21	13	17	12	7
12	17	16	12	12

TABLE XIX

TEST SCORES OF ADMINISTRATORS ON SELECTED PSYCHOLOGICAL TESTS  
WHO RATED IN THE "UPPER GROUP," "MIDDLE GROUP," AND IN THE  
"LOWER GROUP" ON SECTION II OF THE RATING GUIDE

Cooperative English (Mech.)	English (Exp.)	Watson-Glaser Critical Thinking App.	Miller Analogies	Minn. T. Attitude
<u>Upper Group</u>				
113	48	73	76	-22
87	45	65	28	85
109	38	81	59	104
96	26	58	32	96
73	30	52	14	-10
58	30	74	27	54
90	41	67	28	61
44	31	60	25	66
117	36	59	28	53
103	45	77	30	94
136	53	83	43	107
86	25	59	20	3
69	38	73	21	99
145	56	84	59	56
120	46	76	30	86
108	38	65	28	42
148	52	91	49	95
<u>Middle Group</u>				
118	23	77	33	96
95	38	56	19	- 2
105	40	65	35	81
53	29	57	23	31
79	27	56	31	82
128	52	86	43	97
89	33	65	24	67
87	25	74	47	94
82	26	67	23	83
138	45	70	54	111
128	47	57	15	87
<u>Lower Group</u>				
55	35	58	19	24
98	35	65	45	- 2
137	31	61	32	95
65	23	68	20	93
118	44	75	27	42
106	42	85	37	109
64	35	66	33	65

TABLE XX

TEST SCORES OF ADMINISTRATORS ON THE ALLPORT-VERNON-LINDZEY  
STUDY OF VALUES WHO RATED IN THE "UPPER GROUP," "MIDDLE  
GROUP," AND IN THE "LOWER GROUP" ON SECTION-II  
OF THE RATING GUIDE

Theoretical	Economic	Aesthetic	Social	Political	Religious
<u>Upper Group</u>					
66	43	40	21	39	31
40	39	40	36	43	41
47	57	50	40	32	27
42	41	29	53	43	32
38	50	35	29	47	41
55	44	23	32	45	40
50	50	26	39	32	43
48	44	31	32	44	41
46	44	27	48	34	41
39	34	26	48	46	47
38	50	26	41	45	40
46	42	28	27	39	58
48	43	25	38	44	42
48	43	35	40	38	36
45	45	28	40	43	39
45	42	37	37	39	40
36	44	25	37	50	48
<u>Middle Group</u>					
45	53	30	33	47	32
44	49	22	40	41	44
40	35	30	44	45	46
35	41	41	36	38	39
43	36	47	31	50	33
40	45	30	49	39	37
40	42	37	39	39	43
41	37	33	42	41	46
53	31	32	43	32	49
24	33	54	33	55	41
40	31	53	47	39	30
<u>Lower Group</u>					
38	43	27	32	51	49
40	41	28	32	46	53
49	47	54	25	40	25
48	35	28	47	28	54
44	37	36	39	30	54
38	32	32	47	37	54
46	49	25	39	44	37

TABLE XXI

TEST SCORES OF ADMINISTRATORS ON THE THURSTONE TEMPERAMENT SCHEDULE WHO RATED IN THE "UPPER GROUP," "MIDDLE GROUP," AND IN THE "LOWER GROUP" ON SECTION II OF THE RATING GUIDE

Active	Vigorous	Im- pulsive	Dominant	Stable	Sociable	Re- flective
<u>Upper Group</u>						
14	17	7	8	11	4	18
15	16	12	17	14	18	6
13	13	12	15	18	15	6
8	16	15	16	19	8	5
12	12	12	12	9	11	11
3	16	8	14	17	11	9
9	14	9	7	13	12	9
9	12	14	18	8	16	11
12	12	14	15	17	15	8
6	14	11	14	14	16	9
12	14	4	12	6	9	10
6	12	12	17	11	15	7
15	18	12	11	14	15	6
9	5	5	12	14	14	10
10	8	14	19	19	19	13
5	15	12	8	12	8	8
15	6	10	13	9	11	7
<u>Middle Group</u>						
12	14	10	6	12	11	11
16	11	9	10	12	10	8
17	13	10	14	8	13	10
8	9	12	13	17	18	14
10	15	10	14	11	16	11
18	11	11	20	12	17	11
9	7	10	15	12	18	9
13	8	9	18	9	16	8
15	14	11	17	11	13	11
13	9	6	0	14	7	10
11	14	7	16	19	18	12
<u>Lower Group</u>						
18	9	10	17	14	18	8
11	16	8	13	13	9	13
14	18	19	19	19	17	10
14	15	14	19	15	18	9
4	8	9	7	19	13	12
5	16	7	15	16	18	5
14	12	8	16	10	18	5



TABLE XXII

TEST SCORES OF ADMINISTRATORS ON THE EDWARDS PERSONAL PREFERENCE SCHEDULE WHO RATED IN THE "UPPER GROUP," "MIDDLE GROUP," AND IN THE "LOWER GROUP" ON SECTION II OF THE RATING GUIDE

Achievement	Deference	Order	Exhibition	Autonomy
<u>Upper Group</u>				
19	17	18	9	12
12	14	7	11	10
16	13	6	18	15
16	12	10	12	13
9	17	13	8	10
13	16	13	13	16
19	13	13	11	13
24	18	12	16	5
10	18	16	10	8
7	13	12	10	7
25	14	15	15	13
14	12	13	19	12
20	10	9	16	11
16	16	9	21	10
24	16	10	13	9
14	16	23	12	11
20	10	3	16	14
<u>Middle Group</u>				
16	17	10	11	8
14	17	10	17	7
14	14	18	21	5
12	12	12	9	13
23	22	24	16	9
10	10	10	10	10
6	17	5	8	17
16	15	14	15	11
10	14	13	9	10
15	18	10	7	20
14	20	20	4	12
<u>Lower Group</u>				
9	10	11	11	9
17	16	15	9	18
16	13	6	9	13
12	20	17	13	6
18	20	18	9	4
11	18	19	12	5
13	13	16	13	7

TABLE XXII (continued)

TEST SCORES OF ADMINISTRATORS ON THE EDWARDS PERSONAL PREFERENCE SCHEDULE WHO RATED IN THE "UPPER GROUP," "MIDDLE GROUP," AND IN THE "LOWER GROUP" ON SECTION II OF THE RATING GUIDE

Affiliation	Intracception	Succorance	Dominance	Abasement
<u>Upper Group</u>				
12	19	8	16	11
20	18	11	19	9
20	17	5	24	9
11	18	12	16	9
16	18	13	21	11
13	10	9	18	12
12	14	18	7	16
20	21	8	16	11
15	22	19	15	14
25	22	3	10	17
14	16	3	25	10
13	19	8	23	13
11	12	11	18	10
19	13	12	19	7
17	19	2	20	6
9	16	17	9	20
18	20	15	15	11
<u>Middle Group</u>				
14	15	18	14	14
17	18	16	20	15
18	24	7	21	7
14	17	15	24	14
14	14	8	13	8
20	24	10	24	11
16	23	4	21	11
10	21	14	16	9
15	23	14	12	15
11	14	20	9	8
12	28	11	14	13
<u>Lower Group</u>				
19	14	18	17	14
8	23	11	20	12
12	22	12	14	12
16	26	3	17	11
12	25	11	14	18
18	22	8	12	15
13	23	5	15	13

TABLE XXII (continued)

TEST SCORES OF ADMINISTRATORS ON THE EDWARDS PERSONAL PREFERENCE SCHEDULE WHO RATED IN THE "UPPER GROUP," "MIDDLE GROUP," AND IN THE "LOWER GROUP" ON SECTION II OF THE RATING GUIDE

Nurturance	Change	Endurance	Heterosexuality	Aggression
<u>Upper Group</u>				
8	21	23	4	14
15	19	11	24	10
11	11	15	17	10
8	17	8	27	20
15	16	17	10	16
18	16	14	13	16
15	14	15	18	12
9	15	20	10	5
23	14	17	0	10
24	17	16	24	3
12	6	21	6	15
13	10	11	17	12
16	19	14	13	10
11	24	15	12	6
11	18	14	21	10
14	11	14	14	10
18	15	7	17	11
<u>Middle Group</u>				
14	11	9	24	15
16	9	6	13	17
16	21	9	6	9
13	14	18	14	11
14	16	19	2	7
25	11	11	1	24
16	15	14	22	15
15	21	13	11	9
14	10	16	15	20
23	10	5	22	18
13	13	21	6	9
<u>Lower Group</u>				
24	9	17	17	11
14	12	20	0	15
2	23	15	23	18
17	14	24	6	8
19	14	21	2	5
21	13	17	12	7
12	17	16	12	12

TABLE XXIII

TEST SCORES OF ADMINISTRATORS ON SELECTED PSYCHOLOGICAL TESTS  
WHO RATED IN THE "UPPER GROUP" AND IN THE "LOWER GROUP"  
ON SECTION III OF THE RATING GUIDE

Cooperative English (Mech.)	English (Exp.)	Watson-Glaser Critical Thinking App.	Miller Analogies	Minn. T. Attitude
<u>Upper Group</u>				
113	48	73	76	-22
87	45	65	28	85
118	23	77	33	96
109	38	81	59	104
73	30	52	14	-10
58	30	74	27	54
90	41	67	28	61
55	35	58	19	24
44	31	60	25	66
117	36	59	28	53
95	38	56	19	- 2
105	40	65	35	81
53	29	57	23	31
79	27	56	31	82
128	52	86	43	97
137	31	61	32	95
89	33	65	24	67
103	45	77	30	94
87	25	74	47	94
82	26	67	23	83
138	45	70	54	111
136	53	83	43	107
65	23	68	20	93
86	25	59	20	3
69	38	73	21	99
145	56	84	59	56
120	46	76	30	86
108	38	65	28	42
148	52	91	49	95
64	35	66	33	65
<u>Lower Group</u>				
96	26	58	32	96
98	35	65	45	- 2
118	44	75	27	42
128	47	57	15	87
106	42	85	37	109

TABLE XXIV

TEST SCORES OF ADMINISTRATORS ON THE ALLPORT-VERNON-LINDZEY  
STUDY OF VALUES WHO RATED IN THE "UPPER GROUP"  
AND IN THE "LOWER GROUP" ON SECTION  
III OF THE RATING GUIDE

Theoretical	Economic	Aesthetic	Social	Political	Religious
<u>Upper Group</u>					
66	43	40	21	39	31
40	39	40	36	43	41
45	53	30	33	47	32
47	57	50	40	32	27
38	50	35	29	47	41
55	44	23	32	45	40
50	50	26	39	32	43
38	43	27	32	51	49
48	44	31	32	44	41
46	44	27	48	34	41
44	49	22	40	41	44
40	35	30	44	45	46
35	41	41	36	38	39
43	36	47	31	50	33
40	45	30	49	39	37
49	47	54	25	40	25
40	42	37	39	39	43
39	34	26	48	46	47
41	37	33	42	41	46
53	31	32	43	32	49
24	33	54	33	55	41
38	50	26	41	45	40
48	35	28	47	28	54
46	42	28	27	39	58
48	43	25	38	44	42
48	43	35	40	38	36
45	45	28	40	43	39
45	42	37	37	39	40
36	44	25	37	50	48
46	49	25	39	44	37
<u>Lower Group</u>					
42	41	29	53	43	32
40	41	28	32	46	53
44	37	36	39	30	54
40	31	53	47	39	30
38	32	32	47	37	54

TABLE XXV

TEST SCORES OF ADMINISTRATORS ON THE THURSTONE TEMPERAMENT  
SCHEDULE WHO RATED IN THE "UPPER GROUP" AND IN THE  
"LOWER GROUP" ON SECTION III OF THE RATING GUIDE

Active	Vigorous	Im- pulsive	Dominant	Stable	Sociable	Re- flective
<u>Upper Group</u>						
14	17	7	8	11	4	18
15	16	12	17	14	18	6
12	14	10	6	12	11	11
13	13	12	15	18	15	6
12	12	12	12	9	11	11
3	16	8	14	17	11	9
9	14	9	7	13	12	9
18	9	10	17	14	18	8
9	12	14	18	8	16	11
12	12	14	15	17	15	8
16	11	9	10	12	10	8
17	13	10	14	8	13	10
8	9	12	13	17	18	14
10	15	10	14	11	16	11
18	11	11	20	12	17	11
14	18	19	19	19	17	10
9	7	10	15	12	18	9
6	14	11	14	14	16	9
13	8	9	18	9	16	8
15	14	11	17	11	13	11
13	9	6	0	14	7	10
12	14	4	12	6	9	10
14	15	14	19	15	18	9
6	12	12	17	11	15	7
15	18	12	11	14	15	6
9	5	5	12	14	14	10
10	8	14	19	19	19	13
5	15	12	8	12	8	8
15	6	10	13	9	11	7
14	12	8	16	10	18	5
<u>Lower Group</u>						
8	16	15	16	19	8	5
11	16	8	13	13	9	13
4	8	9	7	19	13	12
11	14	7	16	19	18	12
5	16	7	15	16	18	5

TABLE XXVI

TEST SCORES OF ADMINISTRATORS ON THE EDWARDS PERSONAL PREFERENCE  
SCHEDULE WHO RATED IN THE "UPPER GROUP" AND IN THE  
"LOWER GROUP" ON SECTION III OF THE RATING GUIDE

Achievement	Deference	Order	Exhibition	Autonomy
<u>Upper Group</u>				
19	17	18	9	12
12	14	7	11	10
16	17	10	11	8
16	13	6	18	15
9	17	13	8	10
13	16	13	13	16
19	13	13	11	13
9	10	11	11	9
24	18	12	16	5
10	18	16	10	8
14	17	10	17	7
14	14	18	21	5
12	12	12	9	13
23	22	24	16	9
10	10	10	10	10
16	13	6	9	13
6	17	5	8	17
7	13	12	10	7
16	15	14	15	11
10	14	13	9	10
15	18	10	7	20
25	14	15	15	13
12	20	17	13	6
14	12	13	19	12
20	10	9	16	11
16	16	9	21	10
24	16	10	13	9
14	16	23	12	11
20	10	3	16	14
13	13	16	13	7
<u>Lower Group</u>				
16	12	10	12	13
17	16	15	9	18
18	20	18	9	4
14	20	20	4	12
11	18	19	12	5



TABLE XXVI (continued)

TEST SCORES OF ADMINISTRATORS ON THE EDWARDS PERSONAL PREFERENCE  
SCHEDULE WHO RATED IN THE "UPPER GROUP" AND IN THE  
"LOWER GROUP" ON SECTION III OF THE RATING GUIDE

Affiliation	Intracception	Succorance	Dominance	Abasement
<u>Upper Group</u>				
12	19	8	16	11
20	18	11	19	9
14	15	18	14	14
20	17	5	24	9
16	18	13	21	11
13	10	9	18	12
12	14	18	7	16
19	14	18	17	14
20	21	8	16	11
15	22	19	15	14
17	18	16	20	15
18	24	7	21	7
14	17	15	24	14
14	14	8	13	8
20	24	10	24	11
12	22	12	14	12
16	23	4	21	11
25	22	3	10	17
10	21	14	16	9
15	23	14	12	15
11	14	20	9	8
14	16	3	25	10
16	26	3	17	11
13	19	8	23	13
11	12	11	18	10
19	13	12	19	7
17	19	2	20	6
9	16	17	9	20
18	20	15	15	11
13	23	5	15	13
<u>Lower Group</u>				
11	18	12	16	9
8	23	11	20	12
12	25	11	14	18
12	28	11	14	13
18	22	8	12	15

TABLE XXVI (continued)

TEST SCORES OF ADMINISTRATORS ON THE EDWARDS PERSONAL PREFERENCE  
SCHEDULE WHO RATED IN THE "UPPER GROUP" AND IN THE  
"LOWER GROUP" ON SECTION III OF THE RATING GUIDE

Nurturance	Change	Endurance	Heterosexuality	Aggression
<u>Upper Group</u>				
8	21	23	4	14
15	19	11	24	10
14	11	9	24	15
11	11	15	17	10
15	16	17	10	16
18	16	14	13	16
15	14	15	18	12
24	9	17	17	11
9	15	20	10	5
23	14	17	0	10
16	9	6	13	17
16	21	9	6	9
13	14	18	14	11
14	16	19	2	7
25	11	11	1	24
2	23	15	23	18
16	15	14	22	15
24	17	16	24	3
15	21	13	11	9
14	10	16	15	20
23	10	5	22	18
12	6	21	6	15
17	14	24	6	8
13	10	11	17	12
16	19	14	13	10
11	24	15	12	6
11	18	14	21	10
14	11	14	14	10
18	15	7	17	11
12	17	16	12	12
<u>Lower Group</u>				
8	17	8	27	20
14	12	20	0	15
19	14	21	2	5
13	13	21	6	9
21	13	17	12	7

TABLE XXVII

TEST SCORES OF ADMINISTRATORS ON SELECTED PSYCHOLOGICAL TESTS  
WHO RATED IN THE "UPPER GROUP" AND IN THE "LOWER GROUP"  
ON SECTION IV OF THE RATING GUIDE

Cooperative (Mech.)	English (Exp.)	Watson-Glaser Critical Thinking App.	Miller Analogies	Minn. T. Attitude
<u>Upper Group</u>				
113	48	73	76	-22
87	45	65	28	85
118	23	77	33	96
109	38	81	59	104
73	30	52	14	-10
58	30	74	27	54
44	31	60	25	66
117	36	59	28	53
98	35	65	45	- 2
95	38	56	19	- 2
105	40	65	35	81
53	29	57	23	31
128	52	86	43	97
137	31	61	32	95
103	45	77	30	94
87	25	74	47	94
82	26	67	23	83
138	45	70	54	111
136	53	83	43	107
118	44	75	27	42
86	25	59	20	3
128	47	57	15	87
69	38	73	21	99
145	56	84	59	56
120	46	76	30	86
108	38	65	28	42
148	52	91	49	95
<u>Lower Group</u>				
96	26	58	32	96
90	41	67	28	61
55	35	58	19	24
79	27	56	31	82
89	33	65	24	67
65	23	68	20	93
106	42	85	37	109
64	35	66	33	65

TABLE XXVIII

TEST SCORES OF ADMINISTRATORS ON THE ALLPORT-VERNON-LINDZEY  
STUDY OF VALUES WHO RATED IN THE "UPPER GROUP"  
AND IN THE "LOWER GROUP" ON SECTION  
IV OF THE RATING GUIDE

Theoretical	Economic	Aesthetic	Social	Political	Religious
<u>Upper Group</u>					
66	43	40	21	39	31
40	39	40	36	43	41
45	53	30	33	47	32
47	57	50	40	32	27
38	50	35	29	47	41
55	44	23	32	45	40
48	44	31	32	44	41
46	44	27	48	34	41
40	41	28	32	46	53
44	49	22	40	41	44
40	35	30	44	45	46
35	41	41	36	38	39
40	45	30	49	39	37
49	47	54	25	40	25
39	34	26	48	46	47
41	37	33	42	41	46
53	31	32	43	32	49
24	33	54	33	55	41
38	50	26	41	45	40
44	37	36	39	30	54
46	42	28	27	39	58
40	31	53	47	39	30
48	43	25	38	44	42
48	43	35	40	38	36
45	45	28	40	43	39
45	42	37	37	39	40
36	44	25	37	50	48
<u>Lower Group</u>					
42	41	29	53	43	32
50	50	26	39	32	43
38	43	27	32	51	49
43	36	47	31	50	33
40	42	37	39	39	43
48	35	28	47	28	54
38	32	32	47	37	54
46	49	25	39	44	37

TABLE XXIX

TEST SCORES OF ADMINISTRATORS ON THE THURSTONE TEMPERAMENT  
SCHEDULE WHO RATED IN THE "UPPER GROUP" AND IN THE  
"LOWER GROUP" ON SECTION IV OF THE RATING GUIDE

Active	Vigorous	Im- pulsive	Dominant	Stable	Sociable	Re- flective
<u>Upper Group</u>						
14	17	7	8	11	4	18
15	16	12	17	14	10	6
12	14	10	6	12	11	11
13	13	12	15	18	15	6
12	12	12	12	9	11	11
3	16	8	14	17	11	9
9	12	14	18	8	16	11
12	12	14	15	17	15	8
11	16	8	13	13	9	13
16	11	9	10	12	10	8
17	13	10	14	8	13	10
8	9	12	13	17	18	14
18	11	11	20	12	17	11
14	18	19	19	19	17	10
6	14	11	14	14	16	9
13	8	9	18	9	16	8
15	14	11	17	11	13	11
13	9	6	0	14	7	10
12	14	4	12	6	9	10
4	8	9	7	19	13	12
6	12	12	17	11	15	7
11	14	7	16	19	18	12
15	18	12	11	14	15	6
9	5	5	12	14	14	10
10	8	14	19	19	19	13
5	15	12	8	12	8	8
15	6	10	13	9	11	7
<u>Lower Group</u>						
8	16	15	16	19	8	5
9	14	9	7	13	12	9
18	9	10	17	14	18	8
10	15	10	14	11	16	11
9	7	10	15	12	18	9
14	15	14	19	15	18	9
5	16	7	15	16	18	5
14	12	8	16	10	18	5

TABLE XXX

TEST SCORES OF ADMINISTRATORS ON THE EDWARDS PERSONAL PREFERENCE  
SCHEDULE WHO RATED IN THE "UPPER GROUP" AND IN THE  
"LOWER GROUP" ON SECTION IV OF THE RATING GUIDE

Achievement	Deference	Order	Exhibition	Autonomy
<u>Upper Group</u>				
19	17	18	9	12
12	14	7	11	10
16	17	10	11	8
16	13	6	18	15
9	17	13	8	10
13	16	13	13	16
24	18	12	16	5
10	18	16	10	8
17	16	15	9	18
14	17	10	17	7
14	14	18	21	5
12	12	12	9	13
10	10	10	10	10
16	13	6	9	13
7	13	12	10	7
16	15	14	15	11
10	14	13	9	10
15	18	10	7	20
25	10	15	15	13
18	20	18	9	4
14	12	13	19	12
14	20	20	4	12
20	10	9	16	11
16	16	9	21	10
24	16	10	13	9
14	16	23	12	11
20	10	3	16	14
<u>Lower Group</u>				
16	12	10	12	13
19	13	13	11	13
9	10	11	11	9
23	22	24	16	9
6	17	5	8	17
12	20	17	13	6
11	18	19	12	5
13	13	16	13	7

TABLE XXX (continued)

TEST SCORES OF ADMINISTRATORS ON THE EDWARDS PERSONAL PREFERENCE  
SCHEDULE WHO RATED IN THE "UPPER GROUP" AND IN THE  
"LOWER GROUP" ON SECTION IV OF THE RATING GUIDE

Affiliation	Intracception	Succorance	Dominance	Abasement
<u>Upper Group</u>				
12	19	8	16	11
20	18	11	19	9
14	15	18	14	14
20	17	5	24	9
16	18	13	21	11
13	10	9	18	12
20	21	8	16	11
15	22	19	15	14
8	23	11	20	12
17	18	16	20	15
18	24	7	21	7
14	17	15	24	14
20	24	10	24	11
12	22	12	14	12
25	22	3	10	17
10	21	14	16	9
15	23	14	12	15
11	14	20	9	8
14	16	3	25	10
12	25	11	14	18
13	19	8	23	13
12	28	11	14	13
11	12	11	18	10
19	13	12	19	7
17	19	2	20	6
9	16	17	9	20
18	20	15	15	11
<u>Lower Group</u>				
11	18	12	16	9
12	14	18	7	16
19	14	18	17	14
14	14	8	13	8
16	23	4	21	11
16	26	3	17	11
18	22	8	12	15
13	23	5	15	13



TABLE XXX (continued)

TEST SCORES OF ADMINISTRATORS ON THE EDWARDS PERSONAL PREFERENCE  
SCHEDULE WHO RATED IN THE "UPPER GROUP" AND IN THE  
"LOWER GROUP" ON SECTION IV OF THE RATING GUIDE

Nurturance	Change	Endurance	Heterosexuality	Aggression
<u>Upper Group</u>				
8	21	23	4	14
15	19	11	24	10
14	11	9	24	15
11	11	15	17	10
15	16	17	10	16
18	16	14	13	16
9	15	20	10	5
23	14	17	0	10
14	12	20	0	15
16	9	6	13	17
16	21	9	6	9
13	14	18	14	11
25	11	11	1	24
2	23	15	23	18
24	17	16	24	3
15	21	13	11	9
14	10	16	15	20
23	10	5	22	18
12	6	21	6	15
19	14	21	2	5
13	10	11	17	12
13	13	21	6	9
16	19	14	13	10
11	24	15	12	6
11	18	14	21	10
14	11	14	14	10
18	15	7	17	11
<u>Lower Group</u>				
8	17	8	27	20
15	14	15	18	12
24	9	17	17	11
14	16	19	2	7
16	15	14	22	15
17	14	24	6	8
21	13	17	12	7
12	17	16	12	12

TABLE XXXI

TEST SCORES OF ADMINISTRATORS ON SELECTED PSYCHOLOGICAL TESTS  
WHO RATED IN THE "UPPER GROUP," "MIDDLE GROUP," AND IN THE  
"LOWER GROUP" ON SECTION V OF THE RATING GUIDE

Cooperative (Mech.)	English (Exp.)	Watson-Glaser Critical Thinking App.	Miller Analogies	Minn. T. Attitude
<u>Upper Group</u>				
113	48	73	76	-22
87	45	65	28	85
118	23	77	33	96
109	38	81	59	104
73	30	52	14	-10
90	41	67	28	61
117	36	59	28	53
95	38	56	19	- 2
53	29	57	23	31
103	45	77	30	94
87	25	74	47	94
82	26	67	23	83
138	45	70	54	111
136	53	83	43	107
86	25	59	20	3
69	38	73	21	99
145	56	84	59	56
120	46	76	30	86
108	38	65	28	42
148	52	91	49	95
<u>Middle Group</u>				
44	31	60	25	66
105	40	65	35	81
79	27	56	31	82
89	33	65	24	67
118	44	75	27	42
128	47	57	15	87
64	35	66	33	65
<u>Lower Group</u>				
96	26	58	32	96
58	30	74	27	54
55	35	58	19	24
98	35	65	45	- 2
128	52	86	43	97
137	31	61	32	95
65	23	68	20	93
106	42	85	37	109

TABLE XXXII

TEST SCORES OF ADMINISTRATORS ON THE ALLPORT-VERNON-LINDZEY  
STUDY OF VALUES WHO RATED IN THE "UPPER GROUP," "MIDDLE  
GROUP," AND IN THE "LOWER GROUP" ON SECTION V  
OF THE RATING GUIDE

Theoretical	Economic	Aesthetic	Social	Political	Religious
<u>Upper Group</u>					
66	43	40	21	39	31
40	39	40	36	43	41
45	53	30	33	47	32
47	57	50	40	32	27
38	50	35	29	47	41
50	50	26	39	32	43
46	44	27	48	34	41
44	49	22	40	41	44
35	41	41	36	38	39
39	34	26	48	46	47
41	37	33	42	41	46
53	31	32	43	32	49
24	33	54	33	55	41
38	50	26	41	45	40
46	42	28	27	39	58
48	43	25	38	44	42
48	43	35	40	38	36
45	45	28	40	43	39
45	42	37	37	39	40
36	44	25	37	50	48
<u>Middle Group</u>					
48	44	31	32	44	41
40	35	30	44	45	46
43	36	47	31	50	33
40	42	37	39	39	43
44	37	36	39	30	54
40	31	53	47	39	30
46	49	25	39	44	37
<u>Lower Group</u>					
42	41	29	53	43	32
55	44	23	32	45	40
38	43	27	32	51	49
40	41	28	32	46	53
40	45	30	49	39	37
49	47	54	25	40	25
48	35	28	47	28	54
38	32	32	47	37	54

TABLE XXXIII

TEST SCORES OF ADMINISTRATORS ON THE THURSTONE TEMPERAMENT  
SCHEDULE WHO RATED IN THE "UPPER GROUP," "MIDDLE GROUP,"  
AND IN THE "LOWER GROUP" ON SECTION V OF THE RATING GUIDE

Active	Vigorous	In- pulsive	Dominant	Stable	Sociable	Re- flective
<u>Upper Group</u>						
14	17	7	8	11	4	18
15	16	12	17	14	18	6
12	14	10	6	12	11	11
13	13	12	15	18	15	6
12	12	12	12	9	11	11
9	14	9	7	13	12	9
12	12	14	15	17	15	8
16	11	9	10	12	10	8
8	9	12	13	17	18	14
6	14	11	14	14	16	9
13	8	9	18	9	16	8
15	14	11	17	11	13	11
13	9	6	0	14	7	10
12	14	4	12	6	9	10
6	12	12	17	11	15	7
15	18	12	11	14	15	6
9	5	5	12	14	14	10
10	8	14	19	19	19	13
5	15	12	8	12	8	8
15	6	10	13	9	11	7
<u>Middle Group</u>						
9	12	14	18	8	16	11
17	13	10	14	8	13	10
10	15	10	14	11	16	11
9	7	10	15	12	18	9
4	8	9	7	19	13	12
11	14	7	16	19	18	12
14	12	8	16	10	18	5
<u>Lower Group</u>						
8	16	15	16	19	8	5
3	16	8	14	17	11	9
18	9	10	17	14	18	8
11	16	8	13	13	9	13
18	11	11	20	12	17	11
14	18	19	19	19	17	10
14	15	14	19	15	18	9
5	16	7	15	16	18	5

TABLE XXXIV

TEST SCORES OF ADMINISTRATORS ON THE EDWARDS PERSONAL PREFERENCE  
SCHEDULE WHO RATED IN THE "UPPER GROUP," "MIDDLE GROUP," AND  
IN THE "LOWER GROUP" ON SECTION V OF THE RATING GUIDE

Achievement	Deference	Order	Exhibition	Autonomy
<u>Upper Group</u>				
19	17	18	9	12
12	14	7	11	10
16	17	10	11	8
16	13	6	18	15
9	17	13	8	10
19	13	13	11	13
10	18	16	10	8
14	17	10	17	7
12	12	12	9	13
7	13	12	10	7
16	15	14	15	11
10	14	13	9	10
15	18	10	7	20
25	14	15	15	13
14	12	13	19	12
20	10	9	16	11
16	16	9	21	10
24	16	10	13	9
14	16	23	12	11
20	10	3	16	14
<u>Middle Group</u>				
24	18	12	16	5
14	14	18	21	5
23	22	24	16	9
6	17	5	8	17
18	20	18	9	4
14	20	20	4	12
13	13	16	13	7
<u>Lower Group</u>				
16	12	10	12	13
13	16	13	13	16
9	10	11	11	9
17	16	15	9	18
10	10	10	10	10
16	13	6	9	13
12	20	17	13	6
11	18	19	12	5

TABLE XXXIV (continued)

TEST SCORES OF ADMINISTRATORS ON THE EDWARDS PERSONAL PREFERENCE SCHEDULE WHO RATED IN THE "UPPER GROUP," "MIDDLE GROUP," AND IN THE "LOWER GROUP" ON SECTION V OF THE RATING GUIDE.

Affiliation	Intracception	Succorance	Dominance	Abasement
<u>Upper Group</u>				
12	19	8	16	11
20	18	11	19	9
14	15	18	14	14
20	17	5	24	9
16	18	13	21	11
12	14	18	7	16
15	22	19	15	14
17	18	16	20	15
14	17	15	24	14
25	22	3	10	17
10	21	14	16	9
15	23	14	12	15
11	14	20	9	8
14	16	3	25	10
13	19	8	23	13
11	12	11	18	10
19	13	12	19	7
17	19	2	20	6
9	16	17	9	20
18	20	15	15	11
<u>Middle Group</u>				
20	21	8	16	11
18	24	7	21	7
14	14	8	13	8
16	23	4	21	11
12	25	11	14	18
12	28	11	14	13
13	23	5	15	13
<u>Lower Group</u>				
11	18	12	16	9
13	10	9	18	12
19	14	18	17	14
8	23	11	20	12
20	24	10	24	11
12	22	12	14	12
16	26	3	17	11
18	22	8	12	15

TABLE XXXIV (continued)

TEST SCORES OF ADMINISTRATORS ON THE EDWARDS PERSONAL PREFERENCE  
SCHEDULE WHO RATED IN THE "UPPER GROUP," "MIDDLE GROUP," AND  
IN THE "LOWER GROUP" ON SECTION V OF THE RATING GUIDE

Nurturance	Change	Endurance	Heterosexuality	Aggression
<u>Upper Group</u>				
8	21	23	4	14
15	19	11	24	10
14	11	9	24	15
11	11	15	17	10
15	16	17	10	16
15	14	15	18	12
23	14	17	0	10
16	9	6	13	17
13	14	18	14	11
24	17	16	24	3
15	21	13	11	9
14	10	16	15	20
23	10	5	22	18
12	6	21	6	15
13	10	11	17	12
16	19	14	13	10
11	24	15	12	6
11	18	14	21	10
14	11	14	14	10
18	15	7	17	11
<u>Middle Group</u>				
9	15	20	10	5
16	21	9	6	9
14	16	19	2	7
16	15	14	22	15
19	14	21	2	5
13	13	21	6	9
12	17	16	12	12
<u>Lower Group</u>				
8	17	8	27	20
18	16	14	13	16
24	9	17	17	11
14	12	20	0	15
25	11	11	1	24
2	23	15	23	18
17	14	24	6	8
21	13	17	12	7



TABLE XXXV

TEST SCORES OF ADMINISTRATORS ON SELECTED PSYCHOLOGICAL TESTS  
WHO RATED IN THE "UPPER GROUP," "MIDDLE GROUP," AND IN THE  
"LOWER GROUP" ON SECTION VI OF THE RATING GUIDE

Cooperative English (Mech.)	English (Exp.)	Watson-Glaser Critical Thinking App.	Miller Analogies	Minn. T. Attitude
<u>Upper Group</u>				
73	30	52	14	-10
90	41	67	28	61
44	31	60	25	66
117	36	59	28	53
128	52	86	43	97
87	25	74	47	94
82	26	67	23	83
136	53	83	43	107
86	25	59	20	3
145	56	84	59	56
120	46	76	30	86
148	52	91	49	95
<u>Middle Group</u>				
113	48	73	76	-22
87	45	65	28	85
118	23	77	33	96
109	38	81	59	104
96	26	58	32	96
58	30	74	27	54
98	35	65	45	- 2
95	38	56	19	- 2
105	40	65	35	81
53	29	57	23	31
89	33	65	24	67
103	45	77	30	94
138	45	70	54	111
69	38	73	21	99
106	42	85	37	109
108	38	65	28	42
<u>Lower Group</u>				
55	35	58	19	24
79	27	56	31	82
137	31	61	32	95
65	23	68	20	93
118	44	75	27	42
128	47	57	15	87
64	35	66	33	65

TABLE XXXVI

TEST SCORES OF ADMINISTRATORS ON THE ALLPORT-VERNON-LINDZEY  
STUDY OF VALUES WHO RATED IN THE "UPPER GROUP," "MIDDLE  
GROUP," AND IN THE "LOWER GROUP" ON SECTION VI...  
OF THE RATING GUIDE

Theoretical	Economic	Aesthetic	Social	Political	Religious
<u>Upper Group</u>					
38	50	35	29	47	41
50	50	26	39	32	43
48	44	31	32	44	41
46	44	27	48	34	41
40	45	30	49	39	37
41	37	33	42	41	46
53	31	32	43	32	49
38	50	26	41	45	40
46	42	28	27	39	58
48	43	35	40	38	36
45	45	28	40	43	39
36	44	25	37	50	48
<u>Middle Group</u>					
66	43	40	21	39	31
40	39	40	36	43	41
45	53	30	33	47	32
47	57	50	40	32	27
42	41	29	53	43	32
55	44	23	32	45	40
40	41	28	32	46	53
44	49	22	40	41	44
40	35	30	44	45	46
35	41	41	36	38	39
40	42	37	39	39	43
39	34	26	48	46	47
24	33	54	33	55	41
48	43	25	38	44	42
38	32	32	47	37	54
45	42	37	37	39	40
<u>Lower Group</u>					
38	43	27	32	51	49
43	36	47	31	50	33
49	47	54	25	40	25
48	35	28	47	28	54
44	37	36	39	30	54
40	31	53	47	39	30
46	49	25	39	44	37

TABLE XXXVII

TEST SCORES OF ADMINISTRATORS ON THE THURSTONE TEMPERAMENT SCHEDULE WHO RATED IN THE "UPPER GROUP," "MIDDLE GROUP," AND IN THE "LOWER GROUP" ON SECTION VI OF THE RATING GUIDE

Active	Vigorous	Im- pulsive	Dominant	Stable	Sociable	Re- flective
<u>Upper Group</u>						
12	12	12	12	9	11	11
9	14	9	7	13	12	9
9	12	14	18	8	16	11
12	12	14	15	17	15	8
18	11	11	20	12	17	11
13	8	9	18	9	16	8
15	14	11	17	11	13	11
12	14	4	12	6	9	10
6	12	12	17	11	15	7
9	5	5	12	14	14	10
10	8	14	19	19	19	13
15	6	10	13	9	11	7
<u>Middle Group</u>						
14	17	7	8	11	4	18
15	16	12	17	14	18	6
12	14	10	6	12	11	11
13	13	12	15	18	15	6
8	16	15	16	19	8	5
3	16	8	14	17	11	9
11	16	8	13	13	9	13
16	11	9	10	12	10	8
17	13	10	14	8	13	10
8	9	12	13	17	18	14
9	7	10	15	12	18	9
6	14	11	14	14	16	9
13	9	6	0	14	7	10
15	18	12	11	14	15	6
5	16	7	15	16	18	5
5	15	12	8	12	8	8
<u>Lower Group</u>						
18	9	10	17	14	18	8
10	15	10	14	11	16	11
14	18	19	19	19	17	10
14	15	14	19	15	18	9
4	8	9	7	19	13	12
11	14	7	16	19	18	12
14	12	8	16	10	18	5

TABLE XXXVIII

TEST SCORES OF ADMINISTRATORS ON THE EDWARDS PERSONAL PREFERENCE SCHEDULE WHO RATED IN THE "UPPER GROUP," "MIDDLE GROUP," AND IN THE "LOWER GROUP" ON SECTION VI OF THE RATING GUIDE

Achievement	Deference	Order	Exhibition	Autonomy
<u>Upper Group</u>				
9	17	13	8	10
19	13	13	11	13
24	18	12	16	5
10	18	16	10	8
10	10	10	10	10
16	15	14	15	11
10	14	13	9	10
25	14	15	15	13
14	12	13	19	12
16	16	9	21	10
24	16	10	13	9
20	10	3	16	14
<u>Middle Group</u>				
19	17	18	9	12
12	14	7	11	10
16	17	10	11	8
16	13	6	18	15
16	12	10	12	13
13	16	13	13	16
17	16	15	9	18
14	17	10	17	7
14	14	18	21	5
12	12	12	9	13
6	17	5	8	17
7	13	12	10	7
15	18	10	7	20
20	10	9	16	11
11	18	19	12	5
14	16	23	12	11
<u>Lower Group</u>				
9	10	11	11	9
23	22	24	16	9
16	13	6	9	13
12	20	17	13	6
18	20	18	9	4
14	20	20	4	12
13	13	16	13	7

TABLE XXXVIII (continued)

TEST SCORES OF ADMINISTRATORS ON THE EDWARDS PERSONAL PREFERENCE  
SCHEDULE WHO RATED IN THE "UPPER GROUP," "MIDDLE GROUP," AND  
IN THE "LOWER GROUP" ON SECTION VI OF THE RATING GUIDE

Affiliation	Intracception	Succorance	Dominance	Abasement
<u>Upper Group</u>				
16	18	13	21	11
12	14	18	7	16
20	21	8	16	11
15	22	19	15	14
20	24	10	24	11
10	21	14	16	9
15	23	14	12	15
14	16	3	25	10
13	19	8	23	13
19	13	12	19	7
17	19	2	20	6
18	20	15	15	11
<u>Middle Group</u>				
12	19	8	16	11
20	18	11	19	9
14	15	18	14	14
20	17	5	24	9
11	18	12	16	9
13	10	9	18	12
8	23	11	20	12
17	18	16	20	15
18	24	7	21	7
14	17	15	24	14
16	23	4	21	11
25	22	3	10	17
11	14	20	9	8
11	12	11	18	10
18	22	8	12	15
9	16	17	9	20
<u>Lower Group</u>				
19	14	18	17	14
14	14	8	13	8
12	22	12	14	12
16	26	3	17	11
12	25	11	14	18
12	28	11	14	13
13	23	5	15	13

TABLE XXXVIII (continued)

TEST SCORES OF ADMINISTRATORS ON THE EDWARDS PERSONAL PREFERENCE SCHEDULE WHO RATED IN THE "UPPER GROUP," "MIDDLE GROUP," AND IN THE "LOWER GROUP" ON SECTION VI OF THE RATING GUIDE

Nurturance	Change	Endurance	Heterosexuality	Aggression
<u>Upper Group</u>				
15	16	17	10	16
15	14	15	18	12
9	15	20	10	5
23	14	17	0	10
25	11	11	1	24
15	21	13	11	9
14	10	16	15	20
12	6	21	6	15
13	10	11	17	12
11	24	15	12	6
11	18	14	21	10
18	15	7	17	11
<u>Middle Group</u>				
8	21	23	4	14
15	19	11	24	10
14	11	9	24	15
11	11	15	17	10
8	17	8	27	20
18	16	14	13	16
14	12	20	0	15
16	9	6	13	17
16	21	9	6	9
13	14	18	14	11
16	15	14	22	15
24	17	16	24	3
23	10	5	22	18
16	19	14	13	10
21	13	17	12	7
14	11	14	14	10
<u>Lower Group</u>				
24	9	17	17	11
14	16	19	2	7
2	23	15	23	18
17	14	24	6	8
19	14	21	2	5
13	13	21	6	9
12	17	16	12	12

TABLE XXXIX

TEST SCORES OF ADMINISTRATORS ON SELECTED PSYCHOLOGICAL TESTS  
WHO RATED IN THE "UPPER GROUP," "MIDDLE GROUP," AND IN THE  
"LOWER GROUP" ON THE TOTAL RATING GUIDE

Cooperative (Mech.)	English (Exp.)	Watson-Glaser Critical Thinking App.	Miller Analogies	Minn. T. Attitude
<u>Upper Group</u>				
113	48	73	76	-22
87	45	65	28	85
109	38	81	59	104
73	30	52	14	-10
90	41	67	28	61
44	31	60	25	66
117	36	59	28	53
103	45	77	30	94
82	26	67	23	83
136	53	83	43	107
86	25	59	20	3
145	56	84	59	56
120	46	76	30	86
148	52	91	49	95
<u>Middle Group</u>				
118	23	77	33	96
96	26	58	32	96
58	30	74	27	54
55	35	58	19	24
95	38	56	19	- 2
105	40	65	35	81
53	29	57	23	31
79	27	56	31	82
128	52	86	43	97
137	31	61	32	95
89	33	65	24	67
87	25	74	47	94
138	45	70	54	111
128	47	57	15	87
69	38	73	21	99
108	38	65	28	42
<u>Lower Group</u>				
98	35	65	45	- 2
65	23	68	20	93
118	44	75	27	42
106	42	85	37	109
64	35	66	33	65



TABLE XL

TEST SCORES OF ADMINISTRATORS ON THE ALLPORT-VERNON-LINDZEY STUDY OF VALUES WHO RATED IN THE "UPPER GROUP," "MIDDLE GROUP," AND IN THE "LOWER GROUP" ON THE TOTAL RATING GUIDE.

Theoretical	Economic	Aesthetic	Social	Political	Religious
<u>Upper Group</u>					
66	43	40	21	39	31
40	39	40	36	43	41
47	57	50	40	32	27
38	50	35	29	47	41
50	50	26	39	32	43
48	44	31	32	44	41
46	44	27	48	34	41
39	34	26	48	46	47
53	31	32	43	32	49
38	50	26	41	45	40
46	42	28	27	39	58
48	43	35	40	38	36
45	45	28	40	43	39
36	44	25	37	50	48
<u>Middle Group</u>					
45	53	30	33	47	32
42	41	29	53	43	32
55	44	23	32	45	40
38	43	27	32	51	49
44	49	22	40	41	44
40	35	30	44	45	46
35	41	41	36	38	39
43	36	47	31	50	33
40	45	30	49	39	37
49	47	54	25	40	25
40	42	37	39	39	43
41	37	33	42	41	46
24	33	54	33	55	41
40	31	53	47	39	30
48	43	25	38	44	42
45	42	37	37	39	40
<u>Lower Group</u>					
40	41	28	32	46	53
48	35	28	47	28	54
44	37	36	39	30	54
38	32	32	47	37	54
46	49	25	39	44	37

TABLE XLI

TEST SCORES OF ADMINISTRATORS ON THE THURSTONE TEMPERAMENT  
SCHEDULE WHO RATED IN THE "UPPER GROUP," "MIDDLE GROUP,"  
AND IN THE "LOWER GROUP" ON THE TOTAL RATING GUIDE

Active	Vigorous	Im- pulsive	Dominant	Stable	Sociable	Re- flective
<u>Upper Group</u>						
14	17	7	8	11	4	18
15	16	12	17	14	18	6
13	13	12	15	18	15	6
12	12	12	12	9	11	11
9	14	9	7	13	12	9
9	12	14	18	8	16	11
12	12	14	15	17	15	8
6	14	11	14	14	16	9
15	14	11	17	11	13	11
12	14	4	12	6	9	10
6	12	12	17	11	15	7
9	5	5	12	14	14	10
10	8	14	19	19	19	13
15	6	10	13	9	11	7
<u>Middle Group</u>						
12	14	10	6	12	11	11
8	16	15	16	19	8	5
3	16	8	14	17	11	9
18	9	10	17	14	18	8
16	11	9	10	12	10	8
17	13	10	14	8	13	10
8	9	12	13	17	18	14
10	15	10	14	11	16	11
18	11	11	20	12	17	11
14	18	19	19	19	17	10
9	7	10	15	12	18	9
13	8	9	18	9	16	8
13	9	6	0	14	7	10
11	14	7	16	19	18	12
15	18	12	11	14	15	6
5	15	12	8	12	8	8
<u>Lower Group</u>						
11	16	8	13	13	9	13
14	15	14	19	15	18	9
4	8	9	7	19	13	12
5	16	7	15	16	18	5
14	12	8	16	10	18	5

TABLE XLII

TEST SCORES OF ADMINISTRATORS ON THE EDWARDS PERSONAL PREFERENCE SCHEDULE WHO RATED IN THE "UPPER GROUP," "MIDDLE GROUP," AND IN THE "LOWER GROUP" ON THE TOTAL RATING GUIDE

Achievement	Deference	Order	Exhibition	Autonomy
<u>Upper Group</u>				
19	17	18	9	12
12	14	7	11	10
16	13	6	18	15
9	17	13	8	10
19	13	13	11	13
24	18	12	16	5
10	18	16	10	8
7	13	12	10	7
10	14	13	9	10
25	14	15	15	13
14	12	13	19	12
16	16	9	21	10
24	16	10	13	9
20	10	3	16	14
<u>Middle Group</u>				
16	17	10	11	8
16	12	10	12	13
13	16	13	13	16
9	10	11	11	9
14	17	10	17	7
14	14	18	21	5
12	12	12	9	13
23	22	24	16	9
10	10	10	10	10
16	13	6	9	13
6	17	5	8	17
16	15	14	15	11
15	18	10	7	20
14	20	20	4	12
20	10	9	16	11
14	16	23	12	11
<u>Lower Group</u>				
17	16	15	9	18
12	20	17	13	6
18	20	18	9	4
11	18	19	12	5
13	13	16	13	7

TABLE XLII (continued)

TEST SCORES OF ADMINISTRATORS ON THE EDWARDS PERSONAL PREFERENCE  
SCHEDULE WHO RATED IN THE "UPPER GROUP," "MIDDLE GROUP," AND  
IN THE "LOWER GROUP" ON THE TOTAL RATING GUIDE

Affiliation	Intracception	Succorance	Dominance	Abasement
<u>Upper Group</u>				
12	19	8	16	11
20	18	11	19	9
20	17	5	24	9
16	18	13	21	11
12	14	18	7	16
20	21	8	16	11
15	22	19	15	14
25	22	3	10	17
15	23	14	12	15
14	16	3	25	10
13	19	8	23	13
19	13	12	19	7
17	19	2	20	6
18	20	15	15	11
<u>Middle Group</u>				
14	15	18	14	14
11	18	12	16	9
13	10	9	18	12
19	14	18	17	14
17	18	16	20	15
18	24	7	21	7
14	17	15	24	14
14	14	8	13	8
20	24	10	24	11
12	22	12	14	12
16	23	4	21	11
10	21	14	16	9
11	14	20	9	8
12	28	11	14	13
11	12	11	18	10
9	16	17	9	20
<u>Lower Group</u>				
8	23	11	20	12
16	26	3	17	11
12	25	11	14	18
18	22	8	12	15
13	23	5	15	13

TABLE XLII (continued)

TEST SCORES OF ADMINISTRATORS ON THE EDWARDS PERSONAL PREFERENCE SCHEDULE WHO RATED IN THE "UPPER GROUP," "MIDDLE GROUP," AND IN THE "LOWER GROUP" ON THE TOTAL RATING GUIDE

Nurturance	Change	Endurance	Heterosexuality	Aggression
<u>Upper Group</u>				
8	21	23	4	14
15	19	11	24	10
11	11	15	17	10
15	16	17	10	16
15	14	15	18	12
9	15	20	10	5
23	14	17	0	10
24	17	16	24	3
14	10	16	15	20
12	6	21	6	15
13	10	11	17	12
11	24	15	12	6
11	18	14	21	10
18	15	7	17	11
<u>Middle Group</u>				
14	11	9	24	15
8	17	8	27	20
18	16	14	13	16
24	9	17	17	11
16	9	6	13	17
16	21	9	6	9
13	14	18	14	11
14	16	19	2	7
25	11	11	1	24
2	23	15	23	18
16	15	14	22	15
15	21	13	11	9
23	10	5	22	18
13	13	21	6	9
16	19	14	13	10
14	11	14	14	10
<u>Lower Group</u>				
14	12	20	0	15
17	14	24	6	8
19	14	21	2	5
21	13	17	12	7
12	17	16	12	12