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**AN EXPLORATORY STUDY OF RELATIONSHIPS BETWEEN INTERESTS
OF SCHOOL SUPERINTENDENTS IN SCHOOL ADMINISTRATION AND
SELECTED TEST RATINGS, EFFECTIVENESS ON THE JOB,
AND CERTAIN OTHER FACTORS**

by

RICHARD M. HEATH

B. A. Montana State University, 1954

**Presented in partial fulfillment of the requirements
for the degree of
Master of Arts**

MONTANA STATE UNIVERSITY

1955

Approved by:



Chairman, Board of Examiners



Dean, Graduate School



Date

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R. M. H.

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CHAPTER I

THE PROBLEM AND DEFINITIONS OF TERMS USED

Background and setting of the problem. One of the important problems confronting institutions that are designed to train administrators is the selection of the individuals for training.

Selection before training, thus eliminating many of the unfit who become technically qualified, would be a large step toward the improvement of school administrators. Research which will point the way in meeting this problem is much needed. Much of what is known about qualities essential for success in the superintendency needs to be put into practice.¹

Careful selection of those to be trained is essential if greater progress in education is to be made. The superintendent of schools has come through a continual development to occupy a very significant position in many American cities. He has come to be the executive responsible for the business and educational aspects of administration. Every day more and more responsibility is bestowed upon the position. He is an administrative officer whose duty it is to administer efficiently a budget that sometimes runs into millions of dollars. He is in charge of selecting and improving teachers. The educational system of the city is also developed by him. This man must serve as a community leader and supervise most actions of his board. The city

¹Theodore L. Reller, Administration--City School, Superintendent of Schools. In Encyclopedia of Educational Research, (ed.), Walter S. Monroe. (New York: The Macmillan Company, 1950), p. 14.

superintendent plays an important part in determining the direction the city, state, and nation will take in our changing society.²

In the judgment of the Committee on Certification of School Administrators the superintendency constitutes a challenge to all the intelligence, patience, resourcefulness, tolerance, and tact an individual has. The committee indicates that it eagerly awaits the time when training institutions will exercise careful selectivity in admitting future superintendents. As conditions have developed, the demands on American schools call for enormous potentialities of leadership from those who would serve as superintendents.³

Melby, in his work concerning the training and selection of the superintendent of schools, has indicated that it would seem that study should be given not only by superintendents and training institutions, but also by boards of education, to the problem of the best types of training and experience as preparation for the most effective work in the city superintendency.⁴

The references noted above are used with the idea of helping the reader of this paper to become aware of the problems teacher training institutions are faced with in selecting and preparing prospective administrators.

²Ibid.

³American Association of School Administrators. The Superintendent and His Work, Final Report of the Committee on Certification of Superintendents of Schools (Washington, D. C.: the Association, 1940), p. 43.

⁴Ernest O. Melby, "A Problem in the Training and Selection of the Superintendent of Schools," American School Board Journal, 79:38-39, November, 1929.

Were the findings of this study to show a close relationship between the interest of administrators in administration and their effectiveness on the job, then interest would be an important factor in the selection and preparation of students for administration.

I. THE PROBLEM

Statement of the problem. This study was concerned with the results of the Strong Vocational Interest Blank which was given to a sample of 156 Montana school administrators. The investigator sought possible correlations between the scores on the Strong Vocational Interest Blank and: (1) length of tenure of administrator in present position; (2) length of educational service of administrators; (3) size of schools administered by superintendents; (4) age; and (5) effectiveness of the administrator (as measured by the Purdue Rating Scale).

Delimitation of the study. This study was confined to chief school administrators employed in Montana. The total number of administrators rated by the members of their professional staffs was 156. This number included approximately 80 per cent of Montana's school administrators for the year 1953-54. The study was limited also by the fact that only one measure of administrative effectiveness, staff ratings on the Purdue Rating Scale, was used. The findings were based on the Montana sample and do not necessarily apply to administrators in other states.

Purpose of the study. The purpose of this study was to seek partial answers to the following questions through the analysis of

available data including over 3,000 teacher ratings on 156 school superintendents, selected biographical data, and the Strong Vocational Interest Blank: (1) How interested are school administrators in the job of school administration?; (2) Are the superintendents who are continually moving the most interested ones, or is tenure related to interest?; (3) Is there any relationship between interest and effectiveness on the job as indicated by the results of the Purdue Rating Scale?; and (4) Are the most interested superintendents administrators of the larger schools?

Importance of the problem. Bingham and Freyd assert that "both vocational and avocational interests should by all means receive consideration in analyzing the personnel."⁵ Interests may be regarded as indicators of the existence of special aptitudes; with mature people there is a high degree of correlation between interests and vocational abilities. "It is consequently important to know the recreations of the personnel, their ambitions, their attitudes, as well as their relative interest in this (their own) and other occupations."⁶ The analysis of interests has proved of great importance in almost every vocational study in which it has been attempted.

This study is made on the assumption that insight into interest patterns of school administrators might provide useful information in developing a training program for school administrators. In setting up such a study, the writer sought to dis-

⁵W. Van Dyke Bingham and M. Freyd, Procedures in Employment Psychology (New York: A. W. Shaw Company, 1926), p. 64.

⁶Ibid., p. 64.

cover what relationships, if any, existed between intensity of interest of school administrators in school administration and: (1) effectiveness of school superintendents as measured by subordinates' ratings; (2) length of tenure of superintendent in present position; (3) length of educational service of superintendents; (4) length of administrative experience of superintendents; (5) size of schools administered by superintendents; and (6) age.

II. INSTRUMENTS USED

Strong Vocational Interest Blank. The Strong Vocational Interest Blank is an instrument designed by Strong to measure the strength of interests. The test is not one of intelligence or ability to do school work. It measures the extent to which one's interests agree or disagree with those of successful men in a given occupation. It is possible with a fair degree of accuracy to determine by this test whether one would like certain occupations or not.

The test itself contains 400 items and takes about forty minutes to administer to the average person. The subject merely signifies preference for each item. It is not timed. The arrangement of the revised test is much more convenient than that of an earlier form, both for persons taking the test and those scoring it. The test is not too long; briefer inventories of this type are almost certain to be less reliable, less valid, and more liable to self-deception on the part of subjects. The type of item is not entirely self-explanatory; hence, mere inspection is not adequate

basis for insight into the meaning of the scores.⁷

The Blank permits the person who administers it to state that the subject made the same response on a certain percent of items as did a certain proportion of successful people in a given field.

Psychologists who have made extensive use of this inventory in practical vocational guidance situations have reported that it has great value. This viewpoint is supported by the literature. The scoring is somewhat expensive unless it is scored by hand, but unpublished studies by Carter indicate that about 80 per cent of those who take the test are benefited by it and feel that they get their money's worth, while about 20 per cent are adversely critical. Comments by students who cooperate in such experiments indicate that in a majority of cases the test provides a correct appraisal of their attitudes. The inference is made that it provides a basis for insights which counselors could gain otherwise only through long acquaintance.⁸

Interest. Arthur J. Jones, Professor of Secondary Education, School of Education, University of Pennsylvania, states:

. . . . Interests are elements in, or parts of, the personality and the aptitude patterns

The term "interest" . . . may be defined somewhat technically as a feeling of liking associated with a reaction, either actual or imagined, to a specific thing or situation. Since it is a feeling, it cannot be objectively measured or determined, for its presence or absence can be revealed only by the statement of the individual himself. While there is no way by which this

⁷Edward K. Strong, Jr., Manual for Vocational Interest Blank for Men, (Stanford, California: Stanford University Press, January, 1951), p. 3.

⁸Harold De. Carter, (Test Review), The Nineteen Forty Mental Measurements Yearbook, Oscar K. Baros, editor (Highland Park, New Jersey: The Mental Measurements Yearbook, 1941), p.1680.

self-report can be completely validated, we can make estimates that are, for practical purposes, very helpful.

Interests are motivating factors in an individual's choice of a vocation. With this in mind, Strong has produced an instrument by which the strength of such interests may be measured. By means of the results of such a test Strong claims that he can predict the potential success or failure of an individual in a given profession.¹⁰

Individuals occupied in particular vocations have certain distinctive likes and dislikes which predispose them to be different from those pursuing other vocations. "It is assumed," wrote Strong, in the Manual for the Interest Blank, "that, if a man likes to do things which men like who are successful in a given occupation and dislikes to do the things which these same men dislike to do, he will feel at home in that occupational environment."

Seemingly, also, he should be more effective there than somewhere else because he would be engaged, in the main, in work he liked.¹¹

"Interest scores reflect choices people actually make and

⁹ Arthur J. Jones, Principles of Guidance (New York: McGraw-Hill Book Company, Inc., 1951), p. 214.

¹⁰ Elias Abramowitz, "Correlation Analysis of the Differential Weighting Technique of the Strong Vocational Interest Blank" (unpublished Master's thesis, Columbia University, New York, New York, 1935), p. 38.

¹¹ Strong, op. cit., p. 1.

plans of action they actually carry out."¹²

Purdue Rating Scale for Administrators and Executives. This scale was constructed by the Division of Educational Reference, Purdue University, for the purpose of furnishing an administrator with information about himself and his job, which he could use for self-improvement. The scale consists of 36 items covering various traits upon which an administrator's subordinates could rate him.

The selection of the subordinate-administrator rating scale, instead of some other technique of measurement, was based upon logical considerations. Of primary importance was the proposition that since administrative effectiveness is largely a social quality, it can be better appraised by evidence of effective social interaction than by non-social measures of individual ability.¹³

An investigation of the reliability of the items indicated that all of them were acceptably free of chance fluctuations. The 36 coefficients of reliability for 20 raters were all above .700, and 15 of the 36 coefficients were above .900. The combined, or "average", reliability of all items was .89.

Because of the technique used in determining reliability, it was possible on sound logical grounds to consider reliability and validity of the items as synonymous. Validity of the scale as a unit was checked against an internal measure of staff morale as a criterion, and a coefficient of .812 was obtained.¹⁴

The Purdue Scale was used in this study as a means of measuring administrative effectiveness. No effort was made to defend it

¹²Leona E. Tyler, "Relationships Between the Strong Vocational Interest Scores and Other Attitude and Personality Factors," Journal of Applied Psychology, 29:58-60, February, 1945.

¹³Robert L. Hobson, "Some Psychological Dimensions of Academic Administration," Further Studies in Attitudes, Series XVIII (Lafayette, Indiana: The Division of Educational Reference, Purdue University, undated), p. 30.

¹⁴Ibid., p. 46.

as the best measure of the effectiveness of the school administrator. It was employed only as one means of ranking school administrators in terms of subordinate's opinions of their effectiveness.

III. DEFINITIONS OF TERMS USED

School Administrator. The term "school administrator" has many definitions. The Dictionary of Occupational Titles has defined two school administrative positions, that of the school superintendent and that of the principal.

Superintendents of Schools (education) 0-31.10. Formulates plans and policies for the administration of a city, county, or other school system, and oversees their execution, performing duties, such as supervising the examining, appointing, promoting, and training of teachers, selecting textbooks, and insuring that laws applying to the attendance of children at school are enforced.¹⁵

Principal (education) preceptor; preceptress. 0-31.10. Is administrative head of a school performing duties to various teachers, establishing relationships with colleges or other schools, promoting and regulating social life within the school and formulating rules of discipline; orders, receives, and distributes supplies; gives advice to teachers and students.¹⁶

Throughout this study the term "school administrator" will include only those administrators who are responsible to a school board.

Effectiveness. Throughout this study effectiveness will be referred to as the average score the administrator received

¹⁵Dictionary of Occupational Titles Part I Definition of Titles (Prepared by the Job Analysis and Information Section, Division of Standards and Research, Washington: U. S. Government Printing Office, 1939), p. 912.

¹⁶Ibid., p. 710.

from his teaching staff on the Purdue Rating Scale. The Purdue Rating Scale is only one measure of effectiveness, and it is so used in this study.

IV. BASIC ASSUMPTIONS

Assumptions. The analysis of the data rested on such assumptions as: (1) that the Purdue Rating Scale when used by teachers to rate chief school administrators may be considered one valid criterion of the degree of effectiveness of school administrators; (2) that such biographical information as was supplied by the school administrators was trustworthy; (3) that the Strong Vocational Interest Inventory was used under testing conditions that were as controlled as possible; (4) that knowledge of relationships between traits of school administrators on the one hand and measures of their effectiveness on the other would be helpful in planning preparation programs for administrators.

V. ORGANIZATION OF THE REMAINDER OF THE STUDY

Since much has been written regarding interest tests and the Purdue Rating Scale, Chapter II will be devoted to a review of the literature regarding this Interest Blank and Rating Scale.

Chapter III will list the sources of data, the method of procedure, and the assumptions.

In Chapter IV, the findings will be related. The relationships, if any, between the Interest Blank and the Rating Scale, will be reported and also the relationships, if any, between the Interest Blank and other selected biographical data.

The summary, conclusions, and recommendations, if any, will be recorded in Chapter V.

CHAPTER II

REVIEW OF THE LITERATURE

There is a considerable amount of related literature on interest tests in general, and on the Strong Vocational Interest Blank in textbooks, educational magazines, theses, and professional papers. The writer, however, was unable to find a study where the results of the Strong Interest Blank given to superintendents were compared with results from the Purdue Rating Scale. Edward K. Strong, Jr., Stanford University, replied to a letter of inquiry that he did not know of anyone who had completed a similar study. He said, "The area needs investigation."¹

I. EVALUATION OF INSTRUMENTS

General information on the Strong Vocational Interest Blank. This test is based upon twenty years of research on the measurement of interests, and is at present the most outstanding of the several inventories of its type. Its advantages and limitations are primarily those inherent in the method of approach. It is undoubtedly of value in educational and vocational guidance, but the intelligent use of it demands some understanding of the technique, and some knowledge of the accumulated facts now available concerning interests, abilities, occupations, and the sig-

¹Edward K. Strong, Jr., (Correspondence of March 29, 1953, with investigator.)

nificance of vocational adjustment as a factor in the integration of personality.²

The test may be scored by 35 different occupational scales, for which the intercorrelations are given in the manual along with a summary of the evidence on the reliability, validity, and general stability of the measures. The average reliability coefficient is .88 by the odd-even technique, .87 by the test-retest method with one week intervening, and .75 by the test-retest method with five years intervening. Norms are furnished with each published scale. In the manual is a bibliography of seven references which furnish detailed information concerning particular aspects of the technique, and specific limitations, advantages, and applications of the test.³

Relation of the Strong Vocational Interest Blank to other measures. The Strong Vocational Interest Blank seems to be as valid as any other instrument and more valid than most of them.

The identification and measurement of vocational interests present many problems to diagnosticians and many interest tests are available which offer to solve these problems. No more than six of these tests, however, are extensively used. Interest tests, similar to other personality tests, have been constructed on either an empirical basis, as illustrated by the Strong Vocational Interest Blank, or on a rational basis as illustrated by the Kuder Preference Record. Although one method of item selection, item weighting, and scale construction may provide a more valid instrument than another, their relative validity de-

²Harold D. Carter, "A Report on the Strong Vocational Interest Inventory for Men", Mental Measurements Yearbook, Oscar K. Buros, editor (Highland Park, New Jersey: The Mental Measurements Yearbook, 1941), p. 1679.

³Edward K. Strong, Jr., Manual for Vocational Interest Blank for Men (Stanford, California: Stanford University Press, January, 1951), p. 15.

termines the value of the tests rather than method of construction. The evidence at present tends slightly to favor those tests which have been empirically constructed.⁴

"Fakability" of the Strong Vocational Interest Blank.

A weakness of the Strong, is the ability of the testee to fake an interest score if he thinks it is desirable to do so. This is unimportant if the person is in earnest search of his vocational interest, but where the Strong may be used as a screening device, this factor is pertinent. The author of the test has not devised a "lie" scale for the test as yet.⁵

This shortcoming of "fakability" is shared by tests other than the Strong.

Fifty-nine students took the SVIB and the Kuder Preference record. They were then instructed to attempt to fake certain scores upward and other scores downward on a second administration of the test. Results showed that (1) both tests are fakable; (2) interest categories differ in their fakability; and (3) Strong is easier to fake upward and Kuder downward. It is suggested that when the forms are used in certain situations a special set of directions be given and that a set of items which yield a "lie" score be added.⁶

⁴Walter S. Monroe (ed.). Encyclopedia of Educational Research (New York: The Macmillan Company, 1950), p. 1308.

⁵Oscar Krisen Duros (ed.). The Fourth Mental Measurements Yearbook (Highland Park, New Jersey: The Gryphon Press, 1953), p. 747.

⁶Howard P. Longstaff, "Fakability of the Strong Interest Blank and the Kuder Preference Record," Journal of Applied Psychology, 32: 360-69, August, 1948.

Because the tests are fakable it does not follow that they are faked in general practice. Terman found little faking on his masculinity-femininity test even when subjects know the purpose of the test; yet, when told to fake, they were able to do so to a marked degree.⁷

The same is true with the Strong Interest tests. Strong makes the following statement: "The large number of correlations over .80 and particularly over .90 are good evidence that there is remarkable consistency in response to interest items. A small amount of fudging would make such high correlations unlikely."⁸

This is the best answer possible to the question of fakability. Very high scores may indicate faking, but it does not follow that faking will always produce high scores.

When the examiner administered these tests, special effort was made to stress the desirability of truthful answers.

The value of interest tests. The Strong Vocational Interest Inventory, despite the fact that it is one of the most time consuming and costly inventories to score and, despite some shortcomings, remains as the interest test whose usefulness has been most carefully and thoroughly demonstrated.⁹

⁷L. M. Terman and C. C. Miles, Sex and Personality (New York: McGraw-Hill Book Company, 1936), pp. 77-79.

⁸E. K. Strong, Jr., Vocational Interests of Men and Women (Stanford, California: Stanford University Press, 1943), pp. 686-87.

⁹Oscar Krisen Bares (ed.), The Fourth Mental Measurements Yearbook (Highland Park, New Jersey: The Gryphon Press, 1953), p. 747.

The Strong Blank was the forerunner of the present-day crop of inventories and interest tests. None other has a more secure foundation or offers more possibilities than does the Strong. The Strong is continually revised by the test maker by supplying new scales and revising old ones.¹⁰

The tedious scoring is not always a serious problem, for much valuable information can be gained by incomplete scoring. Of all the inventories, the Strong has been the most demanding in terms of empirical foundation and background. It is a real job to use it as it should be used, but the returns for the effort involved are good and make the use of the test well worth while.¹¹

The Strong is a specific instrument to aid the vocational counselor, and not a panacea for all his ills. It is intended to indicate to the individual, which vocation he is likely to be best satisfied with, in view of his interests. It is intended to supplement ability tests and aptitude tests, not to replace them. For the purpose of summarizing one's attitudes in terms of occupational significance, it is the best available test.¹²

Weakness of the Strong Vocational Interest Blank. Longstaff, Steward, Paterson, Bordin, Benton, and Kornhauser have conducted studies on the weakness of interest tests. These studies were summed up by Rothney and Schmidt. They claim that there is no way of telling if the subject has faked his responses, so that every

¹⁰ Loc. cit.

¹¹ Oscar Krisen Bureau (ed.). Mental Measurements Yearbook (Highland Park, New Jersey: The Gryphon Press, 1938), p. 749.

¹² Carter, op. cit., p. 1680.

score obtained must be questioned regardless of the conditions under which it has been obtained.¹³

The vocabulary problem. The problem of interpretation is complicated, too, by the vocabulary problem. Consider the item "actress" which appears in one of the common inventories. The student is required to respond to this item by indicating like, dislike, or indifference to that word alone. Now the word "actress" covers a wide variety of performers from burlesque queen to moving picture star to television bit-performer and to others. The advantages and disadvantages of being an actress of each of these kinds must be known to few of the responders, the pay range must be a question of speculation, and the opportunities in the profession must be known to a limited few. Without such knowledge the subject is to express like, dislike, or indifference to something about which he knows little and yet that response is supposed to be used to help him to make one of the most important decisions of his life, the selection of a career.¹⁴

The forced choice problem. Even the vocabulary problem would not be so serious were it not for the fact that there is great unevenness in the knowledge of the testee of the various items a subject must respond to or choose among. He is forced to make a choice among the items and this may require selection between ignorance and knowledge. The item in which possession of

¹³John W. M. Bethney and Louis G. Schmidt, "Some Limitations of Interest Inventories", The Personnel and Guidance Journal, 33:199-204, December, 1954

¹⁴Loc. cit.

information has meant reduction of glamour may be rejected in preference to one in which there is retained ignorance and continuing glamour.¹⁵

Limitation on expression of enthusiasm. Even if we can assume that there is almost equal knowledge of items there may be vast differences in amount of concern about them. The person may want to indicate that an item deals with one of his most important interests, but he cannot express his enthusiasm for it more forcefully than he can indicate a lukewarm interest. Johnson comments on this in a short article that deserves consideration.¹⁶

There are other drawbacks to interest tests, but the writer feels as though he has brought several of the most important ones to light and mentioned a few references which may be of interest to the reader. Some of the criticisms not mentioned previously are: (1) students may misinterpret the results, and (2) people who administer the tests may make wrong assumptions and procedures.

Reliability of the Strong Vocational Interest Blank.

Abromowitz reports that the question of reliability was resolved by the use of the "odds versus evens" technique. The average coefficient of reliability of 21 scales is .89 as based on the records of 285 Stanford seniors. The coefficient falls below .80 in only three cases -- personnel management (.78), interest maturity (.78), and certified public accountant (.74). In ten

¹⁵Loc. cit.

¹⁶G. Johnson, "Meditations on an Interest Test." Occupations, 30:357-58, February, 1952.

cases the coefficient equals (.90) or higher.

It is observed that, by and large, Strong has developed an excellent instrument for judging potential success or failure in diversified vocations insofar as the reliability and internal consistency of the Vocational Interest Blank are concerned.¹⁷

II. LIMITATIONS OF RATINGS

"Weakness" of the Purdue Rating Scale. Rating is a type of diagnostic technique. The first modern rating scale was developed by Galton in 1883 and since that time several methods of making and recording ratings have been developed. They include man-to-man rating scales, paired comparison scales, graphic rating scales, the check-list type of scale, the "guess who" type of scale, and the nominating method.

Hollingsworth pointed out the errors that affect the reliability and validity of ratings.¹⁸ Based upon these errors, Symonds presents a list of procedures and precautions that result in more valid ratings. Rating scales are somewhat similar to Interest Tests in that their success appears to be limited. More systematic use of rating methods is found in industrial personnel work than in educational personnel work. Ratings other than

¹⁷Elias Abremovitz, "Correlation Analysis of the Differential Weighting Technique of the Strong Vocational Interest Blank" (unpublished Master's thesis, Columbia University, New York, 1935), p. 45.

¹⁸H. L. Hollingsworth, Judging Human Character (New York: D. Appleton and Company, 1923), pp. 91-99.

course marks are seldom used systematically by student personnel workers.¹⁹

The summary of these two measures mentioned here and of all diagnostic techniques reveals some significant trends. (a) The area covered by tests has greatly expanded during the past decades, and tests of personality and interests are in common use. (b) New testing techniques have appeared, both as to types of test items and methods of standardization. (c) The second world war extended the use of all kinds of tests to the point where now these tests are an accepted part of our culture. (d) Diagnosticians are well aware that much needed information cannot be obtained from tests and that other diagnostic techniques are necessary.

The "halo" effect. The manual defines the "halo" effect as: the tendency for a rater to express his general opinion of a person he is rating by marking him with similar ratings on all traits.²⁰

It is important to know the extent of influence of the "halo" effect upon a rating device which is intended to measure a series of traits. Examination of the raw data of the rating scale for administrators indicates that the "halo" effect can scarcely be of major importance.²¹

¹⁹P. M. Symonds, Diagnosing Personality and Conduct (New York: The Century Company, 1931), pp. 41-64.

²⁰Robert L. Hobson, "Some Psychological Dimensions of Academic Administration," Further Studies in Attitudes, Series XVIII (Lafayette, Indiana: The Division of Educational Reference, Purdue University, undated), p. 30.

²¹Loc. cit.

If a "halo" effect were present to a great extent, then the intercorrelations of the items would necessarily be high.

CHAPTER III

SOURCES OF DATA, PROCEDURES FOR SECURING DATA, AND THE SAMPLE

I. SOURCES OF DATA

Good, Barr, and Scates maintain that "a given problem may be solved or a hypothesis tested, only by the collection of pertinent data."¹

The sources of data for this study may be enumerated as:

(1) The Strong Vocational Interest Blank (see Appendix A) which was personally administered to the 156 Montana school administrators by Linus J. Carleton, Dean of the School of Education, Montana State University; (2) The Purdue Rating Scale which was used by staff members to rate the 156 administrators; (3) selected personal data supplied by each administrator; and (4) various reference materials including books, the Strong Vocational Interest Blank Manual, reports, journals, indexes, and periodicals.

II. SECURING PARTICIPATION

During the 1953-54 school year an attempt was made by Linus J. Carleton to secure as wide participation as possible of Montana school administrators in a study of the school administrator as a person. Letters and post cards were mailed to the various

¹Carter V. Good, A. S. Barr, and Douglas E. Scates, The Methodology of Educational Research, (New York: D. Appleton-Century Company, Inc., 1941), p. 771.

school administrators requesting and encouraging participation and asking for suggestions regarding the locations of testing centers. As a result, 128 administrators indicated their willingness to take part in the study. Some twenty-eight others later joined this group, making a total of 156 out of the total population of 207.

Weather, work schedules, and timing of the teacher-rating scales determined the choice of fall for the first round of testing. On September 12, 1953, thirteen testing centers were tentatively set up. The tests were given on October 5-15 and November 3-10. Arrangements for testing space had previously been made at the various testing centers. In three cities (Bozeman, Billings and Havre) college facilities were made available; in other places a room in the local school was used. Letters were sent to the administrators asking them to signify which testing center would be easiest for them to reach and requesting them to come.

III. PROCEDURES AT TESTING CENTERS

The following testing pattern was developed before the first session and strictly adhered to at all sessions.

1. The purposes of the study were briefly reviewed. Comments were made to dispel any fears as to the misuse of the information. Particular emphasis was laid on the guarantee of anonymity in publication of the results.

2. A brief explanation was given concerning the instruments to be used, except where such explanation would interfere

with the effective use of the instrument.

3. Participants were promised that their scores and profiles would be made available to them.

4. The instruments were used in the following manner.

a. The Strong Vocational Interest Blank. Hanks-type answer sheets were used for this instrument, full explanation was given, and individual checking made as to carrying out of marking directions. The time for the administration of the SVIB was approximately one hour.

b. The Purdue Rating Scale for Administrators and Executives. A brief explanation was offered to the administrators with regard to the use of the Purdue Scale with staff members. Points emphasized were: (1) desirability of preventing staff members from working together on ratings, and (2) need for complete anonymity of raters. These directions were later included in letters and rating sheets that were sent out to all administrators who had participated in the study. The letter to the administrator suggested procedures for using the scale, and urged the administrator to point out to his staff the desirability of independent judgments, the need for promptness, and the assurance of anonymity of raters. Directions for return mailing were also included.

Because the validity of the Purdue Scale depends very largely on the manner of its administration, the following outline of procedures is incorporated in this writing.

1. The Purdue Rating Scale for administrators and executives as developed by H. H. Remmers and R. L. Hobson was dupli-

cated after permission to do so had been secured from the Division of Educational Reference of Purdue University at Lafayette, Indiana. A copy of the multigraphed form appears in Appendix E. Minor changes in the "Instructions" had to be made to adapt the form to its intended use.

A half-sheet of special directions "To Teachers, Principals, Supervisors, and other Professional Employees" was attached to the rating sheets. Each rater was requested to describe "the basis on which your rating of this administrator is made." Four choices were listed as follows:

- () My judgments are based both on knowing this administrator well as a person and observing him frequently as he carried on his work in the school system and community.
- () My judgments are based on frequent observations of this administrator as he carried on his work, though I do not know him well as a person.
- () My judgments are based on knowing this administrator well as a person, though I observe his work only infrequently.
- () My judgments are based largely on hearsay, since I see this administrator only infrequently and do not know him well as a person.

Each rater was asked to indicate with an "X" the statement most applicable to himself.

In order to insure anonymity, gummed envelopes were pro-

vided so that each rater, after he had filled in the form, could place the form in an envelope and seal it. In most schools the envelopes were then gathered up by a teacher or principal, placed in a large manila envelope on which had been placed sufficient postage, and mailed to the researcher at Missoula, Montana. In some cases individual teachers mailed their ratings directly to Missoula. These ratings so returned were no oftener low than high.

c. The Biographical Inventory. Completion of this form was not required to be done at the testing center. Most of the administrators were given stamped envelopes in which to mail the Inventory from their home towns.

IV. THE SAMPLE

The universe of the 207 Montana school administrators employed by County High School Districts, First Class Districts, Second Class Districts, and Third Class Districts as the chief school administrative officer in each district was chosen for study. Of the 207 school administrators comprising the universe as designated, 156 participated in the study.

This sampling of 156 of the 207 school administrators was distributed by category as indicated in the following distribution:

THE SAMPLE

Class School	Total Population	Sample	Missing	% Sample is of Total Population
County High Schools	11*	11	0	100%
First Class Districts	9	8	1	89%
Second Class Districts	80	68	12	85%
Third Class Districts H.S. & Grades	88	64	24	72.7%
Grades Only	19	5	14	26.3%
Totals	207	156	51	75.6%

* Six other county high schools are operated jointly with the elementary schools in the district; i. e., a single administrator responsible to both boards. These administrators are counted by class of district.

N. B. If the fourteen very small districts having only a grade school and a teaching principal are eliminated from the population the sample would be 82.7% of the total population of school administrators.

The 156 administrators under study were rated on the Purdue Rating Scale by over 3,000 teachers under their supervision. For the purpose of determining relationships between the ratings of administrators on the Purdue Rating Scale and on the SVIB, groups were made as follows: (1) those administrators who were

rated by 20 or more teachers; (2) those administrators who were rated by 10 to 19 teachers; and (3) those administrators who were rated by 1 to 9 teachers.

No sub-groups were established on the basis of age of the administrator, educational and administrative experience of the administrator, tenure of the administrative, or the size of the school system in question.

CHAPTER IV

FINDINGS

I. RELATIONSHIPS BETWEEN SVIB SCORES OF ADMINISTRATORS AND RATINGS ON THE PURDUE RATING SCALE

Strong Vocational Interest Blank Results. When taking the Strong Vocational Interest Blank, the administrators marked their answers on the Hanes answer sheet (see Appendix B). In order to score these answers by hand, they were transferred to a form (see Appendix C) that was mimeographed by the University Clerical Service. Then the keys devised by Strong to measure administrators' interests were applied.

There was a very wide range in the scores obtained. They ranged from a +159 to a -34. This indicates that the men who composed this group of administrators varied considerably in their intensity of interest in school administration.

The median of this group was +63 which is just barely passing (see explanation at end of table below).

In Table I the numbers in the column designated "(1)" refer to each individual administrator. These numbers were assigned at random to the different individuals.

The first line of the table should be read as follows: Administrator No. 100 made a score of 159 on the SVIB, which shows that his interest in school administration (as shown by the SVIB) is very strong. There was a total of 156 administrators

scored on this test. The column entitled Raw Score on the Strong (2) gives the raw scores made by the various administrators on the SVIB. The third column (3) shows the grade assigned to the various scores in accordance with the manual.

TABLE II

RANK ORDER OF SCORES MADE BY ADMINISTRATORS
ON THE STRONG VOCATIONAL INTEREST BLANK

Administrator	Raw Score on the Strong	SVID Rating*
1	2	3
100	159	A
92	142	A
87	134	A
43	131	A
141	131	A
150	130	A
75	128	A
64	127	A
17	124	A
162	123	A
135	122	A
5	121	A
48	119	A
51	119	A
121	118	A
136	118	A
32	118	A
95	117	A
89	116	A
69	115	A
160	109	A
97	107	A
21	107	A
88	106	A
39	105	A
139	104	A
166	104	A
12	103	A
72	103	A
42	103	A
34	102	A
110	102	A
120	100	A
130	100	A
163	98	A
63	95	B+
57	94	B+
79	93	B+

TABLE II (continued)

Administrator	Raw Score on the Strong	SVIB Rating
1	2	3
80	93	B+
165	91	B+
148	91	B+
147	91	B+
53	91	B+
8	90	B+
119	88	B+
58	88	B+
103	88	B+
15	86	B+
153	85	B+
142	84	B+
29	84	B+
24	84	B+
90	83	B+
23	83	B+
98	82	B+
101	82	B+
109	82	B+
140	80	B+
145	79	B+
56	78	B+
35	78	B+
76	77	B+
58	76	B
134	76	B
30	75	B
54	75	B
158	74	B
138	74	B
14	74	B
159	73	B
11	73	B
50	73	B
161	73	B
25	73	B
162	73	B
115	72	B
112	71	B
9	70	B
26	70	B
86	68	B
4	67	B
16	67	B

TABLE II (continued)

Administrator	Raw Score on the Strong	SVIB Rating
1	2	3
83	66	B
52	66	B
87	68	B
105	65	B
13	63	B
109	62	B
128	61	B
144	61	B
107	60	B
66	60	B
67	59	B
126	59	B
131	57	B-
64	56	B-
55	56	B-
94	56	B-
41	56	B-
140	56	B-
40	55	B-
29	55	B-
65	54	B-
44	54	B-
156	53	B-
31	53	B-
71	53	B-
129	53	B-
10	48	B-
33	47	B-
116	74	B-
73	45	B-
27	45	B-
49	44	B-
1	42	B-
59	39	B-
155	36	C+
38	36	C+
63	34	C+
7	33	C+
151	33	C+
3	33	C+
157	27	C+
60	27	C+
28	26	C+
99	24	C+

TABLE II (continued)

Administrator	Raw Score on the Strong	SVIB Rating
1	2	3
93	22	C+
2	21	C+
133	20	C+
61	19	C
125	17	C
108	17	C
82	16	C
22	15	C
18	124	C
143	12	C
102	12	C
111	11	C
36	9	C
113	8	C
164	7	C
122	6	C
6	0	C
123	-3	C
45	-4	C
114	-9	C
46	-9	C
19	-11	C
74	-11	C
81	-13	C
118	-14	C
137	-14	C
146	-15	C
127	-18	C
85	-24	C
47	-34	C

- * A = Passed
- B+ = Passed
- B = Barely Passed
- B- = Not Passed
- C+ = Not Passed¹
- C = Not Passed¹

¹Edward K. Strong, Manual for Vocational Interest Blank for Men (Stanford, California: Stanford University Press, January, 1951), p. 14.

Correlation between the Strong Vocational Interest Blank and the Purdue Rating Scale for Group I, Table III. After the raw scores on the Strong Vocational Interest Blank were obtained, the 156 administrators were divided into three groups which may be enumerated as: (1) those administrators who were rated by 20 or more teachers; (2) those administrators who were rated by 10 to 19 teachers; and (3) those administrators who were rated by nine or less teachers. The scores of each of the three groups on the Purdue were then correlated with the scores obtained on the Strong Vocational Interest Blank.

In determining the degree of correlation between the ratings on the Purdue Rating Scale of the administrators as made by the teaching staffs of the 12 school systems and the scores made by the administrators on the Strong Vocational Interest Blank by groups as designated, the following steps were taken:

1. The average ratings were converted to standard scores.

A. Example: For the group of administrators in systems of 20 teachers or more.

$$N = 45$$

$$\text{Mean} = 4.22$$

$$\text{S. D.} = .21$$

$$\text{S. D.} = \sqrt{\frac{\sum x^2 - \frac{\sum x(X)}{N}}{N}}$$

$$\text{S. D.} = \sqrt{\frac{802.4826 - \frac{4.2177(189.80)}{45}}{45}}$$

$$\text{S. D.} = .21$$

$$B. \text{ Standard Score} = \frac{50 + \frac{X-M}{P} \times 10}{1}$$

$$\text{Case 88} = \frac{50 + \frac{4.69 - 4.22}{.21} \times 10}{1}$$

Standard score = 72

2. The raw scores on the Strong Vocational Interest Blank were converted to standard scores by the conversion table in the manual for the Strong.

3. After the results of both measures had been transferred to standard scores, Hull's Arrangement was used to determine the coefficient of correlation between the administrators' scores on the Purdue and the SVIB by groups as previously designated.

Example: Hull's Arrangement.¹

$$\text{Coefficient of Correlation} = \frac{m \text{ of } (A \times B) - (M_a \times M_b)}{\sqrt{M_a^2 - (M_a)^2} \times \sqrt{M_b^2 - (M_b)^2}}$$

"m of (AxB)" refers to the cumulative total of the products of paired items A and B divided by N.

"(M_a x M_b)" refers to the product of the averages of paired items A and B.

"M_a²" and "M_b²" refer to the average of the deviations squared of each of the paired items A and B.

"(M_a)²" and "(M_b)²" refer to the squares of the averages of the paired items.

Substitutions in symbolism will be explained at the time of their appearance.

¹Clark L. Hull, Aptitude Testing (New York: World Book Company, 1928), p. 423.

In Table III the ratings of the forty-five administrators in Group I (twenty or more raters in the system) on the SVIB and the Purdue Rating Scale were correlated using Hull's Arrangement as previously described.

The correlation coefficient ($r = -0.0078$) indicates the absence of any significant relationship between the ratings of the administrators in Group I on these rating scales. Table III gives the rankings on the Strong Vocational Interest Blank and the Purdue in terms of standard scores for each administrator.

TABLE III

DISTRIBUTION OF RATINGS OF ADMINISTRATORS IN GROUP I AS MADE BY
TEACHERS USING THE PURDUE RATING SCALE AND THE ADMINISTRATORS
STRONG VOCATIONAL INTEREST INVENTORY SCORE

Administrator	Teacher Rating Purdue Scale	Standard Score Purdue Scale	Standard Score Strong Inventory
1	2	3	4
88	4.69	72	47
37	4.58	67	54
49	4.53	65	31
122	4.52	64	21
102	4.52	64	22
31	4.49	63	34
61	4.47	62	25
51	4.42	60	50
9	4.42	60	37
52	4.41	59	36
79	4.39	58	44
56	4.34	57	44
23	4.33	56	41
150	4.32	55	53
144	4.32	55	35
84	4.30	54	52
149	4.27	53	40
69	4.26	52	48
38	4.26	52	28
138	4.26	52	39
59	4.25	51	30
125	4.23	51	24
76	4.23	51	40
103	4.22	50	43
87	4.21	50	36
135	4.19	49	51
139	4.19	49	47
161	4.14	47	38
155	4.13	46	26
7	4.12	45	28
24	4.10	44	41
39	4.09	44	47
93	4.09	44	26
54	4.09	44	39

TABLE III (continued)

Administrator	Teacher Rating Furdue Scale	Standard Score Furdue Scale	Standard Score Strong Inventory
1	2	3	4
164	4.05	41	21
97	4.04	40	47
67	4.02	40	35
113	4.01	40	22
126	4.01	40	35
121	3.96	38	50
80	3.96	38	44
57	3.89	34	44
48	3.84	32	50
110	3.84	32	31
134	3.80	30	39
N = 45	Mean 4.22	Mean 50	Mean 38.177

In using Hull's Arrangement, the following cumulative totals were substituted: The computational data are not shown.

Hull's Arrangement:

$$r = \frac{M \text{ of } (AxB) - (M_a \times M_b)}{\sqrt{M_a^2 - (M_a)^2} \times \sqrt{M_b^2 - (M_b)^2}}$$

$$M \text{ of } (AxB) = M \text{ of } (PxS) = 1907.20$$

$$M_a = M_p = 50$$

$$M_b = M_s = 38.177$$

$$M_a^2 = M_p^2 = 2599.82$$

$$M_b^2 = M_s^2 = 1548.71$$

$$r = \frac{M \text{ of } (PxS) - (M_p \times M_s)}{\sqrt{M_p^2 - (M_p)^2} \times \sqrt{M_s^2 - (M_s)^2}}$$

$$= \frac{1907.20 - 50 \times 38.177}{\sqrt{2599.82 - (50)^2} \times \sqrt{1548.71 - (38.177)^2}}$$

$$r = -0.0078$$

Correlation between Strong Vocational Interest Blank and the Purdue Rating Scale for Group II. In Table IV the ratings of the fifty-four administrators in Group II (10-19 raters in the system) on the Strong Vocational Interest Blank and the Purdue Rating Scale were correlated by using Hull's Arrangement as previously described.

The correlation coefficient ($r = +0.1878$) indicates the absence of any significant relationship between the ratings of the administrators in Group II on these rating scales. Table IV gives the rankings on the Strong Vocational Interest Blank and

the Purdue in terms of standard scores for each administrator of Group II.

In using Hull's Arrangement, the following cumulative totals were substituted. The computational data are not shown.

Hull's Arrangement:

$$r = \frac{M \text{ of } (A \times B) - (M_a \times M_b)}{\sqrt{M_a^2 - (M_a)^2} \times \sqrt{M_b^2 - (M_b)^2}}$$

$$M \text{ of } (A \times B) = M \text{ of } (P \times S) = 1844.44$$

$$M_a = M_p = 50.1$$

$$M_b = M_s = 36.46$$

$$M_a^2 = M_p^2 = 2572.26$$

$$M_b^2 = M_s^2 = 1474.72$$

$$r = \frac{M \text{ of } (P \times S) - (M_p \times M_s)}{\sqrt{M_p^2 - (M_p)^2} \times \sqrt{M_s^2 - (M_s)^2}}$$

$$r = \frac{1844.44 - (50.1 \times 36.46)}{\sqrt{2572.26 - (50.1)^2} \times \sqrt{1474.72 - (36.46)^2}}$$

$$r = .1878$$

TABLE IV
DISTRIBUTION OF RATINGS OF ADMINISTRATORS IN GROUP II AS MADE BY
TEACHERS USING THE PURDUE RATING SCALE AND THE ADMINISTRATORS
STRONG VOCATIONAL INTEREST INVENTORY SCORE

Administrator	Teacher Rating Purdue Scale	Standard Score Purdue Scale	Standard Score Strong Inventory
1	2	3	4
25	4.83	64	39
158	4.77	63	39
32	4.65	61	50
11	4.63	60	39
114	4.63	60	17
107	4.62	60	35
92	4.61	59	56
105	4.58	58	36
50	4.57	58	39
131	4.56	58	34
14	4.53	57	39
17	4.52	57	52
42	4.51	57	47
43	4.49	56	53
72	4.49	56	47
66	4.46	56	35
159	4.46	56	39
33	4.45	55	32
141	4.43	55	53
160	4.43	55	46
151	4.38	64	28
120	4.35	53	45
95	4.34	53	49
27	4.28	51	31
99	4.28	51	26
53	4.25	50	43
10	4.22	50	32
163	4.22	50	45
46	4.20	50	17
30	4.19	50	39
85	4.17	49	13
34	4.17	49	45
118	4.16	49	15

TABLE IV (continued)

Administrator	Teacher Rating Purdue Scale	Standard Score Purdue Scale	Standard Score Strong Inventory
1	2	3	4
55	4.14	48	34
129	4.14	48	34
89	4.14	48	49
36	4.13	48	22
1	4.11	47	30
137	4.09	47	15
60	4.06	46	26
20	4.03	46	34
146	4.01	45	15
13	3.98	44	41
162	3.93	43	52
96	3.90	42	25
130	3.86	41	45
101	3.85	41	40
136	3.83	40	50
108	3.77	39	23
94	3.76	39	34
41	3.60	35	34
153	3.59	34	41
62	3.52	33	28
98	3.47	32	40
N = 54	Mean 4.228	Mean 50.1	Mean 36.46

Correlation Between Strong Vocational Interest Blank and the Purdue Rating Scale for Group III. In Table V the ratings for the fifty-seven administrators in Group III (9 or less raters in the system) on the Purdue Rating Scale and the Strong Vocational Interest Blank were correlated by using Hull's Arrangement as previously described.

The coefficient ($r = -.0122$) indicates the absence of any significant relationship between the ratings of the administrators in Group III on these rating scales. Table V gives the rankings on the Strong Vocation Interest Blank and the Purdue in terms of standard scores for each administrator in Group III.

In using Hull's Arrangement, the following cumulative totals were substituted. The computational data are not shown.

Hull's Arrangement:

$$r = \frac{M \text{ of } (AxB) - (M_a \times M_b)}{\sqrt{M_a^2 - (M_a)^2} \times \sqrt{M_b^2 - (M_b)^2}}$$
$$M \text{ of } (AxB) = M \text{ of } (PxS) = 1688.03$$
$$M_a = M_p = 49.947$$
$$M_b = M_s = 33.89$$
$$M_a^2 = M_p^2 = 2583.10$$
$$M_b^2 = M_s^2 = 1311.54$$

TABLE V
DISTRIBUTION OF RATINGS OF ADMINISTRATORS IN GROUP III AS MADE BY
TEACHERS USING THE PURDUE RATING SCALE AND THE ADMINISTRATORS
STRONG VOCATIONAL INTEREST INVENTORY SCORE

Administrator	Teacher Rating Purdue Scale	Standard Score Purdue Scale	Standard Score Strong Inventory
1	2	3	4
58	4.82	64	43
109	4.79	64	35
47	4.79	64	10
5	4.70	61	50
115	4.62	59	39
26	4.62	59	37
73	4.60	59	31
4	4.59	58	37
127	4.58	58	15
22	4.56	57	23
68	4.55	57	39
126	4.54	57	35
65	4.52	56	34
110	4.51	56	46
166	4.51	56	47
81	4.50	56	15
40	4.50	56	34
112	4.49	56	37
119	4.49	56	43
117	4.48	55	32
148	4.48	55	43
104	4.45	55	31
29	4.45	55	41
82	4.42	54	23
21	4.39	54	47
124	4.37	53	23
156	4.37	53	34
142	4.35	52	41
71	4.32	52	34
35	4.27	50	40
86	4.26	50	37
152	4.25	50	38
75	4.24	49	53

TABLE V (continued)

Administrator	Teacher Rating Purdue Scale	Standard Score Purdue Scale	Standard Score Strong Inventory
1	2	3	4
90	4.23	49	41
12	4.21	49	46
83	4.19	48	36
143	4.18	48	23
8	4.17	47	43
74	4.17	47	17
63	4.16	47	44
157	4.15	47	27
28	4.13	46	26
124	4.12	46	23
2	4.08	45	25
44	4.02	43	34
18	4.02	43	17
3	4.02	43	28
140	4.02	43	34
165	4.02	43	43
45	4.00	42	18
133	3.96	41	25
145	3.91	40	40
13	3.80	38	36
16	3.71	36	37
6	3.62	34	19
111	3.37	27	22
100	2.69	9	61
N = 57	Mean 4.268	Mean 49.947	Mean 33.89

$$r = \frac{M \text{ of } (P \times S) - (M_p \times M_s)}{\sqrt{M_p^2 - (M_p)^2} \times \sqrt{M_s^2 - (M_s)^2}}$$

$$r = \frac{1688.03 - 49.947 \times 33.89}{\sqrt{2583.10 - (49.947)^2} \times \sqrt{1311.54 - (33.89)^2}}$$

$$r = -.0122$$

The results of these correlations indicate that no significant correlation between the intensity of interest in school administration as measured by the SVIB and effectiveness on the job, as measured by the Purdue Rating Scale was found in this study.

Correlation results of the entire group of 156 administrators' scores on the Purdue Rating Scale and the Strong Vocational Interest Blank. The ratings of the total one hundred fifty-six administrators in the previously described three groups on the Strong Vocational Interest Blank and the Purdue Rating Scale were then correlated using Hull's Arrangement.

The correlation coefficient ($r = .043$) indicates an absence of any significant relationship between the ratings of the administrators on these rating scales. Table VI gives the correlation results of the three groups, the number of cases in each group, and the correlation of the entire sample.

Hull's Arrangement:

$$r = \frac{M \text{ of } (A \times B) - (M_a \times M_b)}{\sqrt{M_a^2 - (M_a)^2} \times \sqrt{M_b^2 - (M_b)^2}}$$

$$M \text{ of } (A \times B) = M \text{ of } (P \times S) = 1805.40$$

$$M_a = M_p = 49.99$$

$$M_b = M_s = 36.02$$

$$M_a^2 = M_p^2 = 2584.17$$

$$M_b^2 = M_s^2 = 1436.45$$

$$r = \frac{M \text{ of } (P \times S) - (M_p \times M_s)}{\sqrt{M_p^2 - (M_p)^2} \times \sqrt{M_s^2 - (M_s)^2}}$$

$$r = \frac{1805.40 - 49.99 \times 36.02}{\sqrt{2584.17 - (49.99)^2} \times \sqrt{1436.45 - (36.02)^2}}$$

$$r = .043$$

TABLE VI
CORRELATION RESULTS OF THE ENTIRE GROUP OF 156
ADMINISTRATORS' SCORES ON THE PURDUE RATING
SCALE AND THE STRONG VOCATIONAL
INTEREST BLANK

Groups	Number of Cases	r
Group I	45	-0.0078
Group II	54	.1878
Group III	57	-0.0122
Total	156	.043

The absence of significant correlations between the ratings by administrators on the Purdue and the interest scores of administrators on the SVIB may have these implications:

1. The SVIB may measure the intensity of interests of the individual administrator -- interests that are common to school administrators -- but the interests in question may bear little relationship to effectiveness.

2. Effectiveness as measured by the Purdue Rating Scale may bear little relationship to criteria used to develop the SVIB.

3. The results of this study do not imply a relationship between effectiveness and interest as measured by the instruments employed.

Verification of these implications would await further study.

II. RELATIONSHIPS BETWEEN THE SVIB SCORES OF ADMINISTRATORS AND SELECTED BIOGRAPHICAL DATA

Does the school administrator's interest in school administration increase with age? With added years of educational experience? With increase in years of administrative experience? Do the administrators in larger school systems tend to have a greater interest in school administration than those in smaller school systems?

One of the purposes of this study, as stated previously, was to determine whether any significant relationships existed between selected biographical items of the administrators under study and the degree of interest in school administration as measured by the Strong Vocational Interest Blank. The biographical items selected were: (1) age of administrator; (2) total educational experience; (3) total administrative experience; (4) tenure of the administrator and (5) size of the school employing the administrator.

Again Hall's Arrangement as previously described on page was used.

Relationship between age and interest. From the data of Table VII:

$$M \text{ of } (AxS) = 1558.04$$

$$M_a = 43.20$$

$$M_s = 35.88$$

$$M_a^2 = 1946.40$$

$$M_s^2 = 1417.56$$

$$r = \frac{1558.04 - 43.20 \times 35.88}{\sqrt{1946.40 - (43.20)^2} \times \sqrt{1417.56 - (35.88)^2}}$$

$$r = 0.08$$

This correlation coefficient of 0.08 is not significant on the 0.10 level of confidence.² No significant relationship exists between the age of an administrator and his interest score on the SVIB.

Relationship between total experience and interest. Does the interest of a school administrator increase as his total experience in school administration increases?

From the data of Table VII:

$$M \text{ of } (Sxte) = 638.215$$

$$M_{te} = 17.68$$

$$M_s = 35.88$$

$$M_{te}^2 = 402.09$$

$$M_s^2 = 1417.56$$

²R. A. Fisher, Statistical Methods for Research Workers (New York: Hofner Publishing Company Inc., 1948), p. 209.

$$r = \frac{638.215 - 17.68 \times 35.88}{\sqrt{402.09 - (1768)^2} \times \sqrt{1417.56 - (35.88)^2}}$$
$$r = 0.035$$

This correlation coefficient of 0.035 is not significant on the 0.10 level of confidence. No significant relationship exists between the interest of a school administrator and his total experience in education.

Relationship between administrative experience and interest.

Does the interest of a school administrator increase as his administrative experience in school systems increases?

From the data of Table VII:

$$M \text{ of } (AExS) = 439.124 - 11.90 \times 35.88$$

$$M_{ae} = 11.90$$

$$M_s = 35.88$$

$$M_{ae}^2 = 229.29$$

$$M_s^2 = 1417.56$$

$$r = \frac{439.124 - 11.90 \times 35.88}{\sqrt{229.29 - (11.90)^2} \times \sqrt{1417.56 - (35.88)^2}}$$
$$r = 0.1137$$

This correlation coefficient of 0.1137 is not significant on the 0.10 level of confidence. No significant relationship exists between the interest of a school administrator and his administrative experience in school systems.

Relationship between tenure and interest of the school administrator. Do the administrators with longer tenure in the

TABLE VII
DISTRIBUTION BY AGE, TOTAL EXPERIENCE, ADMINISTRATIVE EXPERIENCE,
SIZE OF SCHOOL, AND THE ADMINISTRATOR'S SCORE ON THE
STRONG VOCATIONAL INTEREST INVENTORY

Adminis- trator	Age	Total Ex- perience	Administrative Experience	School Size *	Tenure Group Rank **	Standard Score Strong Inventory
1	2	3	4	5	6	7
5	33	7	2	28	1	50
6	30	1	1	7	1	19
7	41	12	5	120	1	28
9	32	6	1	118	1	37
12	23	4	1	9	1	46
13	39	19	19	31	1	36
16	46	20	1	20	1	37
25	45	15	6	68	1	39
34	38	13	6	73	1	45
35	29	4	1	8	1	40
41	36	3	3	85	1	34
44	34	4	3	27	1	34
49	51	29	23	139	1	31
52	38	12	7	138	1	36
65	47	24	13	2	1	34
71	39	15	6	32	1	34
73	35	3	1	4	1	31
75	29	6	1	12	1	53
81	32	4	1	18	1	15
83	29	4	1	21	1	36
86	38	8	2	5	1	37
92	35	9	1	55	1	56
96	31	5	1	94	1	25
100	44	19	11	49	1	61
115	32	6	1	44	1	39
116	37	14	11	108	1	31
117	27	2	1	11	1	32
119	39	13	9	39	1	43
120	52	29	20	76	1	45
123	24	2	1	47	1	18
131	37	9	7	110	1	34
140	33	6	1	42	1	34

TABLE VII (continued)

Adminis- trater	Age	Total Ex- perience	Administrative Experience	School Size	Tenure Group Rank	Standard Score Strong Inventory
1	2	3	4	5	6	7
142	37	14	6	13	1	41
148	34	4	1	1	1	43
151	45	11	11	74	1	28
152	33	8	4	59	1	38
158	30	5	3	66	1	39
166	54	24	20	3	1	47
1	57	31	29	95	2-4	30
2	49	26	25	16	2-4	25
10	32	5	2	57	2-4	32
14	40	19	7	67	2-4	39
15	49	17	13	63	2-4	41
20	47	24	5	86	2-4	34
21	39	9	5	22	2-4	47
22	33	4	2	43	2-4	23
27	34	12	11	84	2-4	31
28	38	15	6	33	2-4	26
29	35	10	6	19	2-4	41
31	33	6	2	113	2-4	34
32	32	8	3	56	2-4	50
36	39	17	14	107	2-4	22
40	32	4	2	26	2-4	34
43	35	7	7	60	2-4	53
46	45	8	3	64	2-4	17
48	52	27	23	129	2-4	50
50	32	5	4	61	2-4	39
51	42	20	17	145	2-4	50
56	46	16	12	126	2-4	44
57	46	25	21	122	2-4	44
58	45	25	18	34	2-4	43
60	46	22	13	105	2-4	26
62	51	30	19	89	2-4	28
63	32	8	3	15	2-4	44
66	44	22	3	80	2-4	35
67	55	32	26	133	2-4	35
68	41	15	9	17	2-4	39
69	38	15	7	112	2-4	49
72	38	11	3	58	2-4	47
76	45	15	12	115	2-4	40
87	52	27	13	127	2-4	36
101	49	24	24	93	2-4	40
105	41	20	3	90	2-4	36
108	40	18	5	54	2-4	23

TABLE VII (continued)

Adminis- trator	Age	Total Ex- perience	Administrative Experience	School Size	Tenure Group Rank	Standard Score Strong Inventory
1	2	3	4	5	6	7
110	36	14	8	29	2-4	46
112	37	8	7	81	2-4	37
113	47	23	7	143	2-4	22
114	46	18	4	62	2-4	17
121	51	25	15	124	2-4	50
128	41	15	7	23	2-4	35
129	39	17	6	96	2-4	34
136	51	27	20	83	2-4	50
137	50	21	7	91	2-4	15
146	46	21	8	87	2-4	15
149	44	22	10	121	2-4	40
153	33	9	5	69	2-4	41
156	43	16	7	35	2-4	34
157	40	16	10	53	2-4	27
90	51	25	12	40	2-4	41
95	43	14	6	78	2-4	49
97	50	14	14	137	2-4	47
98	28	4	4	37	2-4	40
99	47	25	7	116	2-4	26
163	37	11	7	77	2-4	45
3	44	22	15	52	5-9	28
17	41	17	12	97	5-9	52
18	45	27	11	24	5-9	17
23	45	21	21	128	5-9	41
24	51	26	23	111	5-9	41
26	41	19	7	38	5-9	37
30	36	8	7	104	5-9	39
38	48	30	21	144	5-9	28
42	37	12	9	92	5-9	47
45	60	38	28	102	5-9	18
47	35	8	7	45	5-9	10
53	46	21	13	98	5-9	43
54	48	26	25	135	5-9	39
55	31	8	5	79	5-9	34
59	46	25	22	150	5-9	30
61	65	35	29	148	5-9	25
74	40	14	8	10	5-9	17
80	61	34	29	146	5-9	44
82	47	27	5	30	5-9	23
85	41	20	6	101	5-9	13
88	55	31	29	147	5-9	47
89	40	23	12	75	5-9	49

TABLE VII (continued)

Adminis- trator	Age	Total Ex- perience	Administrative Experience	School Size	Tenure Group Rank	Standard Score Strong Inventory
1	2	3	4	5	6	7
104	45	14	14	51	5-9	31
109	44	12	11	14	5-9	35
111	43	10	7	6	5-9	22
118	48	19	13	99	5-9	15
122	46	26	26	117	5-9	21
125	50	27	25	141	5-9	24
126	48	17	7	114	5-9	35
130	51	30	23	106	5-9	45
133	56	25	21	100	5-9	25
134	40	20	16	149	5-9	39
139	49	23	19	119	5-9	47
141	41	9	5	72	5-9	53
143	41	9	7	70	5-9	23
150	48	22	16	123	5-9	53
159	39	17	14	71	5-9	39
160	37	16	13	109	5-9	48
161	32	27	26	152	5-9	36
162	43	15	10	47	5-9	52
165	43	17	10	49	5-9	43
4	42	16	10	63	5-9	37
8	38	18	13	36	10 & over	43
11	46	18	11	103	10 & over	39
33	65	38	34	82	10 & over	32
37	59	31	21	132	10 & over	54
145	49	27	18	41	10 & over	40
79	64	40	36	125	10 & over	44
84	53	26	23	134	10 & over	52
94	58	30	27	88	10 & over	34
164	45	22	16	130	10 & over	21
124	50	31	28	25	10 & over	23
103	66	40	40	142	10 & over	43
127	43	24	17	46	10 & over	15
135	53	29	29	136	10 & over	51
138	66	43	41	140	10 & over	39
144	48	25	21	131	10 & over	35
39	55	30	24	151	10 & over	47
102	55	34	32	153	10 & over	22
N = 153						
Means	43.20	17.66	11.90	76.98		35.68

* Rank order reversed for correlation.

** Tenure ranks given on basis of:

present administrative position tend to have a greater intensity of interest in administration than do administrators with lesser tenure?

From the data of Table VII:

Administrators were assigned tenure scale ratings as follows: (1) administrators with one year in the present position were assigned a scale rating of "1"; (2) administrators with two to four years in the present position were assigned a scale rating of "2"; (3) administrators with five to nine years in the present position were assigned a scale rating of "3"; and (4) administrators with ten or more years in the present position were assigned a scale rating of "4".

$$M \text{ of } (S \times T) = 80.78$$

$$M_t = 2.25$$

$$M_s = 35.88$$

$$M_t^2 = 5.06$$

$$M_s^2 = 1417.56$$

$$r = \frac{80.78 - (2.25 \times 35.88)}{\sqrt{5.06 - (2.25)^2} \times \sqrt{1417.56 - (35.88)^2}}$$

$$r = 0.0074$$

This correlation coefficient of 0.0074 indicates the absence of any significant relationship between the tenure of

-
- 1 year on present job = 1
 - 2-4 years on present job = 2
 - 5-9 years on present job = 3
 - 10 years and over on present job = 4

Cases 155, 107, and 98 were dropped from this correlation because of insufficient biographical information.

the administrators under study and their interest scores as measured by the SVIB.

Relationship between school size and interest of the school administrator. Do the administrators in larger school systems tend to have a greater interest in school administration than those in smaller school systems?

From the data of Table VII:

$$M \text{ of } (SS_{XS}) = 2818.026$$

$$M_{ss} = 76.98$$

$$M_s = 35.88$$

$$M_{ss}^2 = 7878.00$$

$$M_s^2 = 1417.56$$

$$r = \frac{2818.026 - 76.98 \times 35.88}{\sqrt{7878.00 - (76.98)^2} \times \sqrt{1417.56 - (35.88)^2}}$$

$$r = 0.111$$

This correlation coefficient of 0.111 is not significant on the 0.10 level of confidence. No significant relationship exists between the interest of the administrator and the size of the school he is in.

The school's size was determined by the number of pupils the administrator was responsible for. The schools ranged in size from 8,135 pupils to 35 pupils. The number of students in the average school was from 200 to 300 pupils.

CHAPTER V

SUMMARY AND CONCLUSIONS

This study sought to determine the relationship existing between the intensity of interest of school administrators in school administration in Montana as measured by the Strong Vocational Interest Blank and the following factors:

1. The effectiveness of school administrators as measured by raters on the Purdue Rating Scale.
2. The ages of school administrators at the time of the administering of these tests.
3. The total educational experience of the administrators.
4. The total school administration experience of the administrators.
5. The tenure in the present positions of the administrators.
6. The sizes of the schools in which these administrators served.

It was assumed that insight into the nature of these relationships would serve purposes in the training program of school administrators and would be valuable to administrators now actively engaged in school administration.

One hundred and fifty-six Montana school administrators participated in this study. This number was 76.6 percent of the total number (207) classified as the chief school administrator

in the school systems included in the study. These chief school administrators were rated on the Purdue Rating Scale by over 3,000 teachers in their school systems. As set forth previously in this study, the data used are partial data of a major study carried out by Dean Linus J. Carleton of the School of Education, Montana State University.

In determining the relationships as indicated above, correlation coefficients were determined by the use of Hull's Arrangement. Fisher's confidence levels were used in evaluating the significance of the correlation coefficients obtained.

The results of processing the data pertaining to the interest scores of the 156 school administrators as measured by the Strong Vocational Interest Blank and the effectiveness ratings as measured by the ratings of over 3,000 teachers on the Purdue Rating Scale were as follows:

1. The correlation coefficient ($r = -0.0078$) indicated an absence of any significant relationship between the interest scores as measured by the SVIB and the effectiveness ratings as measured by the Purdue Rating Scale for the forty-five school administrators in Group I who were rated by twenty or more teachers.

2. Likewise the correlation coefficient ($r = .1878$) indicated an absence of a significant relationship between the interest scores of administrators' and raters' scores as measured by the SVIB and the Purdue Rating Scale in Group II. The correlation coefficient was the highest of the group coefficients; it was not significant on the ten percent level of confidence. Group II administrators were rated by 10-19 teachers and were fifty-four in number.

3. Group III administrators were rated by nine or less raters in the system. Fifty-seven administrators comprised this group. Again the correlation coefficient ($r = -0.0123$) established on the same basis as for Groups I and II indicated the absence of a significant relationship.

4. Combining the 156 administrators into one group and again using the above basis of processing the data produced a correlation coefficient of 0.043, indicating the absence of a significant relationship between administrators' SVIB and Purdue Rating Scale scores.

As stated above, one of the purposes of this study was to determine whether any significant relationships existed between certain selected biographical items of the administrators under study and the degree of interest in school administration as measured by the Strong Vocational Interest Blank.

The application of Hull's Arrangement and Fisher's confidence levels to the interest data as measured by the SVIB and the selected biographical data of age, total educational experience, total administrative experience, tenure in present position, and the size of the school for the school administrators under study gave these results:

1. No significant relationship existed between the age of the administrator and his interest score as measured by the Strong Vocational Blank. The correlation coefficient of 0.08 was not significant on the 0.10 level of confidence.

2. No significant relationship existed between the interest of a school administrator in school administration as

measured by the SVIB and his total years of educational experience. The correlation coefficient was 0.035.

3. The correlation coefficient of 0.1137 for the relationship between interest as measured by the SVIB and total years in administration for all administrators was not significant on the 10 percent level of confidence.

4. No significant relationship existed between the tenure of school administrators and interest as measured by the SVIB. The correlation coefficient was 0.0074.

5. Likewise, no statistical significance on the 10 percent level of confidence was found for the relationship between school size and administrator interest ($r = 0.111$).

Observations. The absence of a significant relationship in this study between the intensity of interest in school administration of school administrators as measured by the Strong Vocational Interest Blank and such a factor as effectiveness ratings of administrators as measured by raters using the Purdue Rating Scale has these implications:

1. Interest of school administrators in school administration as measured by the Strong Vocational Interest Blank and effectiveness as measured by the Purdue Rating Scale had no significant relationship for the 156 Montana school administrators under study.

2. The SVIB may measure interests common to all school administrators, but interests that bear little relationship to the success criterion (the Purdue Rating Scale) used in this study.

3. Interest ratings of school superintendents as measured

by the SVIB should be correlated with other effectiveness criteria.

4. The determination of interest patterns of school administrators in the upper and lower quartiles as used in Group I, II, and III of this study might result in interest items which when used as an interest inventory would bear a significant relationship to effectiveness ratings as determined by the raters using the Purdue Rating Scale.

5. Though interest of school administrators in school administration as measured by the Strong Vocational Interest Blank had no significant relationship with the selected biographical data, the above observations might also be applied to the findings in this area of the study.

6. Relationships may exist between intensity of interest of school administrators in school administration and the factors considered in this study when other measurement means are employed. However, the data of this study indicate that no significant relationships exist between the intensity of interest of school administrators in school administration as measured by the Strong Vocational Interest Blank and the selected factors under consideration.

BIBLIOGRAPHY

BIBLIOGRAPHY

A. BOOKS

- Bingham, W. Van Dyke., and M. Freyd, Procedures in Employment Psychology. New York: A. W. Shaw Company, 1926. 269 pp.
- Buros, Oscar (ed.) The Nineteen Forty Mental Measurements Yearbook. Highland Park, New Jersey: The Mental Measurements Yearbook, 1941. 674 pp.
- Buros, Oscar (ed.). The Fourth Mental Measurements Yearbook. Highland Park, New Jersey: The Gryphon Press, 1953. 1163 pp.
- Fisher, R. A., Statistical Methods for Research Workers. New York: Hofner Publishing Company, Inc., 1948. 354 pp.
- Good, C. V., A. S. Barr, and D. E. Scates, The Methodology of Educational Research. New York: D. Appleton-Century, Inc., 1941. 890 pp.
- Hollingsworth, H. L., Judging Human Character. New York: D. Appleton and Company, 1925. 268 pp.
- Hull, C. L., Aptitude Testing. New York: World Book Company, 1928. 534 pp.
- Jones, Arthur M., Principles of Guidance. New York: McGraw-Hill Company, Inc., 1951. 630 pp.
- Monroe, Paul (ed.). Encyclopedia of Educational Research. New York: The Macmillan Company, 1950. 1520 pp.
- Strong, E. K. Jr., Vocational Interests of Men and Women. Stanford, California, Stanford University Press, 1943. 746 pp.
- Symonds, F. M., Diagnosing Personality and Conduct. New York: The Century Company, 1931. 602 pp.
- Terman, L. M., and C. C. Miles, Sex and Personality. New York: McGraw-Hill Book Company, 1936. 600 pp.

B. PERIODICAL ARTICLES

- Johnson, G., "Meditations on an Interest Test," Occupations, 30:357-68, February 1952.

Longstaff, Howard P., "Fakability of the Strong Interest Blank and the Kuder Preference Record." Journal of Applied Psychology, 32:360-69, August 1948.

Melby, Ernest O., "A Problem in the Training and Selection of the Superintendent of Schools," American School Board Journal, 79:38-39, November 1929.

Rothney, W. M. and Louis G. Schmidt, "Some Limitations of Interest Inventories," The Personnel and Guidance Journal, 33:199-204, December 1954.

Tyler, Leona E., "Relationships Between the Strong Vocational Interest Scores and Other Attitude and Personality Factors," Journal of Applied Psychology, 29:58-60, February 1945.

C. MANUALS

Hobson, Robert L., "Some Psychological Dimensions of Academic Administration," Further Studies in Attitudes, Series XVIII (Lafayette, Indiana: Purdue University, undated). 99 pp.

Strong, Edward K., Manual, Strong Vocational Interest Blank for Men. Stanford University Press, January, 1951. 16 pp.

D. MISCELLANEOUS

"American Association of School Administrators." The Superintendent and His Work. Final Report of the Committee on Certification of Superintendents of Schools. (Washington, D. C. : The Association, 1940), 230 pp.

Dictionary of Occupational Titles Part I Definitions of Titles. Prepared by the Job Analysis and Information Section, Division of Standards and Research, Washington: U. S. Government Printing Office, 1939.

Purdue Rating Scale. The Division of Educational Reference. Purdue University.

Strong Vocational Interest Inventory. Stanford University Press, Stanford, California. January 1951.

E. UNPUBLISHED MATERIALS

Abromowitz, Elias., "Correlation Analysis of the Differential Weighting Technique of the Strong Vocational Interest Blank," Unpublished Master's thesis, Columbia University, New York, New York, 1935. 65 pp.

Bradfield, Anne., "Predicting the Success in Training of Graduate Students in School Administration," Doctor's dissertation, Stanford University, Stanford, California, 1950. 253 pp.

APPENDICES

APPENDIX A

VOCATIONAL INTEREST BLANK FOR MEN (Revised)

By EDWARD K. STRONG, JR.
Professor of Psychology, Stanford University

Published by STANFORD UNIVERSITY PRESS, Stanford University, California

It is possible with a fair degree of accuracy to determine by this test whether one would like certain occupations or not. The test is not one of intelligence or school work. It measures the extent to which one's interests agree or disagree with those of successful men in a given occupation.

Your responses will, of course, be held strictly confidential.

Date.....

1. Name..... 2. Age..... 3. Sex.....

4. Address to which correspondence should be sent.....

If you are still attending school or expect to return to school, answer items 5-12; if you have left school, answer items 13-20.
Any additional remarks may be entered at 21.

5. Grade I am now in: Grammar School 1 2 3 4 5 6 7 8 High School 1 2 3 4 College 1 2 3 4 5 6 7
(PUT A CIRCLE AROUND APPROPRIATE GRADE)

6. School grade I expect to complete.....

7. School subjects I am now most interested in.....

8. School subjects I expect to specialize in later on.....

9. Occupation I am planning to enter..... 10. Sure of this..... Not sure.....

11. Jobs I have been employed at (e.g., clerical, retail selling, farming, giving number of months employed at each).....

12. Occupations I have formerly considered entering.....

To be Answered by Those Who Have Left School

13. Last grade you finished in school (e.g., Grammar 6th, High School 2nd, College 4th).....

14. What technical or business courses have you taken? (Underline those you finished).....

15. Occupation (e.g., Carpenter)..... 16. Years of experience in it.....

17. Just what do you do?.....

18. Why did you select the above occupation?.....

19. What occupations, other than your present one, have you at one time or another engaged in?.....

20. What occupations, if any, have you in mind entering? Why?

21. Remarks

Part I. Occupations. Indicate after each occupation listed below whether you would like that kind of work or not. Disregard considerations of salary, social standing, future advancement, etc. Consider only whether or not you would like to do what is involved in the occupation. You are not asked if you would take up the occupation permanently, but merely whether or not you would enjoy that kind of work, regardless of any necessary skills, abilities, or training which you may or may not possess.

Draw a circle around L if you like that kind of work

Draw a circle around I if you are indifferent to that kind of work

Draw a circle around D if you dislike that kind of work

Work rapidly. Your first impressions are desired here. Answer all the items. Many of the seemingly trivial and irrelevant items are very useful in diagnosing your real attitude.

1 Actor (not movie)	L	I	D	46 Jeweler	L	I	D
2 Advertiser	L	I	D	47 Judge	L	I	D
3 Architect	L	I	D	48 Labor Arbitrator	L	I	D
4 Army Officer	L	I	D	49 Laboratory Technician	L	I	D
5 Artist	L	I	D	50 Landscape Gardener	L	I	D
6 Astronomer	L	I	D	51 Lawyer, Criminal	L	I	D
7 Athletic Director	L	I	D	52 Lawyer, Corporation	L	I	D
8 Auctioneer	L	I	D	53 Librarian	L	I	D
9 Author of novel	L	I	D	54 Life Insurance Salesman	L	I	D
10 Author of technical book	L	I	D	55 Locomotive Engineer	L	I	D
11 Auto Salesman	L	I	D	56 Machinist	L	I	D
12 Auto Racer	L	I	D	57 Magazine Writer	L	I	D
13 Auto Repairman	L	I	D	58 Manufacturer	L	I	D
14 Aviator	L	I	D	59 Marine Engineer	L	I	D
15 Bank Teller	L	I	D	60 Mechanical Engineer	L	I	D
16 Bookkeeper	L	I	D	61 Mining Superintendent	L	I	D
17 Building Contractor	L	I	D	62 Musician	L	I	D
18 Buyer of merchandise	L	I	D	63 Music Teacher	L	I	D
19 Carpenter	L	I	D	64 Office Clerk	L	I	D
20 Cartoonist	L	I	D	65 Office Manager	L	I	D
21 Cashier in bank	L	I	D	66 Orchestra Conductor	L	I	D
22 Certified Public Accountant	L	I	D	67 Pharmacist	L	I	D
23 Chemist	L	I	D	68 Photo Engraver	L	I	D
24 Civil Engineer	L	I	D	69 Physician	L	I	D
25 Civil Service Employee	L	I	D	70 Playground Director	L	I	D
26 Clergyman	L	I	D	71 Poet	L	I	D
27 College Professor	L	I	D	72 Politician	L	I	D
28 Consul	L	I	D	73 Printer	L	I	D
29 Dentist	L	I	D	74 Private Secretary	L	I	D
30 Draftsman	L	I	D	75 Railway Conductor	L	I	D
31 Editor	L	I	D	76 Rancher	L	I	D
32 Electrical Engineer	L	I	D	77 Real Estate Salesman	L	I	D
33 Employment Manager	L	I	D	78 Reporter, general	L	I	D
34 Explorer	L	I	D	79 Reporter, sporting page	L	I	D
35 Factory Manager	L	I	D	80 Retailer	L	I	D
36 Factory Worker	L	I	D	81 Sales Manager	L	I	D
37 Farmer	L	I	D	82 School Teacher	L	I	D
38 Floorwalker	L	I	D	83 Scientific Research Worker	L	I	D
39 Florist	L	I	D	84 Sculptor	L	I	D
40 Foreign Correspondent	L	I	D	85 Secretary, Chamber of Commerce	L	I	D
41 Governor of a State	L	I	D	86 Secret Service Man	L	I	D
42 Hotel Keeper or Manager	L	I	D	87 Ship Officer	L	I	D
43 Interior Decorator	L	I	D	88 Shop Foreman	L	I	D
44 Interpreter	L	I	D	89 Social Worker	L	I	D
45 Inventor	L	I	D	90 Specialty Salesman	L	I	D

Part I. Occupations, continued.

91	Statistician	L	I	D
92	Stock Broker	L	I	D
93	Surgeon	L	I	D
94	Toolmaker	L	I	D
95	Traveling Salesman	L	I	D
96	Typist	L	I	D
97	Undertaker	L	I	D
98	Watchmaker	L	I	D
99	Wholesaler	L	I	D
100	Worker in Y.M.C.A., K. of C., etc...	L	I	D

Part II. School Subjects. Indicate as in Part I your interest when in school.

101	Algebra	L	I	D
102	Agriculture	L	I	D
103	Arithmetic	L	I	D
104	Art	L	I	D
105	Bookkeeping	L	I	D
106	Botany	L	I	D
107	Calculus	L	I	D
108	Chemistry	L	I	D
109	Civics	L	I	D
110	Dramatics	L	I	D
111	Economics	L	I	D
112	English Composition	L	I	D
113	Geography	L	I	D
114	Geology	L	I	D
115	Geometry	L	I	D
116	History	L	I	D
117	Languages, ancient	L	I	D
118	Languages, modern	L	I	D
119	Literature	L	I	D
120	Mathematics	L	I	D
121	Manual Training	L	I	D
122	Mechanical Drawing	L	I	D
123	Military Drill	L	I	D
124	Music	L	I	D
125	Nature Study	L	I	D
126	Philosophy	L	I	D
127	Physical Training	L	I	D
128	Physics	L	I	D
129	Psychology	L	I	D
130	Physiology	L	I	D
131	Public Speaking	L	I	D
132	Shop work	L	I	D
133	Sociology	L	I	D
134	Spelling	L	I	D
135	Typewriting	L	I	D
136	Zoölogy	L	I	D

Part III. Amusements. Indicate in the same manner as in Part I whether you like the following or not. If in doubt, consider your most frequent attitude. *Work rapidly.* Do not think over various possibilities. Record your first impression.

137	Golf	L	I	D
138	Fishing	L	I	D
139	Hunting	L	I	D
140	Tennis	L	I	D
141	Driving an automobile	L	I	D
142	Taking long walks	L	I	D
143	Boxing	L	I	D
144	Chess	L	I	D
145	Poker	L	I	D
146	Bridge	L	I	D
147	Observing birds (nature study)	L	I	D
148	Solving mechanical puzzles	L	I	D
149	Performing sleight-of-hand tricks	L	I	D
150	Collecting postage stamps	L	I	D
151	Drilling in a company	L	I	D
152	Chopping wood	L	I	D
153	Amusement parks	L	I	D
154	Picnics	L	I	D
155	Excursions	L	I	D
156	Smokers	L	I	D
157	"Rough house" initiations	L	I	D
158	Conventions	L	I	D
159	Full-dress affairs	L	I	D
160	Auctions	L	I	D
161	Fortune tellers	L	I	D
162	Animal zoos	L	I	D
163	Art galleries	L	I	D
164	Museums	L	I	D
165	Vaudeville	L	I	D
166	Musical comedy	L	I	D
167	Symphony concerts	L	I	D
168	Pet canaries	L	I	D
169	Pet monkeys	L	I	D
170	Snakes	L	I	D
171	Sporting pages	L	I	D
172	Poetry	L	I	D
173	Detective stories	L	I	D
174	"Time"	L	I	D
175	"Judge"	L	I	D
176	"New Republic"	L	I	D
177	"System"	L	I	D
178	"National Geographic Magazine"	L	I	D
179	"American Magazine"	L	I	D
180	"Popular Mechanics"	L	I	D
181	"Atlantic Monthly"	L	I	D
182	Educational movies	L	I	D
183	Travel movies	L	I	D
184	Social problem movies	L	I	D
185	Making a radio set	L	I	D

Part IV. Activities. Indicate your interests as in Part I.

186 Repairing a clock.....	L	I	D
187 Adjusting a carburetor.....	L	I	D
188 Repairing electrical wiring.....	L	I	D
189 Cabinetmaking	L	I	D
190 Operating machinery	L	I	D
191 Handling horses	L	I	D
192 Giving "first aid" assistance.....	L	I	D
193 Raising flowers and vegetables.....	L	I	D
194 Decorating a room with flowers.....	L	I	D
195 Arguments	L	I	D
196 Interviewing men for a job.....	L	I	D
197 Interviewing prospects in selling...	L	I	D
198 Interviewing clients	L	I	D
199 Making a speech.....	L	I	D
200 Organizing a play	L	I	D
201 Opening conversation with a stranger	L	I	D
202 Teaching children	L	I	D
203 Teaching adults	L	I	D
204 Calling friends by nicknames.....	L	I	D
205 Being called by a nickname.....	L	I	D
206 Meeting and directing people.....	L	I	D
207 Taking responsibility	L	I	D
208 Meeting new situations.....	L	I	D
209 Adjusting difficulties of others.....	L	I	D
210 Drilling soldiers	L	I	D
211 Pursuing bandits in sheriff's posse..	L	I	D
212 Doing research work.....	L	I	D
213 Acting as yell-leader.....	L	I	D
214 Writing personal letters.....	L	I	D
215 Writing reports	L	I	D
216 Entertaining others	L	I	D
217 Bargaining ("swapping")	L	I	D
218 Looking at shop windows.....	L	I	D
219 Buying merchandise for a store.....	L	I	D
220 Displaying merchandise in a store..	L	I	D
221 Expressing judgments publicly regardless of criticism.....	L	I	D
222 Being pitted against another as in a political or athletic race.....	L	I	D
223 Methodical work	L	I	D
224 Regular hours for work.....	L	I	D
225 Continually changing activities.....	L	I	D
226 Developing business systems.....	L	I	D
227 Saving money	L	I	D
228 Contributing to charities.....	L	I	D
229 Raising money for a charity.....	L	I	D
230 Living in the city.....	L	I	D
231 Climbing along edge of precipice...	L	I	D
232 Looking at a collection of rare laces.	L	I	D
233 Looking at a collection of antique furniture	L	I	D

Part V. Peculiarities of People. Record your first impression. Do not think of various possibilities or of exceptional cases. "Let yourself go" and record the feeling that comes to mind as you read the item.

234 Progressive people	L	I	D
235 Conservative people	L	I	D
236 Energetic people	L	I	D
237 Absent-minded people	L	I	D
238 People who borrow things.....	L	I	D
239 Quick-tempered people	L	I	D
240 Optimists	L	I	D
241 Pessimists	L	I	D
242 People who are natural leaders.....	L	I	D
243 People who assume leadership.....	L	I	D
244 People easily led.....	L	I	D
245 People who have made fortunes in business	L	I	D
246 Emotional people	L	I	D
247 Thrifty people	L	I	D
248 Spendthrifts	L	I	D
249 Talkative people	L	I	D
250 Religious people	L	I	D
251 Irreligious people	L	I	D
252 People who have done you favors...	L	I	D
253 People who get rattled easily.....	L	I	D
254 Gruff men	L	I	D
255 Foreigners	L	I	D
256 Sick people	L	I	D
257 Nervous people	L	I	D
258 Very old people.....	L	I	D
259 Cripples	L	I	D
260 Side-show freaks	L	I	D
261 People with gold teeth.....	L	I	D
262 People with protruding jaws.....	L	I	D
263 People with hooked noses.....	L	I	D
264 Blind people	L	I	D
265 Deaf mutes	L	I	D
266 Self-conscious people	L	I	D
267 People who always agree with you..	L	I	D
268 People who talk very loudly.....	L	I	D
269 People who talk very slowly.....	L	I	D
270 People who talk about themselves...	L	I	D
271 Fashionably dressed people.....	L	I	D
272 Carelessly dressed people.....	L	I	D
273 People who don't believe in evolution	L	I	D
274 Socialists	L	I	D
275 Bolsheviks	L	I	D
276 Independents in politics.....	L	I	D
277 Men who chew tobacco.....	L	I	D
278 Men who use perfume.....	L	I	D
279 People who chew gum.....	L	I	D
280 Athletic men	L	I	D

Part VI. Order of Preference of Activities. Indicate which three of the following ten activities you would enjoy most by checking (✓) opposite them in column 1; also indicate which three you would enjoy least by checking opposite them in column 3. Check the remaining four activities in column 2.

- | | 1 | 2 | 3 | |
|-----|-----|-----|-----|--|
| 281 | () | () | () | Develop the theory of operation of a new machine, e.g., auto |
| 282 | () | () | () | Operate (manipulate) the new machine |
| 283 | () | () | () | Discover an improvement in the design of the machine |
| 284 | () | () | () | Determine the cost of operation of the machine |
| 285 | () | () | () | Supervise the manufacture of the machine |
| 286 | () | () | () | Create a new artistic effect, i.e., improve the beauty of the auto |
| 287 | () | () | () | Sell the machine |
| 288 | () | () | () | Prepare the advertising for the machine |
| 289 | () | () | () | Teach others the use of the machine |
| 290 | () | () | () | Interest the public in the machine through public addresses |

Indicate in the same way what you consider are the three most important factors affecting your work; also the three least important factors. Check the remaining four items in column 2. Be sure you have marked three items under 1, three items under 3, and four items under 2.

- | | 1 | 2 | 3 | |
|-----|-----|-----|-----|---|
| 291 | () | () | () | Salary received for work |
| 292 | () | () | () | Steadiness and permanence of work |
| 293 | () | () | () | Opportunity for promotion |
| 294 | () | () | () | Courteous treatment from superiors |
| 295 | () | () | () | Opportunity to make use of all one's knowledge and experience |
| 296 | () | () | () | Opportunity to ask questions and to consult about difficulties |
| 297 | () | () | () | Opportunity to understand just how one's superior expects work to be done |
| 298 | () | () | () | Certainty one's work will be judged by fair standards |
| 299 | () | () | () | Freedom in working out one's own methods of doing the work |
| 300 | () | () | () | Co-workers—congenial, competent, and adequate in number |

Indicate in the same way the three men you would most like to have been; also the three you would least like to have been. Check the remaining four men in column 2.

- | | 1 | 2 | 3 | |
|-----|-----|-----|-----|--------------------------------|
| 301 | () | () | () | Luther Burbank, "plant wizard" |
| 302 | () | () | () | Enrico Caruso, singer |
| 303 | () | () | () | Thomas A. Edison, inventor |
| 304 | () | () | () | Henry Ford, manufacturer |
| 305 | () | () | () | Charles Dana Gibson, artist |
| 306 | () | () | () | J. P. Morgan, financier |
| 307 | () | () | () | J. J. Pershing, soldier |
| 308 | () | () | () | William H. Taft, jurist |
| 309 | () | () | () | Booth Tarkington, author |
| 310 | () | () | () | John Wanamaker, merchant |

Indicate in the same way the three positions you would most prefer to hold in club or society; also the three you least prefer to hold. Check the remaining four in column 2.

- | | 1 | 2 | 3 | |
|-----|-----|-----|-----|-----------------------------------|
| 311 | () | () | () | President of a Society or Club |
| 312 | () | () | () | Secretary of a Society or Club |
| 313 | () | () | () | Treasurer of a Society or Club |
| 314 | () | () | () | Member of a Society or Club |
| 315 | () | () | () | Chairman, Arrangement Committee |
| 316 | () | () | () | Chairman, Educational Committee |
| 317 | () | () | () | Chairman, Entertainment Committee |
| 318 | () | () | () | Chairman, Membership Committee |
| 319 | () | () | () | Chairman, Program Committee |
| 320 | () | () | () | Chairman, Publicity Committee |

Part VII. Comparison of Interest between Two Items. Indicate your choice of the following pairs by checking (✓) in the first space if you prefer the item to the left, in the second space if you like both equally well, and in the third space if you prefer the item to the right. Assume other things are equal except the two items to be compared.

<i>Work rapidly.</i>	1	2	3	
321 Street-car motorman	()	()	()	Street-car conductor
322 Policeman	()	()	()	Fireman (fights fire)
323 Chauffeur	()	()	()	Chef
324 Head waiter	()	()	()	Lighthouse tender
325 House to house canvassing.....	()	()	()	Retail selling
326 House to house canvassing.....	()	()	()	Gardening
327 Repair auto	()	()	()	Drive auto
328 Develop plans	()	()	()	Execute plans
329 Do a job yourself.....	()	()	()	Delegate job to another
330 Persuade others	()	()	()	Order others
331 Deal with things.....	()	()	()	Deal with people
332 Plan for immediate future.....	()	()	()	Plan for five years ahead
333 Activity which produces tangible returns.....	()	()	()	Activity which is enjoyed for its own sake
334 Taking a chance.....	()	()	()	Playing safe
335 Definite salary	()	()	()	Commission on what is done
336 Work for yourself.....	()	()	()	Carry out program of superior who is respected
337 Work which interests you with modest income	()	()	()	Work which does not interest you with large income
338 Work in a large corporation with little chance of becoming president until age of 55.....	()	()	()	Work for self in small business
339 Selling article, quoted 10% below competitor..	()	()	()	Selling article, quoted 10% above competitor
340 Small pay, large opportunities to learn during next 5 years.....	()	()	()	Good pay, little opportunity to learn during next 5 years
341 Work involving few details.....	()	()	()	Work involving many details
342 Outside work	()	()	()	Inside work
343 Change from place to place.....	()	()	()	Working in one location
344 Great variety of work.....	()	()	()	Similarity in work
345 Physical activity	()	()	()	Mental activity
346 Emphasis upon quality of work.....	()	()	()	Emphasis upon quantity of work
347 Technical responsibility (head of a department of 25 people engaged in technical, research work)	()	()	()	Supervisory responsibility (head of a department of 300 people engaged in typical business operation)
348 Present a report in writing.....	()	()	()	Present a report verbally
349 Listening to a story.....	()	()	()	Telling a story
350 Playing baseball	()	()	()	Watching baseball
351 Amusement where there is a crowd.....	()	()	()	Amusement alone or with one or two others
352 Nights spent at home.....	()	()	()	Nights away from home
353 Reading a book.....	()	()	()	Going to movies
354 Belonging to many societies.....	()	()	()	Belonging to few societies
355 Few intimate friends.....	()	()	()	Many acquaintances
356 Many women friends.....	()	()	()	Few women friends
357 Fat men	()	()	()	Thin men
358 Tall men	()	()	()	Short men
359 Jealous people	()	()	()	Conceited people
360 Jealous people	()	()	()	Spendthrifts

Part VIII. Rating of Present Abilities and Characteristics. Indicate below what kind of a person you are right now and what you have done. Check in the *first* column ("Yes") if the item really describes you, in the *third* column ("No") if the item does not describe you, and in the *second* column (?) if you are not sure. (Be frank in pointing out your weak points, for selection of a vocation must be made in terms of them as well as your strong points.)

	YES	?	NO
361 Usually start activities of my group.....	()	()	()
362 Usually drive myself steadily (do not work by fits and starts)	()	()	()
363 Win friends easily.....	()	()	()
364 Usually get other people to do what I want done.....	()	()	()
365 Usually liven up the group on a dull day.....	()	()	()
366 Am quite sure of myself.....	()	()	()
367 Accept just criticism without getting sore.....	()	()	()
368 Have mechanical ingenuity (inventiveness).....	()	()	()
369 Have more than my share of novel ideas.....	()	()	()
370 Can carry out plans assigned by other people.....	()	()	()
371 Can discriminate between more or less important matters.....	()	()	()
372 Am inclined to keep silent (reticent) in confidential and semi-confidential affairs.....	()	()	()
373 Am always on time with my work.....	()	()	()
374 Remember faces, names, and incidents better than the average person	()	()	()
375 Can correct others without giving offense.....	()	()	()
376 Able to meet emergencies quickly and effectively.....	()	()	()
377 Get "rattled" easily.....	()	()	()
378 Can write a concise, well-organized report.....	()	()	()
379 Have good judgment in appraising values.....	()	()	()
380 Plan my work in detail.....	()	()	()
381 Follow up subordinates effectively.....	()	()	()
382 Put drive into the organization.....	()	()	()
383 Stimulate the ambition of my associates.....	()	()	()
384 Show firmness without being easy.....	()	()	()
385 Win confidence and loyalty.....	()	()	()
386 Smooth out tangles and disagreements between people.....	()	()	()
387 Am approachable	()	()	()
388 Discuss my ideals with others.....	()	()	()

Check (✓) in the first, second, or third column at the right according as the first, second, or third statement in each item below applies to you.

	(1st)	(2nd)	(3rd)
389 (1) Feelings easily hurt (2) Feelings hurt sometimes (3) Feelings rarely hurt.....	()	()	()
390 (1) Usually ignore the feelings of others (2) Consider them sometimes (3) Carefully consider them..	()	()	()
391 (1) Loan money to acquaintances (2) Loan only to certain people (3) Rarely loan money.....	()	()	()
392 (1) Rebel inwardly at orders from another, obey when necessary (2) Carry out instructions with little or no feeling (3) Enter into situation and enthusiastically carry out program	()	()	()
393 (1) When caught in a mistake usually make excuses (2) Seldom make excuses (3) Practically never make excuses	()	()	()
394 (1) Best-liked friends are superior to me in ability (2) Equal in ability (3) Inferior in ability.....	()	()	()
395 (1) Handle complaints without getting irritated (2) Become annoyed at times (3) Lose my temper at times..	()	()	()
396 (1) Borrow frequently (for personal use) (2) Borrow occasionally (3) Practically never borrow..	()	()	()
397 (1) Tell jokes well (2) Seldom tell jokes (3) Practically never tell jokes () () ()	()	()	()
398 (1) My advice sought by many (2) Sought by few (3) Practically never asked... () () ()	()	()	()
399 (1) Frequently make wagers (2) Occasionally make wagers (3) Never make wagers..... () () ()	()	()	()
400 (1) Worry considerably about mistakes (2) Worry very little (3) Do not worry..... () () ()	()	()	()


Be Sure You Have Not Omitted Any Part: Note Particularly the Second Columns on Pages 2, 3, and 4.

Rating										
Occupation	Carpenter	Printer	Mathematics- Science Teacher	Policeman	Forest Service	Y.M.O.A. Physical Director	Personnel	Y.M.O.A. General Secretary	Social Science Teacher	City School Superin- tendent
Raw Score										
Standard Score										
Rating										
Occupation	Minister	Musician	Certified Public Accountant	Accountant	Office Worker	Purchasing Agent	Banker	Sales Manager	Real Estate Salesman	Life Insurance Salesman
Raw Score										
Standard Score										
Rating										
Occupation	Advertising Man	Lawyer	Author- Journalist	President, M'g Concern	Occupational Level	Masculinity- Femininity	Interest Maturity	Aviator		
Raw Score										
Standard Score										
Rating										
Occupation										
Raw Score										
Standard Score										
Rating										

APPENDIX B

MALE
 LAST NAME (PLEASE PRINT)
 FIRST
 SCHOOL OR AGENCY
 SCHOOL YR
 AGE
 DATE
 ADDRESS
 OCCUPATION
 NUMBER

L	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30										
D	PART I																																							
L	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60										
D																																								
L	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90										
D																																								
L	91	92	93	94	95	96	97	98	99	100	101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120										
D	PART II																																							
L	121	122	123	124	125	126	127	128	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143	144	145	146	147	148	149	150										
D	PART III																																							
L	151	152	153	154	155	156	157	158	159	160	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175	176	177	178	179	180										
D																																								
L	181	182	183	184	185	186	187	188	189	190	191	192	193	194	195	196	197	198	199	200	201	202	203	204	205	206	207	208	209	210										
D	PART IV																																							
L	211	212	213	214	215	216	217	218	219	220	221	222	223	224	225	226	227	228	229	230	231	232	233	234	235	236	237	238	239	240										
D	PART V																																							
L	241	242	243	244	245	246	247	248	249	250	251	252	253	254	255	256	257	258	259	260	261	262	263	264	265	266	267	268	269	270										
D																																								
L	271	272	273	274	275	276	277	278	279	280	281	282	283	284	285	286	287	288	289	290	291	292	293	294	295	296	297	298	299	300										
D	PART VI																																							
MOST	MARK 3 MOST LIKE TO HAVE BEEN HERE										MARK 3 YOU ENJOY MOST HERE										MARK 3 MOST IMPORTANT HERE																			
EQUAL	MARK REMAINING 4 HERE										MARK REMAINING 4 HERE										MARK REMAINING 4 HERE																			
LEAST	MARK 3 LEAST LIKE TO HAVE BEEN HERE										MARK 3 YOU ENJOY LEAST HERE										MARK 3 LEAST IMPORTANT HERE																			
LEFT ITEM	PART VII																																							
EQUAL																																								
RIGHT ITEM																																								
YES																																								
?																																								
NO																																								
1ST	391	392	393	394	395	396	397	398	399	400																					FORM ME									
2ND																																								
3RD																																								

See other side for instructions
 Make sure your marks are carefully made—thus 
 Go from **Corner to corner** of the square, make **heavy glossy black** lead pencil lines
 It is important that you keep your pencil sharp & use enough pressure to make **heavy glossy black** lines
 Be sure each vertical group of 3 squares has **one** and **only one** mark.

1. All answers are to be marked on this answer sheet—do not write in the test booklet.
2. Answer spaces, three squares in vertical position, are numbered to correspond to the numbering of the items in the test. You are to decide how you wish to answer the question, then make a mark in the answer space that corresponds to this answer:

Example: 1. Actor (not movie).

Mark the upper square (the row marked "L") of number 1 if you *like* that kind of work.

L	<input checked="" type="checkbox"/>
I	<input type="checkbox"/>
D	<input type="checkbox"/>


Mark the middle square (the row marked "I") of number 1 if you are *indifferent* to that kind of work.

L	<input type="checkbox"/>
I	<input checked="" type="checkbox"/>
D	<input type="checkbox"/>


Mark the lower square (the row marked "D") of number 1 if you *dislike* that kind of work.

L	<input type="checkbox"/>
I	<input type="checkbox"/>
D	<input checked="" type="checkbox"/>

3. Use a soft lead pencil, No. 2, No. 1 or electrographic, to mark the square you select, making broad, **heavy glossy black** lines from **Corner to corner** of

the square—thus 

Erase your first mark if you change your mind and mark another square.

Make sure your marks are carefully made—thus 

Go from **Corner to corner** of the square; make **heavy glossy black** lead pencil lines.

It is important that you keep your pencil sharp & use enough pressure to make **heavy glossy black** lines.

Be sure each vertical group of 3 squares has **one** and **only one mark**.

4. Be sure to read the instructions in the booklet as they vary from part to part.

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APPENDIX C

APPENDIX D

6 - How were your marks in high school?

- a. _____ exceptionally good
- b. _____ above average
- c. _____ about average
- d. _____ below average
- e. _____ poor

7 - As you remember it, how did you like high school?

- a. _____ enjoyed it very much
- b. _____ liked it fairly well
- c. _____ tolerated it
- d. _____ disliked it

8 - With whom did you get along better in high school:

- a. _____ teachers
- b. _____ students

9 - In high school I (check one or more):

- a. _____ held a class or school office
- b. _____ played on a varsity team
- c. _____ was in band, orchestra, or glee club
- d. _____ held an office in a club or society
- e. _____ was on a debating team
- f. _____ was in a school play
- g. _____ was editor of a school publication
- h. _____ wrote for school publications
- i. _____ was in other extra curricular activities
- j. _____ was in no extra curricular activities

10 - What part time jobs did you have before you graduated from high school and what was your reaction (enjoyed it, tolerated it, disliked it) to each:

Kind of Job	Age at the Time	Your Reaction to it
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

(Use back side of sheet if necessary.)

V - SCHOOLING (college)

1 - Schools above high school you attended (College, university, trade school):

(Over for answers to V, 1)

Name of School	Location	Dates (from - to)	Degree Earned
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

2 - In general, how were your undergraduate grades?

- a. _____ superior
b. _____ above average
c. _____ average
d. _____ below average

3 - In general how were your graduate grades?

- a. _____ superior
b. _____ average (for graduates)
c. _____ below average

4 - In general how did you like college?

- Undergraduate: a. _____ very much Graduate: a. _____ very much
b. _____ fairly well b. _____ fairly well
c. _____ tolerated it c. _____ tolerated it
d. _____ disliked it d. _____ disliked it

5 - How was your undergraduate program financed (check one or more)?

- a. _____ money from home (gift)
b. _____ money from home (loan)
c. _____ worked summers
d. _____ worked while going to school
e. _____ had a scholarship some years
f. _____ other (specify)

6 - With whom did you get along better as an undergraduate?

- a. _____ students
b. _____ teachers

7 - With whom did you get along better as a graduate?

- a. _____ students
b. _____ teachers

13 - Following are a number of courses often given to prepare school administrators for their work. For each course, check under the appropriate columns:

Course	Have had the course in college	Learned about this through my reading	Learned about this by experience as an administrator	Learned about this through observation of an administrator
a. General School Administration	_____	_____	_____	_____
b. Secondary School Administration	_____	_____	_____	_____
c. Elementary School Administration	_____	_____	_____	_____
d. Elementary Curriculum	_____	_____	_____	_____
e. Secondary Curriculum	_____	_____	_____	_____
f. Supervision of Instruction	_____	_____	_____	_____
g. School Finance	_____	_____	_____	_____
h. School Buildings	_____	_____	_____	_____
i. Personnel Administration	_____	_____	_____	_____
j. School Law	_____	_____	_____	_____
k. Philosophy of Education	_____	_____	_____	_____
l. History of Education	_____	_____	_____	_____
m. Research Procedures	_____	_____	_____	_____
n. Guidance & Counseling	_____	_____	_____	_____
o. Tests & Measurements	_____	_____	_____	_____

14 - Underline each course you consider unnecessary for the training of a school superintendent (in charge of grades 1-12).

VI - EXPERIENCE IN EDUCATION

1 - List the teaching position you have held (start with last teaching position held and work backward) (in indicating degree of job satisfaction use: very much, pretty well, tolerated it, disliked it)

Years Held	Location	Grades Taught	Subjects Taught	How liked job?
Example: 40-43	Great Bridges, Mont.	9-12	Hist. Coach	very much

(Over for answers to VI, 1)

APPENDIX E

To Teachers, Principals, Supervisors and other Professional Employees:

The chief administrator in your school system is co-operating in the Montana Study of School Administrators. One part of this study involves the rating of each school administrator by the professional personnel who work under his leadership. You will note that this is being carried on in a way which keeps each rater completely anonymous. If you are willing to help in this project, please do as follows:

1. Place an "X" in the parentheses preceding the statement below which best describes the basis on which your rating of this administrator is made.
 - () My judgments are based both on knowing this administrator well as a person and observing him frequently as he carries on his work in the school system and community.
 - () My judgments are based on frequent observations of this administrator as he carries on his work though I do not know him well as a person.
 - () My judgments are based on knowing this administrator well as a person, though I observe his work only infrequently.
 - () My judgments are based largely on hearsay, since I see this administrator only infrequently and do not know him well as a person.
2. Read the directions at the top of the attached rating scale; then, rate your administrator on each of the 36 items. Consider each item with care; then rate him as accurately as you can.
3. When you have finished, fold the two sheets, place them in the envelope provided, and seal it. Unless otherwise directed, please mail the envelope.

Linus J. Carleton

THE PURDUE RATING SCALE FOR ADMINISTRATORS AND EXECUTIVES**

H. H. Remmers and R. L. Hobson

Instructions: You are asked to rate your administrator on the following scale. Your ratings will be anonymous—the administrator will never know how you personally appraised him; he will receive only the average responses of all those who rate him. Read the items carefully. Decide which of the five possibilities best describes your administrator. Place the number corresponding to your choice in the blank at the right.

Name of person being rated: _____

FARNSWORTH

I. INTELLECTUAL BALANCE

- 1. Possesses general knowledge:
(5) Very broad (4) Fairly broad (3) Limited (2) Very limited (1) Lacking 1
- 2. Possesses specific knowledge in his own field:
(5) Up-to-date (4) Good (3) Fair (2) Poor (1) Lacking 2

II. EMOTIONAL BALANCE

- 3. Is emotionally poised and calm:
(5) Always (4) Usually (3) Sometimes (2) Seldom (1) Never 3
- 4. Has adequate self-confidence:
(5) Always (4) Usually (3) Sometimes (2) Seldom (1) Never 4
- 5. Is concerned with his own personal problems:
(5) Never (4) Seldom (3) Sometimes (2) Usually (1) Always 5
- 6. Welcomes differences in viewpoint:
(5) Always (4) Usually (3) Sometimes (2) Seldom (1) Never 6

III. ADMINISTRATIVE LEADERSHIP

- 7. Welds staff into a unit with clearly recognized goals:
(5) Exceptionally well (4) Very well (3) Quite well (2) Poorly (1) Very poorly 7
- 8. Uses democratic procedures wherever possible:
(5) Always (4) Usually (3) Sometimes (2) Seldom (1) Never 8
- 9. Inspires subordinates to independent creative work:
(5) Always (4) Sometimes (3) Seldom (2) Never (1) Makes creative work repulsive 9

IV. ADMINISTRATIVE PLANNING

- 10. Makes plans carefully and adequately:
(5) Always (4) Usually (3) Sometimes (2) Seldom (1) Never 10
- 11. Is alert to recognize or devise useful innovations:
(5) Always (4) Usually (3) Sometimes (2) Seldom (1) Never 11
- 12. Understands the objectives and interrelationships of his entire work:
(5) Exceptionally well (4) Very well (3) Quite well (2) Poorly (1) Very poorly 12
- 13. Does a good job of systematizing and coordinating units of work:
(5) Always (4) Usually (3) Sometimes (2) Seldom (1) Never 13
- 14. Has knowledge of pertinent details of his subordinates' work:
(5) Very good (4) Good (3) Fair (2) Poor (1) Not at all 14

V. USE OF FUNDS

- 15. Employs as capable personnel as possible:
(5) Always (4) Usually (3) Sometimes (2) Seldom (1) Never 15
- 16. Selects equipment wisely:
(5) Always (4) Usually (3) Sometimes (2) Seldom (1) Never 16
- 17. Makes effective effort to obtain funds for self-improvement of subordinates:
(5) Always (4) Usually (3) Sometimes (2) Seldom (1) Never 17

(Balance of scale on back of this sheet)

VII. ACCOMPLISHMENT

- 21. Conducts his work as expeditiously as possible:
 (5) Always (4) Usually (3) Sometimes (2) Seldom (1) Never 21
- 22. The essential work of his organization gets done on time:
 (5) Always (4) Usually (3) Sometimes (2) Seldom (1) Never 22
- 23. The important work of his organization is completed:
 (5) All of it (4) Most (3) Some (2) Little (1) None 23

VIII. RELATIONS WITH SUBORDINATES

- 24. Compliments and thanks his subordinates appropriately and sincerely:
 (5) Very frequently (4) Quite frequently (3) Sometimes (2) Seldom (1) Often
 criticizes negatively 24
- 25. Is available to counsel and assist subordinates:
 (5) Sufficiently (4) Almost sufficiently (3) Sometimes (2) Seldom (1) Never 25
- 26. Recognizes and rewards meritorious achievement of his subordinates:
 (5) Always (4) Usually (3) Sometimes (2) Seldom (1) Never 26
- 27. Possesses insight into the problems encountered by his subordinates:
 (5) Complete (4) Much (3) Some (2) Little (1) None 27
- 28. Is honest and dependable in dealings with subordinates:
 (5) Always (4) Usually (3) Sometimes (2) Seldom (1) Never 28
- 29. Displays unwarranted favoritism to some subordinates:
 (5) Never (4) Seldom (3) Sometimes (2) Often (1) Continuously 29
- 30. Appropriates ideas and work of subordinates to improve his own standing:
 (5) Never (4) Seldom (3) Sometimes (2) Often (1) Continuously 30
- 31. Does everything possible, consistent with a subordinate's ability and achievement
 to advance him:
 (5) Always (4) Usually (3) Seldom (2) Never (1) Curbs advancement 31
- 32. Is just and considerate in discharging subordinates:
 (5) Always (4) Usually (3) Sometimes (2) Seldom (1) Never 32
- 33. The general morale of his staff:
 (5) Exceptionally high (4) Good (3) Fair (2) Poor (1) Very low 33

IX. PUBLIC RELATIONS

- 34. Promotes public relations:
 (5) Actively good (4) Fair (3) Poor (2) Not at all (1) Actively bad 34

X. SOCIAL RESPONSIBILITY

- 35. Attempts to orient his work to the welfare of society at large:
 (5) Exceptionally well (4) Well (3) Fairly well (2) Indifferently (1) Poorly 35
- 36. Team work: conforms to the purposes and plans of the organization which he serves;
 does not seek unfair advantage for his unit:
 (5) Always (4) Usually (3) Sometimes (2) Seldom (1) Never 36

*** The use of this rating scale in the study of Montana School Administrators is made possible through the co-operation of the Division of Educational Reference of Purdue University at Lafayette, Indiana.