

AN INVESTIGATION OF THE RELATION BETWEEN
CONDUCT AND SCHOOL MARKS
AND
CONDUCT AND INTELLIGENCE QUOTIENTS

A THESIS
SUBMITTED TO THE DEPARTMENT OF
PSYCHOLOGY AND THE GRADUATE COUNCIL OF THE KANSAS STATE
TEACHERS COLLEGE OF EMPORIA IN PARTIAL FULFILLMENT OF
THE REQUIREMENTS FOR THE DEGREE OF
MASTER OF SCIENCE

By

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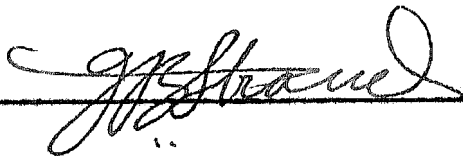
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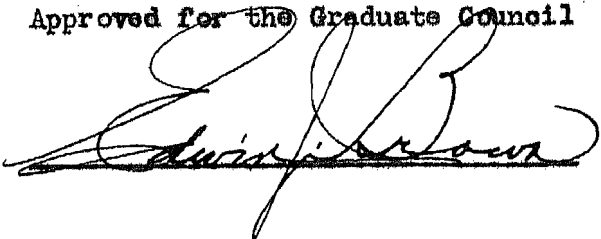
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ACKNOWLEDGMENT

The writer wishes to sincerely acknowledge his indebtedness to Doctor J. B. Stroud, under whose direction this study was conducted.

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INTRODUCTION

Statement of the Problem: The aim of this study is to determine the relation of conduct problem tendencies in children to their school marks, intelligence test scores, and neurotic tendencies; and also to determine the relation of neurotic tendencies of school children to their school marks and to their intelligence test scores.

Historical Introduction: The following is devoted to the summarization of studies of a similar and identical nature. There is, however, very little reported evidence of studies bearing a direct relationship to this one, as stated above.

Finch and Nemzek¹ attempted to determine the relation between teachers' grades and personality, and between intelligence and personality as measured by the Bernrueter Personality Inventory. The inventory is a measurement of neurotic tendencies, self-sufficiency, and dominance-submission. For their subjects Finch and Nemzek used 102 pupils from the sophomore class in the University High School of the University of Minnesota. The grades were assigned points as follows: 3 points for "A," 2 points for "B," 1 point for "C," 0 point for "D," -1 point for "F." The measures of intelligence were obtained from the results of administering five intelligence tests to each individual.

¹ Finch, F. H. and Nemzek, C. L., "The Relationship of the Bernrueter Personality Inventory to Scholastic Achievement and Intelligence"; in School and Society, Vol. 36, pp. 594-596, (1932).

The coefficient of correlations of the total number of pupils, which is shown below, was computed by the Pearson Product-Moment Method and reveals no significant relationship:

Neurotic tendencies and teachers' marks	.087 ± .067
Self-sufficiency and teachers' marks	.087 ± .067
Dominance-submission and teachers' marks	.005 ± .067
Neurotic tendencies and intelligence quotient	.01 ± .067
Self-sufficiency and intelligence quotient	.21 ± .065
Dominance submission and intelligence quotient	.07 ± .067
Teachers' marks and intelligence quotient	.63 ± .040

They also found that personality scores added little to the zero order coefficient of .63 representing the relationship between intelligence quotient and teachers' marks.

Olsen,² by using the same rating scale as used in the present study, determined definitely that group tendencies for unacceptable behavior tended to be associated with low intelligence. He, however, warns against accepting this from the standpoint of the individual because children with large or small amount of problem tendencies are found at any level of intelligence in the distribution. Intelligence quotients were obtained for all children in an elementary school in St. Paul and were classified according to Terman's classification of intelligence quotients. When the

² Olson, W. C., Problem Tendencies in Children; University of Minnesota Press, Minneapolis, Minnesota, pp. 104-110, (1931).

mean scores were computed, it was found that the very superior group had the lowest mean score on the scale. It was also found that the mean scores of the scale increased in size for each successive lower division of the intelligence quotient classification.

An examination of Olson's study reveals that there is a negative correlation between problem tendencies and intelligence, which means that low intelligence tends to be associated with high problem tendencies. It bears repeating that Olson warns that the coefficients are not sufficiently high to apply in individual cases. The following shows the relationship between intelligence and problem tendencies which he found:

At 2½ years correlation equals	-.02
At 4 years correlation equals	-.17
At 6 years correlation equals	-.12
At 7 years correlation equals	-.09
At 8 years correlation equals	-.06
At 9 years correlation equals	-.06
At 10 years correlation equals	-.07
At 11 years correlation equals	-.06
At 12 years correlation equals	-.07
At 13 years correlation equals	-.07
At 14 years correlation equals	-.09
At 15 years correlation equals	-.11

In regard to his study of the fifth grade in an elementary school in St. Paul, Minnesota, the coefficients of correlations were as follows:

	r
Between achievement and intelligence	.503
Between achievement and problem tendencies	-.558
Between intelligence and problem tendencies	-.283
Between achievement and intelligence with problem tendencies held constant	.433
Between achievement and problem tendencies with intelligence constant	-.514
Between intelligence and problem tendencies with achievement held constant	.004

It will be noted that the relationship between achievement and intelligence ($r .503$), as well as the relationship between achievement and problem tendencies ($r -.568$), is comparatively high. The relationship between intelligence and problem tendencies ($r -.283$) is somewhat low. Relationship between achievement and intelligence with problem tendencies held constant ($r .433$) is appreciably raised, while the relationship between achievement and problem tendencies with intelligence held constant ($r -.514$) remains high. The relationship between intelligence and problem tendencies with achievement held constant ($r .004$) is extremely low. It may also be stated that intelligence seems to have little influence upon problem tendencies and achievement when the two are correlated.

Oosthuizen³ made a study in the Robert Bowie school at Tempe, a city in the Orange Free State Province of the Union of South Africa, with the Vinland Adjustment Score Card for measuring social behavior. He found that there was only a correlation of .15 between the scores on the Adjustment Score Card and intelligence.

Feder and Miller,⁴ also using the same behavior rating scale as used in this study, found correlations existing as follows:

Between intelligence and Schedule A	.257	PE.045
Between intelligence and Schedule B	.238	PE.045
Between scholastic average and Schedule A	.566	PE.047
Between scholastic average and Schedule B	.458	PE.039
Between good citizenship and Schedule A	.147	PE.047

³ Oosthuizen, P. J. "Efficiency of the Vinland Adjustment Score Card for Measuring Social Behavior": in Journal of Educational Research, Vol. 23, No. 4, pp. 280-287, (January-May, 1931).

⁴ Feder, D. D. and Miller, L. W. "An Evaluation of Certain Aspects of a Program of Character Education": in The Journal of Educational Psychology, Vol. 24, No. 5, pp. 385-391, (1932).

Between good citizenship and
Schedule B

.070 PE.047

In a study of the 165 pupils in the Zeeland High School in Zeeland, Michigan, Sangren⁵ reports a correlation of .77 by the Spearman Rank Order Method between intelligence and citizenship qualities; also a correlation of .92 between scholarship and citizenship qualities. The citizenship qualities used here are physical vigor, social and personal qualities, leadership, and teamwork. The ratings were made by nine school teachers, who were well acquainted with the pupils. The scale used was modelled after Form B of Rugg's Rating Scale for Judging High School and College Students.

Pintner⁶ has made a similar study using the Allport and Vernon Scale for measuring interests in personality, known as the "Study of Values." This scale, which has been proven reliable in studies by Whitley⁷ and by Cantrill and Allport,⁸ has six divisions, namely: (1) social interests, (2) theoretical interests, (3) aesthetic interests, (4) religious interests.

His study was performed with 187 students in a class of educational

⁵ Sangren, Paul V. "Social Rating of Best and Poorest High School Students": in The Journal of Educational Psychology, Vol. 14, pp. 209-214, (1923).

⁶ Pintner, Rudolf "A Comparison of Interests, Abilities, and Attitudes": in The Journal of Abnormal and Social Psychology, Vol. 27, No. 4, pp. 351-357, (January-March, 1933).

⁷ Whitley, Paul L. "A Study of the Allport-Vernon Test for Personal Values": in The Journal of Abnormal and Social Psychology, Vol. 28, pp. 6-13, (1933).

⁸ Cantrill, H. and Allport, G. W. "Recent Applications of the Study of Values": in The Journal of Abnormal and Social Psychology, Vol. 28, pp. 259-273, (1933).

psychology at Teachers College, Columbia University. The correlation between their intelligence test scores and the six different divisions of the scale are as follows:

Intelligence and social interests	.38
Intelligence and theoretical interests	.24
Intelligence and aesthetic interests	.08
Intelligence and religious interests	-.05
Intelligence and political interests	-.28
Intelligence and economic interests	-.41

The correlations between intelligence and social interests (.38) and between intelligence and economic interests (-.41) are the only ones of any reliable significance.

In comparing class marks and intelligence the following correlations were computed:

Class marks and social interests	.45
Class marks and religious interests	.05
Class marks and theoretical interests	-.01
Class marks and political interests	-.14
Class marks and aesthetic interests	-.15
Class marks and economic interests	-.16

The most striking feature of these comparisons are the higher relationships existing between the more intelligent students used in this study and social and theoretical interests; also, the low political and economic interests that are associated with the more intelligent students, while aesthetic and religious interests may exist at any degree.

It will be noted from the above list that social interests bear the only important correlation when comparisons to school marks are made. Apparently then, those with high social interests tend to do better class work than those of low social interests. In summarizing the evidence

presented in the two preceding lists, it may be said that those students who make good school marks are the ones of higher intelligence and higher social interests.

Steere⁹ made a study similar to the present one in which he used 500 eighth, ninth, and tenth year pupils of the New York State high schools. The character traits selected for this study were initiative, control of attention, persistence, trustworthiness, and sense of accuracy. Teachers for rating the pupils were then selected and rated only those pupils who had been under their instruction sufficient time to render adequate knowledge of these traits. Each pupil used in this study had no less than three and some had as high as six ratings by their teachers. These character trait ratings then compared with scholarship ratings with the following results:

Median scholarship for whole group	77.
Median character trait rating for whole group	79.24
Correlation of scholarship and character traits	.73

The following facts have been selected from reports of lesser importance to this study: Goring, as Rosenow¹⁰ points out, in a study of delinquency with the English convict, found a correlation of .66 between

⁹ Steere, H. J. "The Effect of Character Traits on Scholastic Achievement": in School and Society, Vol. 29, No. 753, pp. 707-708, (June, 1929).

¹⁰ Rosenow, Curt "Is Lack of Intelligence the Chief Cause of Delinquency": in Psychological Review, Vol. 27, No. 1, pp. 147-167, (January, 1920).

criminality and mental deficiency. Terman¹¹ found that high intelligence correlates in general with what are known as strong points in character. Garrison and Craft¹² in an investigation to determine the relation between character ratings and certain mental abilities of pupils found that character traits taken separately do not show close relationship with intelligence and vocabulary ability, but this correlation is increased appreciably when the total ratings are considered. They also found that there were positive and reliable correlations existing between various character traits and average of Fall term grades in all subjects. In this study they devised a rating scale which embodied the procedures of previous scales but which the authors assumed would be more reliable and valid for their study. Yepsen¹³ reports, from studies made with the Vinland Personal Behavior Score Card, that behavior as indicated by this scale seems to have no significant relation to mental level or degree of brightness--the coefficient of correlation between it and scores on the Benet age test has at no time exceeded .25. The correlation between the results of this scale and intelligence quotient is also exceedingly low.

¹¹ Terman, L. M. Intelligence of School Children: Houghton-Mifflin, Boston, pp. 182, (1919).

¹² Garrison, K. C. and Howell, Sue Craft "The Relationship Between Character Trait Ratings and Certain Mental Abilities": in The Journal of Applied Psychology, Vol. 15, pp. 378-389, (1931).

¹³ Yepsen, Lloyd "A Score Card of Personal Behavior": in The Journal of Applied Psychology, Vol. 12, No. 1, pp. 140-147, (1928).

Rating Scales: Since there is still considerable controversy as to the effectiveness of rating scale methods, it here seems advisable to comment upon their usefulness in education.

Rating scales like all other devices for measurement in the diagnosing of personality, character, or conduct have had their time of doubt and denial of usefulness in the field of education. Although they have been used in some form almost since studies in psychology have been made, and although there were a few attempts to use them previously, they did not come into prominent use until during the World War. At this time it became imperative to have some means of rating army officers for the purpose of assignment to their ranks. This time also marks the beginning of a serious and logical attempt to establish reliability and validity of rating scales.

While at present they are still in the state of imperfection as a measuring device for personal conduct, they are undoubtedly our best recognized means of performing this function objectively. The rating scale as it is today is an answer to the desire to eliminate the subjectiveness which characterizes human judgment. For example, I think of a person as being honest, who is sufficiently so for me to trust in my dealings with him. While I realize that he has found articles that he did not return to the owner, or that he would not return extra change that was given to him when he paid a bill. If I were asked to judge if this person were honest or dishonest, the answer would undoubtedly be "Honest." But, if my judgment were based upon an objectified trait scale, I would be required to

judge the degree to which he was honest by giving answers to such questions as:

- | | |
|--|--|
| 1. Does he keep found articles | Never Occured
Once or Twice
Occasional
Frequent |
| 2. Does he attempt to evade returning borrowed money | Never Occured
Once or Twice
Occasional
Frequent |
| 3. Does he cheat when playing a game | Never Occured
Once or Twice
Occasional
Frequent |

Thus we would have an objectified rating of this trait (honesty) on a graduated scale in conduct situations, and not in some vague, generalized manner which would yield to subjectiveness or mere personal opinion.

Not only have they been used to a degree of satisfaction in education, but in industry as well. They are of great assistance to those selecting employees, determining their advancement, or dismissal, et cetera. In regard to the usefulness of rating scales Symonds¹⁴ states:

Without rating methods one is inclined to give an opinion concerning a person which is no more than a general impression. A rating scale usually asks for opinions on several different traits or qualities. If thoughtfully selected, these separate qualities may be made to represent important sides of a man's personality. In using such a scale the rater is forced to consider one quality or trade at a time to the exclusion of others-- he is forced to be analytical In psychological

¹⁴ Symonds, Percival M. "Rating Methods," Chapter 3 in Diagnosing Personality Conduct, Century Company, New York, 1931, pp. 43.

research rating has already had wide use and has performed valuable service. In the field of social psychology and in the study of personality there is often no other method of measurement available than rating.

Rugg¹⁵ made a study of the results obtained from rating army officers in different training camps during the World War. The results of this study made it quite apparent that rating scale methods of diagnosis were not to be accepted wholeheartedly as substantial evidence of an individual's character. In fact, Rugg expressed doubt as to our ever being able to use them in the field of education as a reliable device for securing information. He, however, qualified his statements of doubt when he stated in the same study:

Human character can be accurately rated if done under the following conditions,

1. If each final rating given a person is the average of three independent ratings, each one made on a scale as objectified as the man-to-man comparison type of scale.
2. If the scale on which the ratings are made are comparable and equivalent, having been made in conference under the instruction of one skilled in rating scale work.
3. If the three raters are so thoroughly acquainted with the person rated that they are competent to rate.

In the opinion of the writer these have become recognized criteria in most instances to those devising and administering the rating scale in recent years.

¹⁵ Rugg, Harold S. "Is the Rating of Human Character Practicable": in Journal of Educational Psychology, Vol. 12, No. 8, pp. 425-348, (November, 1921).

Reliability of Ratings: Because of the pronounced skepticism which seems to prevail regarding the reliability of ratings as a valuable method of gathering data it is advisable to point out findings of some of the attempts to determine their reliability.

In the ranking of seniors for the employment office at the Carnegie Institute of Technology, Miner¹⁶ found a correlation of .54 with 64 cases and one of .57 with 30 to 36 cases. The correlations were made between a series of judgments selected at random of each student and a similar series of the remaining judgments. Hayes and Patterson¹⁷ in a study found the average correlation of .65 in a series of correlations made from materials gathered by rating various groups such as carpenters, clerks, machine operators, and draftsmen. Correlations were made between ratings on the same men by the same judge for different months and between ratings on the same men by different judges.

The following is a report by Symonds¹⁸ on the reliability of ratings:

Hughes reports an average reliability coefficient of .56 when 253 high school students were rated on twelve traits and an average reliability of .63 when seventy-nine students were rated on twelve traits. Shen in a careful study, reports an average reliability coefficient of .55 for thirteen judges (Presumably college students) rating themselves and each other on eight traits.

¹⁶ Miner, James Burt "The Evaluation of a Method for Finely Graded estimates of Ability"; in The Journal of Applied Psychology, Vol. 1, pp. 123-133, (1917).

¹⁷ Hayes, Mary H. S. and Patterson, Donald G. "Experimental Development of the Graphic Rating Method"; in Psychological Bulletin, Vol. 18, pp. 98-99, (1921).

¹⁸ Symonds, Percival M. "Rating Methods, Chapter 3 in Diagnosing Personality Conduct, Century Company, New York, 1931, pp. 94.

Webb obtained an average reliability of .55 when ratings were made on forty-five traits of 124 boys rated in groups of twenty (average age twelve); and another average reliability of .55 when 140 young men in groups of about thirty-five (average age twenty-one) were rated on twenty-eight traits. Webb admits having rejected fifteen pairs of estimates out of 112 for the boys, and sixty-three out of 445 for the students. Using his complete data the average reliabilities are boys .49 and students .47. Waite found reliabilities of .47 and .50 when 1,405 and 2,018 pairs of judgments were obtained on school children. Gallup reports the use of a graphic rating scale which yielded a correlation with the educational director's ratings of .66 in estimating the success of retail salespeople.

In a study by Arlitt and Dowd¹⁹ made from the ratings of 35 girls in a summer camp by nine judges who had associated with the subjects in class work, at free play, at meals, during group games, and in their living quarters. It was determined that these judges varied widely in their estimates of character traits despite the fact that they knew their subjects intimately. The authors believe this may be due to the influence of likes or dislikes of the subjects by the judges, lack of a common standard of the degree of a trait by the judges, and that traits function to different degrees in different situations.

Garrison and Howell,²⁰ in an investigation to obtain the relation between character ratings and certain mental abilities of pupils, found that the ratings were somewhat consistent when three judges, with a fair degree of familiarity with the subjects, use the character rating scale

¹⁹ Arlitt, Ada Hart and Dowd, Constance E. "Variability Among a Group of Judges in Rating Character Traits in Children": in Psychological Bulletin, Vol. 23, pp. 617-679, (1926).

²⁰ Garrison, K. G. and Howell, Sue Graft "The Relationship Between Character Trait Ratings and Certain Mental Abilities": in The Journal of Applied Psychology, Vol. 15, pp. 378-389, (1931).

which embodied the procedures of previous scales, but which the authors assumed would be more reliable and valid for this study.

Symonds believes that rating scales should have at least seven class intervals in order to give the highest acceptable reliability. Below the number of seven the reliability decreases as the number of classes decrease. Above the number of seven the reliability does not increase sufficiently to merit the use of a greater number of classes.

In summarizing the reliability of ratings in general Symonds²¹ contends that the typical reliability coefficient of ordinary judgment methods of personal traits is .55. Some, however, are higher and some lower. He further states that when traits are analyzed into subtraits, which correlate highly with the trait, and ratings on the subtraits are combined into one rating the correlations are much higher, especially when several traits are rated independently and their results combined.

Validity of Ratings: In this section it is our purpose to consider the question whether ratings are measures of what they set out to measure.

Without due consideration it would seem that acquaintance of the rater with the individual being rated would render the ratings more valid, that is, the better and longer the acquaintance the more valid the rating. But apparently this is not the case, for with acquaintanceship there enters in other factors such as tendencies to be lenient, to show favor-

²¹ Symonds, Percival M. "Rating Methods," Chapter 3 in Diagnosing Personality Conduct, Century Company, New York, 1931, pp. 95.

itism, and not to be aware of certain character traits which have become deadened through association with the individual.

Knight²² in a study of the ratings made by the supervisors of 1048 public school teachers in one system concludes that the acquaintance factor tends to make the ratings more lenient, that is, it increases the probability of over-rating, and that it tends to make the rater less critical and less analytical of his subject. Shen,²³ in a study of 28 individuals who had been classmates for three years and rated each other, reports that intimate friendship does not seem to render knowledge of one another more accurate. He also states that there is a consistent relation between friendship and the tendency to over-rate. To what extent this factor affects the validity of ratings is yet to be determined, but it should be recognized and an allowance made for it in the use of ratings.

General impressions formed of the individual being rated also seems to have an influence in making ratings less valid. There is a constant possibility of forming conclusions of specific character traits from vague general impressions. As is pointed out elsewhere, we think of a man as being honest when our experience with him has showed him so, but upon full analysis of this trait we find there are many things in which he is not honest. This factor of generality is what many writers have termed as the "halo effect" in ratings.

²² Knight, F. B. "The Effect of the 'Acquaintance Factor' Upon Personal Judgments": in Journal of Educational Psychology, Vol. 14, pp. 129-142, (1923).

²³ Shen, Eugene "The Influence of Friendship Upon Personal Ratings": in Journal of Applied Psychology, Vol. 9, pp. 66-68, (1925).

Symonds points out that Knight, in his studies estimating teachers success, concludes that the high correlation which prevailed between the rating of different traits was obvious evidence of the presence of general estimate.

In a study to estimate the size of the halo effect Symonds²⁴ points out the five following reasons for its existence in the rating of any trait or habit:

1. The trait or habit is one which is not easily observed.
2. The trait or habit is one which is not commonly observed or thought about, such as one which is not usually emphasized in the classroom.
3. The trait or habit is not clearly defined.
4. The trait or habit is one which involves reactions with other people rather than "self-contained" behavior.
5. The trait or habit is one with high moral importance in its usual connotation.

It is the opinion of the writer that the halo effect has been at least partly eliminated by the objectified rating scale. With this instrument the rater is required to analyze a trait into its elements, or at least to what degree it exists when making ratings.

Symonds reports that Hartshorne and May found a correlation of .40 between classroom honesty and a rating for general honesty. When improved rating technique was used on "Total reputation" for service there was a correlation of .61 between that and the total score for service on performance tests. They also found a correlation of .52

²⁴ Symonds, Percival M. "Rating Methods," Chapter 3 in Diagnosing Personality and Conduct, Century Co., New York, 1931, pp. 113.

between tests and ratings of self-control.

Symonds believes that although actual ratings agree only indifferently with tests, it is theoretically possible to obtain an agreement as close as the accuracy of judgment and measurement would permit by extending both ratings and testing to cover a wider variety of situations.

An examination of some examples of rating scales will reveal their nature of constructive usefulness in diagnosing human conduct. As pointed out by Symonds,²⁵ the first rating scale, as we know scales today, was devised by Galton in 1883 on "Mental imagery."

Scale of Mental Imagery--Imagery of a Breakfast Table

Highest--Brilliant, distinct, never blotchy.

First Subactile--The image once seen is perfectly clear and bright.

Last Octile--Dim and not comparable in brightness to the real scene. Badly defined, with blotches of light; very incomplete, very little of one object is seen at one time.

Last Subactile--I am very rarely able to recall any object whatever with any sort of distinctness. Very occasionally an object or image will recall itself, but even then it is more like a generalized image than an individual one. I seem to be almost destitute of visualizing powers as under control.

Lowest--My powers are zero. To my consciousness there is almost no association of memory with objective visual impressions. I recollect the table but do not see it.

Thus we have a scale on which our mental imagery in a particular situation may be placed at different intervals between the two extremes--lowest and

²⁵ Symonds, Percival M. "Rating Methods," Chapter 3 in Diagnosing Personality and Conduct, Century Co., New York, 1931, pp. 52-53.

highest. Each division is also explained so that location is clearly determined:

RATINGS ON INTELLIGENCE

Smith	1	2	3	4	5	6	7
Jones	1	2	3	4	5	6	7
Brown	1	2	3	4	5	6	7
et cetera							

This is one of the simplest methods of rating. Not only can any human trait be rated by this device, but comparison of objects, buildings, et cetera can be made.

Yepson's²⁶ scale is probably one of the most acceptable instruments of its kind. It requires the rater to analyze the human traits, such as "attitudes of others toward him," and give objectified answers to them.

An example follows:

THE PERSONAL BEHAVIOR SCORE CARD

Attitude of Others toward him
 Choose him as a leader
 Accept him as a leader
 Play with him only occasionally, not often
 Seek his companionship
 Ignore and shun him
 Accept readily as one of the group
 Butt of crowd, pick on him

Sociability

Enjoys being by self to extent of being repulsive
 Seeks company of certain few

²⁶ Yepson, Lloyd N. "A Score Card of Personal Behavior": in Journal of Applied Psychology, Vol. 12, pp. 140, (1928).

Often sulky
 Adjusts self to social situation
 Quarrels, fights, et cetera with companions

GRAPHIC RATING OF _____ 27

3. Does he appear neat or slovenly in his dress?
 Extremely neat Appropriately Inconspicuous Somewhat Very
 Almost a dude and neatly in dress Careless Slovenly
 dressed
9. How does he impress people by his physique and bearing?
 Looked down Unimpressive Noticeable for Excites admiration
 on physique and good physique very impressive
 bearing and bearing
13. How flexible is he?
 Hidebound Slow to Progressive Quick to pick Is always adapting
 Runs in a take up tendencies up new ways himself and taking
 rut new ideas and habits up new ideas
18. Is he quiet or talkative?
 Talks seldom Does not Moderately More than Great talker
 When question- uphold his talkative upholds always going
 ed answers end of con- his end of
 briefly versation conversation

THE ARMY RATING SCALE²⁸

I Physical qualities	Highest	15
Physique, bearing,	High	12
neatness, voice,	Middle	9
energy, endurance.	Low	6
Consider how he	Lowest	3
impresses his com-		
mand in these res-		
pects.		

²⁷ Freyd, Max "The Graphic Rating Scale": in Journal of Educational Psychology, Vol. 14, pp. 83-102, (1923).

²⁸ Rugg, Harold "Is The Rating of Human Character Practicable": in Journal of Educational Psychology, Vol. 12, pp. 425-438, (1921).

II Intelligence

Accuracy, ease in learning; ability to grasp quickly the point of view of the commanding officer, to issue clear and intelligent orders, to estimate new situations and to arrive at a sensible decision in a crisis.	Highest	15
	High	12
	Middle	9
	Low	6
	Lowest	3

III Leadership

Initiative, force, self-reliance, decisiveness, tact, ability to inspire men, and to command their obedience, loyalty and cooperation.	Highest	15
	High	12
	Middle	9
	Low	6
	Lowest	3

MEASURING HABITS OF GOOD CITIZENSHIP²⁹

0 1 2 3	Puts on or takes off gymnasium shoes in three minutes or less.
0 1 2 3	Does not run in the halls.
0 1 2 3	Keeps desk, table, and locker in good order.
0 1 2 3	Laughs and talks quietly.
0 1 2 3	Is unassuming.

SCALE FOR RATING HUMAN QUALITIES³⁰

Name	Qualities to be Rated				
	Dependability	Intelligence	Industriousness	Neatness	Cheerfulness
John Doe					
June Smith					
Harry Black					
et cetera					

²⁹ Chassell, Clara F., Upton, Siegfried Maia, and Chassell, Laura M. "Short Scales for Measuring Habits of Good Citizenship": in Teachers College Record, Vol. 23, pp. 52-79, (1922).

³⁰ Paterson, Donald, G. "Methods of Rating Human Qualities": in The Annals of the American Academy of Political and Social Science, Vol. 110, pp. 81-93, (November, 1923).

COMPARATIVE RATING SCALE³¹

INDIVIDUAL CAPACITIES, ATTITUDES AND INTERESTS

TRAITS AND ATTITUDES	Lowest	Inferior	Medium	Superior	Highest
	0	40	80	120	160
1. Regularity and Persistency					
2. Trust worthiness					
3. Sense of Accuracy					
4. Confidence in own ability					
5. Initiative and Aggressiveness					
6. Respect for Authority et cetera					
SPECIAL INTERESTS					
1. Social					
2. Executive					
3. Literary					
4. Scientific and Mathematical					
5. Mechanical and Constructive					
6. Expressive et cetera					

³¹ Hughes, Hardin W. "A Rating Scale for Individual Capacities, Attitudes and Interests"; in Journal of Educational Methods, Vol. 3, pp. 57, (1923).

SELF-ANALYSIS TEST³²

DIRECTIONS: Read each question, then place an X in the column at the head of which is the answer to what you think is true.

CAN YOU BE TRUSTED	ANSWERS			
	Always	Nearly Always	Some- times	Never
1. To do a given task exactly as it was given to you to do?				
2. To work faithfully when you work alone or when you are observed?				
3. To stick to a point when you know you are right?				
4. To avoid taking property belonging to others?				
5. To avoid making false claims about yourself?				
6. To be fair in an examination?				
7. To return borrowed property?				
8. To keep a promise?				
et cetera				

Purpose: Since there are many conflicting opinions regarding the influence of intelligence upon human conduct or character and conduct upon grades, this study was planned to investigate the following:

1. The relation between school grades and intelligence.

³² Knight, F. E. and Franzen, Raymond H. "Pitfalls in Rating Schemes": in Journal of Educational Psychology, Vol. 13, pp. 204-213, (1922).

2. The relation between school grades and psychoneurotic tendencies.

3. The relation between school grades and behavior ratings.

4. The relation between intelligence and psychoneurotic tendencies.

5. The relation between intelligence and behavior ratings.

6. The relation between psychoneurotic tendencies and behavior ratings.

PROCEDURE

Material. The intelligence scores of the high school pupils were obtained by the Hemmen-Nelson Tests of Mental Ability--Form A. In the grades from three to eight, inclusive, the intelligence scores were also obtained by the Hemmen-Nelson Tests, but in the first and second grades they were determined by the Haggerty Intelligence Examination. The Mathews Revision of the Woodworth Psychoneurotic Inventory was used to determine the psychoneurotic tendencies of each pupil, and the conduct or behavior problem tendencies were determined by the Haggerty-Olson-Wickman Behavior Rating Schedule.

Subjects. The subjects were pupils of the public schools of Eskridge and Dunlap, Kansas. They included pupils from the first grade through the senior year in high school.

Method. Realizing the fact that people are not qualified to make competent ratings of personal conduct without sufficient instruction as to ratings, or sufficient experience previously, the writer attempted to make the ratings as acceptable as possible by impressing upon the raters the following: a thorough understanding of the purpose of ratings, an understanding of the directions for making the ratings as prescribed by the authors of the scale, that in making their ratings a careful diagnostic attitude toward their task was necessary and that all general impressions (favorable or unfavorable) of the subject must be eliminated

while making the ratings. Three ratings on the Haggerty-Olson-Wickman Behavior Rating Schedule were obtained on each pupil. The ratings were made by teachers who had had the pupils under their supervision in one or more classes for a period of from one to four school years. The enrollment of the schools and the size of the communities were small enough to afford opportunity for acquaintance and association of teachers and pupils outside the class room.

The Mathews revision of the Woodworth Psychoneurotic Inventory was given the subjects for the purpose of determining the presence and the extent to which neurotic tendencies existed. There was no standardized scoring key available for this instrument, therefore the investigator devised one for this study by using the total number of unfavorable answers as the total score given the subject.

Intelligence quotients for the high school group were determined by administering Form A of The Henmon-Nelson Test of Mental Ability, Grades 7-12. The same test, Grades 3-8, was used in the upper grades, and the Haggerty Intelligence Examination was used in the first and second grades.

School grades, as used here, are representative of an average of all the grades of the pupils over a period of four years, with the exception of those of the first, second and third year pupils. These were determined by an average of all grades available at the end of the school year.

RESULTS AND DISCUSSION

The principal results of this study are shown in terms of correlation coefficients in Table I. This table gives the inter-correlations of the four main variables; namely, conduct ratings, intelligence test scores, neurotic tendency scores, and school marks. The number of cases included in each correlation is shown in Column N of Table I.

TABLE I

COEFFICIENT OF CORRELATION BETWEEN (1) TEACHERS CONDUCT RATINGS (2) INTELLIGENCE (3) PSYCHONEUROTIC TENDENCIES (4) SCHOOL GRADES

Correlation between	r	PE	N
1-2	-.20	.04	256
1-3	.07	.15	207
1-4	-.53	.18	256
2-3	-.13	.19	304
2-4	.44	.03	253
3-4	.17	.04	252

From the above named table it will be noted that there is a negative correlation between teachers ratings of the pupil's conduct and their intelligence scores (r 1-2) of $-.20$, which indicates that there is a low negative relationship between the teacher's judgment of the pupil's conduct and their intelligence.

The correlation between teachers ratings of the pupil's conduct and psychoneurotic tendencies (r 1-3) of $.07$ is not sufficiently high to be statistically significant.

The correlation between teachers conduct ratings and school grades (r 1-4) of $-.53$ shows that there is a significant inverse relationship between these two factors. Hence it is evident that the pupils ranking high in problem tendencies by the teacher's judgment rank low in school grades. Stated otherwise, those pupils with the greatest amount of unacceptable behavior traits make the lowest grades in school.

A low negative correlation of $-.13$ was found between intelligence and psychoneurotic tendencies (r 2-3). This correlation is too low to be statistically significant in view of its high probable error. The same is true of the correlations between psychoneurotic tendencies and school grades (r 3-4), which is $-.17$.

Intelligence and school grades (r 2-4) correlate to the extent of $r = .44$. This relationship is sufficiently high to conclude that those pupils ranking highest in intelligence make the best grades in school as a rule.

Since different intelligence tests were used on the students of the primary grades from those used on the intermediate and high school students, it seems desirable to compute the results for the two groups separately. The following additional correlation coefficients are therefore supplied: Grades of primary students and intelligence test scores $r = .53 \pm .12$; grades of intermediate and high school students and intelligence test scores $r = .43 \pm .35$; teacher's ratings and intelligence test scores (primary grades) $r = -.19 \pm .37$ (upper grades) $r = -.22 \pm .02$. This procedure does not seriously alter the general trend of results presented in Table I.

An attempt is made to show the relationship between school grades (grade levels) and the other three variables by tabular procedure. The results are shown in Table II.

TABLE II

A COMPARISON OF THE AVERAGE SCORES OF (1) INTELLIGENCE,
(2) RATINGS, (3) PSYCHONEUROTIC TENDENCIES WITH
THE DIFFERENT GRADE LEVELS

Grade Levels	Intelligence Average	Ratings Average	Psychoneurotic Average
93-100	112.11	59.42	15.34
85-92	104.46	76.15	20.41
76-84	96.93	90.89	22.49
63-75	92.38	107.50	23.04

The grades used in this table are representative of an average of the total grades over a period of four years, except for those pupils of the first three grades, and they are representative of all grades available at the end of the school year. A grade of 93 represents 93 per cent, with 100 being perfect. The average of intelligence, teachers' ratings, and psychoneurotic tendencies was determined by totalling the scores of the particular grade level and dividing by the number of cases therein.

When comparing the intelligence quotient averages of the different grade levels, it was found that the pupils who ranked the highest in grades

(93-100) had the highest intelligent quotient average; those of the lowest grade level (63-75) ranked the lowest in intelligence quotient average; and those of the intervening levels ranked in proportion to the advance in their grade level.

The comparison of the average of teachers' ratings with the different levels of grades shows that the pupils ranking highest in grades have the lowest rating score average, which means that they have the least amount of behavior problem tendencies. Likewise, those of the lowest grade level present the highest scores on teachers' ratings, which means that they have the greatest amount of behavior problem tendencies. Those pupils of the intervening grade levels decrease in rating averages as they advance in school grades.

The different grade levels present similar results when compared to their averages in psychoneurotic tendencies. It is found that the pupils of the highest grade levels have the lowest psychoneurotic score averages, which indicates that they have the least amount of psychoneurotic tendencies. Similar results are noted when one examines the lower grade levels of this comparison.

CONCLUSIONS

Upon the basis of the foregoing data the following tentative conclusions may be offered.

1. Those pupils ranking highest in intelligence test performance make the best school grades and present the fewest conduct problems.

2. Psychoneurotic tendencies do not correlate significantly with intelligence test scores or with conduct. They do correlate slightly with school grades.

3. There is a significant negative relationship between the frequency conduct problems and school grades. This is to say, that the more undesirable the conduct is the higher are the grades.

BIBLIOGRAPHY

- Ackerson, Luton, "Children's Behavior Problems"; University of Chicago Press, Chicago, Illinois, 1931, pp. 288.
- Allport, Gordon W., "Personality and Character"; in Psychological Bulletin, Vol. 18, No. 9, pp. 441-455, (September, 1921).
- Arlitt, Ada Hart and Dowd, Constance E., "Variability Among a Group of Judges in Rating Character Traits in Children"; in Psychological Bulletin, Vol. 23, pp. 617-679, (1926).
- Bernreuter, Robert G., "The Theory and Construction of the Personality Inventory"; in The Journal of Social Psychology, Vol. 4, No. 4, pp. 387-405, (November, 1933).
- Brothemarkle, R. A., "What the Bernreuter Personality Inventory Does Not Measure"; in The Journal of Applied Psychology, Vol. 17, No. 5, pp. 559-563, (October, 1933).
- Cantril, H. and Allport, G. W., "Recent Applications of the Study of Values"; in The Journal of Abnormal and Social Psychology, Vol. 28, pp. 259-273, (1933).
- Chassell, Clara; Upton, Siegfried; Chassell, Laura M., "Short Scales for Measuring Habits of Good Citizenship"; in Teachers College Record, Vol. 23, pp. 52-79, (1922).
- Cleton, Glen U. and Knight, T. B., "Validity of Character Judgments Based on External Criteria"; in Journal of Applied Psychology, Vol. 9, pp. 215-231, (1924).
- Congan, Lucy C.; Conklin, Agnes M.; Hollingsworth, H. L., "An Experimental Study of Self-Analysis, Estimates of Associates and the Results of Tests"; in School and Society, Vol. 2, pp. 171-179, (1915).
- Conklin, Edmund S. and Sutherland, John W., "A Comparison of the Scale of Values Method with the Order of Merit Method"; in Journal of Experimental Psychology, Vol. 6, pp. 44-57, (1923).
- Feder, D. D. and Miller, L. W., "An Evaluation of Certain Aspects of a Program of Character Education"; in Journal of Educational Psychology, Vol. 24, No. 5, pp. 385-391, (May, 1933).
- Ferzold, Guy G., "Character Versus Intelligence in Personality Studies"; in Journal of Abnormal Psychology, Vol. 15, No. 1, (April, 1920).

- Finch, F. H. and Nemzek, C. L., "The Relationship of the Bernreuter Personality Inventory to Scholastic Achievement and Intelligence"; in School and Society, Vol. 36, pp. 594-596, (1932).
- Freud, Max, "The Graphic Rating Scale"; in Journal of Educational Psychology, Vol. 14, pp. 83-102, (1923).
- Garrett, Henry E., "An Empirical Study of the Various Methods of Combining Incomplete Order of Merit Ratings"; in Journal of Educational Psychology, Vol. 15, pp. 157-171, (1924).
- Garrison, K. C. and Howell, Sue Craft, "The Relationship Between Character Trait Ratings and Certain Mental Abilities"; in Journal of Applied Psychology, Vol. 15, pp. 378-389, (1931).
- Gates, Arthur I., "Correlation of Achievement in School Subjects with Intelligence Tests and Other Variables"; in Journal of Educational Psychology, Vol. 13, No. 5, pp. 277-285, (May, 1922).
- Guilford, J. P. and Ruth, "The Relationship Between Character Ratings and Certain Mental Abilities"; in Journal of Applied Psychology, Vol. 15, No. 4, pp. 378, (1931).
- Hartshorne, Hugh; May, Mark A.; Shuttleworth, Frank K., "Studies in the Organization of Character"; in Journal of Educational Psychology, Vol. 20, pp. 77, (1931).
- Hartshorne, Hugh, May, Mark A., Studies in Deceit; The MacMillan Co., New York, 1928.
- Hayes, Mary H. S. and Patterson, Donald G., "Experimental Development of the Graphic Rating Method"; in Psychological Bulletin, Vol. 18, 1921, pp. 98-99.
- Hollingsworth, H. L., Judging Human Character; D. Appleton & Co., New York, 1922.
- Hartshorne, Hugh, May, Mark A., "Objective Methods of Measuring Character"; in Pedagogical Seminary, Vol. 32, No. 1, pp. 45-67, (1925).
- Hughes, Hardin W., "A Rating Scale for Individual Capacities, Attitudes and Interests"; in Journal of Educational Method, Vol. 3, No. 1, pp. 56-65, (September, 1923).
- Knight, F. B., "The Effect of the 'Acquaintance Factor' Upon Personal Judgments"; in Journal of Educational Psychology, Vol. 14, pp. 129-142, (1923).

- Knight, F. B. and Franzen, Raymond H., "Pitfalls in Rating Schemes"; in Journal of Educational Psychology, Vol. 13, pp. 204-213, (1922).
- Lindsay, E. E., "Personal Judgments"; in Journal of Educational Psychology, Vol. 12, pp. 413, 415, (1921).
- Maller, J. E., "The Measurement of Conflict Between Honesty and Group Loyalty"; in Journal of Educational Psychology, Vol. 23, No. 3, pp. 187-191, (March, 1932).
- Marsh, Sarah E. and Perrin, F. A. C., "An Experimental Study of the Rating Scale Technique"; in Journal of Abnormal and Social Psychology, Vol. 29, No. 4, pp. 383-399, (January-March, 1925).
- May, Mark A. and Hartshorne, Hugh, "Recent Improvements in Devices for Rating Character"; in Journal of Social Psychology, Vol. 1, pp. 66-77, (1930).
- May, Mark A. and Hartshorne, Hugh, "First Steps Toward a Scale for Measuring Attitudes"; in Journal of Educational Psychology, Vol. 17, pp. 145-162, (1926).
- Miner, James Burt, "The Evaluation of a Method for Finely Graduated Estimates of Ability"; in The Journal of Applied Psychology, Vol. 1, pp. 123-133, (1917).
- Moore, Henry T., "Three Types of Psychological Ratings in Use with Freshman at Dartmouth"; in School and Society, Vol. 13, pp. 418-420, (1921).
- Olson, W. C., Problem Tendencies in Children; University of Minnesota Press, Minneapolis, Minnesota, (1931).
- Oosthuizen, P. J., "Efficiency of the Vinland Adjustment Score Card for Measuring Social Behavior"; in Journal of Educational Research, Vol. 23, No. 4, pp. 280-287, (January-May, 1931).
- O'Shea, Michael V., The Child--His Nature and His Needs.
- Paterson, D. G. and Ruml, B., "The Extention of Rating Scale Theory and Technique"; in Psychological Bulletin, Vol. 17, pp. 80-81, (1920).
- Pitner, Rudolf, "A Comparison of Interests, Abilities, and Attitudes"; in Journal of Abnormal and Social Psychology, Vol. 27, No. 4, pp. 351-357, (January-March, 1933).

- Ream, M. J., "A Statistical Method for Incomplete Order of Merit Ratings"; in Journal of Applied Psychology, Vol. 5, pp. 261-266, (1921).
- Roback, A. A., "Intelligence and Behavior"; in Psychological Review, Vol. 29, No. 1, pp. 54-62, (January, 1933).
- Rosenow, Curt, "Is Lack of Intelligence the Chief Cause of Delinquency"; in Psychological Review, Vol. 27, No. 1, pp. 147-157, (January, 1920).
- Rugg, Harold S., "Is the Rating of Human Character Practicable"; in Journal of Educational Psychology, Vol. 12, No. 8, pp. 425-348, (November, 1921).
- Sangren, Paul V., "Social Rating of Best and Poorest High School Students"; in Journal of Educational Psychology, Vol. 14, pp. 209-214, (1923).
- Schuttleworth, F. K., "A Study of Questionnaire Technique"; in Journal of Educational Psychology, pp. 652-658, (1931).
- Shen, Eugene, "The Influence of Friendship Upon Personal Ratings"; in Journal of Applied Psychology, Vol. 9, pp. 66-68, (1925).
- Slawson, John, "The Reliability of Judgment of Personal Traits"; in Journal of Applied Psychology, Vol. 6, No. 2, pp. 161-171, (1922).
- Snow, A. J., "An Experiment in the Validity of Judging Human Ability"; in Journal of Applied Psychology, Vol. 8, pp. 339-346, (1924).
- Stagner, Ross, "Validity and Reliability of the Barnreuter Personality Inventory"; in Journal of Abnormal and Social Psychology, Vol. 28, pp. 413-418, (1934).
- Steere, H. J., "The Effect of Character Traits on Scholastic Achievement"; in School and Society, Vol. 29, No. 753, pp. 707-708, (June, 1929).
- Stenquist, John L., "An Improved Form for Rating by the Order of Merit Method"; in Journal of Educational Psychology, Vol. 11, 1920.
- Symonds, Percival M., "Stodiousness Questionnaire"; in Journal of Educational Psychology, Vol. 15, No. 8, pp. 484-498, (November, 1924).
- Symonds, Percival M., "Notes on Rating"; in Journal of Applied Psychology, Vol. 9, pp. 188-195, (1925).
- Symonds, Percival M., Diagnosing Personality and Conduct; Century Company, New York, 1931.

- Terman, L. M., Intelligence of School Children; Houghton-Mifflin, Boston, 1919, pp. 182.
- Thorndike, Edward L., "The Constant Error in Psychological Ratings"; in Journal of Applied Psychology, pp. 25-29, (December, 1920).
- Valentine, C. W., "The Relative Reliability of Men and Women in Intuitive Judgments of Character"; in British Journal of Psychology, Vol. 19, Part 3, pp. 213-238, (January, 1929).
- Vernon, Philip E., "Some Characteristics of the Good Judge of Personality"; in The Journal of Social Psychology, Vol. 4, No. 1, pp. 42-57, (February, 1933).
- Wallin, J. R. Wallace, "The Consistency Shown by Intelligence Ratings Based on Standardized Tests and Teachers Estimates"; in Journal of Educational Psychology, Vol. 14, No. 4, pp. 231-246, (April, 1923).
- Weiss, La Berta A., "Rating Scales"; in Psychological Bulletin, Vol. 30, No. 3, pp. 185-208, (March, 1933).
- Whitely, Paul L., "A Study of the Allport-Vernon Test for Personal Values"; in Journal of Abnormal and Social Psychology, Vol. 28, pp. 6-13, (1933).
- Wrightstone, "Validity of Woodworth-Mathews Personal Data Sheet"; in Journal of Educational Psychology, (January, 1934).
- Yepsen, Lloyd, "A Score Card of Personal Behavior"; in Journal of Applied Psychology, Vol. 12, No. 1, pp. 140-147, (1928).

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