AN ABSTRACT OF THE THESIS OF

MAX D. MCGLASSON for the M. S. in Education
(Name) (Degree) (Major)

Date Thesis presented August 14, 1936

Title A STUDY OF THE RELATION OF EXPRESSED AND DETERMINED INTERESTS OF HIGH SCHOOL STUDENTS.

Redacted for privacy

Abstract Approved:
(Major Professor)

The purposes of this thesis are to study the relation of expressed and determined vocational interests of high school students, and to ascertain, if possible, the significance of expressed vocational and educational interests of high school students in respect to the guidance program.

The study is based on experimental research conducted during 1936 in the Forest Grove Union High School, Forest Grove, Oregon. The group comprised ninety-five juniors and seniors, both boys and girls. The experimental data is supplemented with library research.

The instruments used in this study include the Strong Vocational Interest Blank, the Otis S elf-Administering Test of Mental Ability, Higher Examination, Form A, and a self-analysis form prepared by the writer. The grade-point average for each student was also obtained.

The study is divided into three main problems namely, the relation of interest to achievement, the relation of interest to intelligence, and the relation of expressed and determined interests. The first problem was studied by correlating the Strong scores with grade-point averages. The second problem was studied by correlating the I.Q. ratings with the Strong scores. The relation of expressed and determined interests was studied by correlating students' expressed interests in particular occupational fields with their ratings on these same fields as determined by the Strong Blank.

Conclusions of the study:

1. The relationship between interest and achievement, although positive, is not sufficiently high to be of predictive value.

2. The relationship between interest and intelligence is negligible. There is a slight indication that this relationship may be negative.

3. The relationship between expressed and determined interests seems to be positive; the correlation for this study being .21.

4. There is a slight indication that the degree of interest does affect achievement.

Conclusions of the study (cont'd)

5. The interest adjustment on the basis of intelligence has no better than a 50-50 chance of being satisfactory.

6. Mother is more influential than any other person in determining a student's vocational choice.

7. Father, Self, Friend, and Teacher show about equal influence in determining a student's vocational choice.

A STUDY OF THE RELATION OF EXPRESSED AND DETERMINED INTERESTS OF HIGH SCHOOL STUDENTS

by

MAX D. MCGLASSON

A THESIS

submitted to the

OREGON STATE AGRICULTURAL COLLEGE

in partial fulfillment of
the requirements for the
degree of

MASTER OF SCIENCE

August 1936

APPROVED:

Redacted for privacy

Professor of Education

In Charge of Major

Redacted for privacy

Head of Department of Education

Redacted for privacy

Chairman of School Graduate Committee

Redacted for privacy

Chairman of College Graduate Council

I wish to express my sincere appreciation to Dr. R. J. Clinton, Professor of Education, for his many timely suggestions and critical reading of the manuscript. Grateful acknowledgement is also made to J. P. McGlasson, principal of the Forest Grove Union High School, who cooperated in the testing program.

M.D.M.

Table of Contents

Table of Contents (Cont'd)

List of Tables

A STUDY OF THE RELATION OF EXPRESSED AND DETERMINED INTERESTS OF HIGH SCHOOL STUDENTS

CHAPTER I

Introduction

The attention of many well known educators is being increasingly focused upon vocational and educational guidance and its significance in the maximal development of the student. Guidance is not a particularly new thing, but it has reached a stage in its development which is provoking much critical analysis of both the techniques and instruments employed. Although viewed by some as unnecessary, this critical analytical period is essential to the future progress of guidance work. In fact, this period is perhaps the most progressive because the situation is being studied objectively with reference to definite desirable outcomes and the unreliability of philosophical procedure is thus eliminated. Therefore, as this period progresses, those things of value in the guidance program will be sifted out and will help to form a firm foundation on which to build.

This study is based upon a definite experimental procedure with the hope that the results may be as objective

as possible. The findings of the study are presented in Chapter III and their interpretations in respect to the guidance program are included in Chapter IV. Few teachers deny the need for student guidance, but, unfortunately, fewer are able to formulate and promote effective guidance. It is the writer's hope that this study may make a significant contribution to the professional literature on effective vocational and educational guidance.

Purpose of the Study

The purposes of this thesis are to study the relation of expressed and determined vocational interests of high school students, and to ascertain, if possible, the significance of expressed vocational and educational interests of high school students in respect to the guidance program.

Location of the Study

The study is based on experimental research conducted during 1936 in the Forest Grove Union High School, Forest Grove, Oregon. The group comprised ninety-five juniors and seniors. Forest Grove Union High School is a standard four year high school having about three hundred sixty-five students in average daily attendance.

Type of Community

Forest Grove is a city of about two thousand population situated twenty-five miles west of Portland. The chief occupations in this district are farming, dairying, lumbering, and the ordinary business enterprises characteristic of such a community. The nearness of Forest Grove to Portland makes it convenient for some who live in Forest Grove to work in Portland thus additional business opportunities are afforded. Diversified farming is perhaps the most important occupation in this district, and many of the high school students come from families so engaged. These characteristics make Forest Grove Union High School a typical high school.

Cooperation of the Students

The ninety-five juniors and seniors who participated in this study were eager and willing to do so. All juniors and seniors were allowed to participate and no one was persuaded to take any of the tests or fill out any of the blanks. During the experimental work the students were especially cooperative and interested, and each one would have gladly spent considerable time in conference if the opportunity had been offered. The participating students were eager to get the results of their tests and to under-

stand their positions in respect to the accepted norms.

Justification of the Study

Since there is, at the present time, no organized attempt at guidance in the Forest Grove Union High School, this study seems justifiable on the grounds that it may open the way for some organized means of dealing with student-adjustment problems. The latter seems highly desirable if the cooperativeness of the students in this study is any criterion.

Methods of the Study

The materials for the study were obtained from experimental and library research, the former being treated in Chapter III and the latter in Chapter II.

Instruments Used in the Study *

The instruments used in the study include the Strong Vocational Interest Blank, the Otis Self-Administering Test of Mental Ability, Higher Examination, Form A, and a self-analysis form prepared by the writer. The grade-point average for each student was also obtained.

---

* see Appendix A.

Description of the Instruments Used

The Strong Vocational Interest Blank is a standardized blank for comparing one's vocational interests with those of a group of persons who are successfully employed in a particular vocation. This group is known as the criterion group and each occupational field has a key based on its corresponding criterion group. At the present time it is possible to score the men's blank on thirty fields. The Strong Blank is also available for women. The women's blank differs somewhat from the men's, particularly in respect to the occupational fields represented. The women's may be scored on seventeen fields. The ratings on the Strong Blank are given in terms of A, B, and C. Wherever the Strong Blank is used for selecting employees, only those applicants are eligible who make either A or B+ ratings. These ratings are determined by comparing one's raw score with the performance of the criterion group.

The Otis Self-Administering Test of Mental Ability is a standardized test which has received wide usage for this purpose. The raw scores are easily converted into I. Q.'s, and it is convenient for group analysis. The reliability of this test is .92.

The self-analysis form was prepared to follow the Strong Blank. It consists of three parts. Part I pro-

vides for the student to express his vocational choice, and, if possible, in terms of the occupations represented on the Strong Blank. These expressions were made in terms of A, B, and C, corresponding to the ratings on the Strong Blank. Part II asks for information regarding who has had the greatest influence on the student's choice of a vocation. Part III provides for the expression of future educational training.

The grade point average of each student participating in the study was obtained from the student's permanent record.

Experimental Procedure

The self-analysis form was prepared to get the student's self expression of his vocational interest. In order to accomplish this and also to have some basis for comparison, the self-analysis form was made to follow the occupational fields represented on the Strong Blank. Since the group included both boys and girls, it was necessary to prepare self-analysis forms for both forms of the Strong Blank. These self-analysis forms were then administered and the expressed vocational interest obtained. No student was forced to choose one of the occupations listed, provision being made in all three parts for writing in his responses. This form provided for rating an

"A choice", "B choice", and "C choice". These choices were to be interpreted as one's first choice, his second choice, and third choice, respectively.

The Strong Vocational Interest Blank was given next, and it was scored on the same three occupational fields as the student chose on his self-analysis form. Thus with the completion of this part of the experiment, each student had expressed his interest, and the Strong Blank yielded a corresponding rating--his determined interest.

There are no special features to be mentioned here about the mental testing; this was done in the ordinary manner.

Limitations of the Study

One limiting factor was the time required to score the Strong Blank. For any occupational field, a corresponding key must be applied which takes from ten to fifteen minutes. The blank was scored for three occupational fields for each of the ninety-five students. The scoring, therefore, represents many hours of work and limits the number of students in the group. This limiting in number of students is unfortunate when the data are to be handled statistically. However, all correlations, unless otherwise stated, are found from the whole group. While the reliability of one hundred cases will always have

a rather large probable error except for high correlation coefficients, it is felt that the data presented here are significant and representative of trends.

Another limitation which might be mentioned is that of the reliability or lack of reliability of students' choices. This factor is always present, however, in studies of this kind. It was guarded in this study by giving careful and explicit directions at the outset of the experiment.

CHAPTER II

Related Studies -- Historical Aspects

As freedom is extended, the student is given more choice in what he studies, and this freedom of choice presents problems to both the student and teacher. This chapter will attempt to relate this extension of student choice to the increasing emphasis being placed upon the value of interest in relation to one's choices. The attempt will also be made to trace the development and experimental work concerning interest for prognostic purposes. As a third point, the available material on expressed and determined interest will be investigated.

Is this freedom of choice detrimental to the student or, on the contrary, is it sound logic, and an assurance of the desired outcomes to allow a student to proceed along lines of his apparent interest? What assurance, if any, may one have that a student's expressed vocational or educational interest is his real interest? The following paragraphs are presented with the hope of throwing some light on these questions.

The idea that one's interest is an important factor in determining what one will do and how well he will do it is not new to the modern educator nor to the layman. People have long realized that the way problems are attack-

ed is partially dependent on what is called interest. Many writers approach this subject by dividing interest into intrinsic and extrinsic elements. Thus a student may be motivated either intrinsically or extrinsically. The former type being preferable in most cases.

Intrinsic interest is defined as that focusing of attention because of one's own self desire to learn or respond in an individual or characteristic way to a particular situation. Its foundation lies in the individual's desire for mastery. Its presence is the best assurance of the maximum expenditure of time and energy with attention focused on the means as well as the end result.

Extrinsic interest lacks the personal element. Its foundation is couched in some factor outside the individual. Extrinsic interest acts as a whip to help bring the individual into the proper relation for learning. Its only justification for existence lies in the possibility of its being transformed by the individual into intrinsic interest.

Whatever else that might be included here would only help to differentiate more clearly between intrinsic and extrinsic interest, and this would seem unnecessary. Continuing with the first general hypothesis that interest, whether intrinsic or extrinsic, is an important factor in determining one's actions, let us see what some of our

prominent educators have to say on this subject.

In speaking of Interest and Effort in Education, Dewey has this to say:

Dewey, John, Interest and Effort in Education, p. 7.

> The genuine principle of interest is the principle of the recognized identity of the fact to be learned or the action proposed with the growing self; that it lies in the direction of the agent's own growth, and is, therefore, imperiously demanded, if the agent is to be himself. Let this condition of identification once be secured, and we have neither to appeal to sheer strength of will, nor to occupy ourselves with making things interesting.

In this passage it is clear that Dewey is emphasizing the need for recognition and development of interest. The latter part of this reference points clearly to Dewey's conviction that genuine interest is a potent factor in one's actions. Along this same line King has this to say:

King, Leo Hamilton, Mental and Interest Tests, p. 1.

> Educators have realized for some time past the great waste which is prevalent in every field of education, particularly in the field of instruction. Here, there has been and continues to be a vast amount of waste, shown annually in the large numbers of students who fail in subjects because they have no particular interest in them, or because in their pursuit they manifest little ability.

King's statement applies directly to the waste in school. While not all waste is ascribed to lack of interest, he gives it a place nearly comparable to that of lack

of ability. The following paragraphs from Thorndike should help to define and clearify the point in question.

Thorndike, Edward Lee, The Psychology of Wants, Interests and Attitudes, p. 108.

> Learning and work in homes, schools, and shops is, and perhaps always will be, loaded with many items which have little or no intrinsic interest to the learner or worker. He is induced, or induces himself, to learn them by appeals to pride, self-respect, love of parents, desires for approval, prudence, and the like.
>
> The general view of a hundred years ago was that any one interest would do about as well as any other, that for example, the interest in avoiding a beating would lead one to learn Latin about as well as an interest in linguistics. The approved view of today is that an intrinsic interest in the activity regardless of ulterior consequences is an enormously superior means of learning.

These men are in substantial agreement with respect to their belief concerning the motivating power of interest. The old adage that "you can drive a horse to water, but you can't make him drink", seems to be true. The important implication for the teacher might be that, "you can teach to a student, but you can't make him learn", and sadly enough this likewise seems to be true. The picture, however, seems to offer an entirely different view if the horse happens to be thirsty or if the student happens to be interested, for then much drinking is done.

Up to this point the evidence presented, while sound

and from good authority, is largely subjective. This fact of subjectivity does not entirely invalidate the evidence, but from a purely scientific standpoint objective evidence is preferred. The following experimental data is presented in support of the above opinions.

Nemoitin has conducted an experiment for the purpose of studying the relation between interest and achievement. His plan was to compare the average grades of subjects "liked best", "liked second best", "disliked most", and "disliked next as much", with the grade average of all other subjects combined. This plan was carried out for a group of one hundred fifty high school seniors, both boys and girls. The results of Nemoitin's study appear as follows:

Nemoitin, Bernard O., "Relation between Interest and Achievement", Journal Applied Psych., Vol. 16, p. 59-73, 1932.

---

1. The degree of relationship between ability in high school courses "liked best", "liked second best", "disliked most", and "disliked next as much", and average ability for high school courses is expressed by the correlation-coefficients $+0.60 \pm .04$, $+0.49 \pm .04$, $+0.58 \pm .04$, and $+0.57 \pm .04$, when data obtained from 150 high school seniors is considered. Thus a "substantial and marked relationship" is shown to exist between interest and ability, at least in high school courses.

2. A study of the average difference between the grade received in the course "liked best" and the grade in all other courses combined showed the former to be 1.86 points higher. The grade in the course "liked second best" average

.73 points higher. Similar relationships determined for the courses "disliked most" and "disliked next as much" showed their grades to be 1.77 and .95 points lower, respectively, than that for all other courses combined. This corroberates the results obtained in (1) above.

3. The relationship between interest and ability was found to become more variable and hence less reliable as the degree of interest considered moved from the extremes.

4. Recency of contact with a course was found to affect the choice of the courses disliked more than that of courses liked.

5. As I have indicated, the two factors necessary for success in any endeavor are interest and ability. These have been shown in this study to be closely related, which suggests that the task of vocational guidance may be reduced to testing for one of the factors -- interest -- instead of both.

Nemoitin's set-up seems to be a sound one for measuring the relation between interest and achievement. He proceeds with the same general hypothesis as that of the writer's previously referred to, namely, that a student will achieve most in subjects "like best", and he will achieve least in subjects "disliked most", with corresponding degrees of success in subjects "liked second best", and "disliked next as much". Nemoitin starts out to investigate the Relation between Interest and Achievement, but in his conclusions he substitutes ability for achievement. Either he assumes that they are the same thing or else he uses the words interchangeably. In point number (1) the correlation coefficients seem high enough to warrant concluding that, "thus, a'substantial and marked

relationship' is shown to exist between interest and ability, at least in high school courses". The fact that he uses "ability" in terms of high school courses saves this point and the succeeding three points. But notice again the conclusion in point number (5): " ..... the two factors necessary for success in any endeavor are interest and ability. These have been shown in this study to be closely related, which suggest that the task of vocational guidance may be reduced to testing for one of the factors -- interest -- instead of both". It is quite plain on this point that Nemoitin is assuming ability to be synonomous with the degree of achievement. His reference to the task of guidance being reduced to testing for one instead of two factors makes it evident that he believes capacity or ability goes hand in hand with achievement. This conclusion implies that all the guidance counsellor needs to do is to ascertain one's vocational interest, and, after doing so, sit back and feel satisfied that the person in question is on the road to success because interest assures the necessary degree of ability. One might ask Nemoitin these questions: Does interest determine ability, or does ability determine interest? What objective evidence can be produced to show a high degree of positive relationship between interest and capacity to achieve? If he can prove that interest

determines ability then perhaps all his conclusions are valid, but if ability precedes interest then point (5) needs some revision.

Dunlap has made a study of Preferences as Indicators of Specific Academic Achievement of seventh and eighth grade pupils.

Dunlap, Jack W., "Preferences as Indicators of Specific Academic Achievement", Journal Applied Psych., p. 411-415, September 1935.

He developed a preference blank the results of which were correlated against achievement in literature, arithmetic, geography, grammar, history, and general achievement. The Metropolitan Achievement Test, New York Edition, Form A, was used to measure achievement. The Terman Group Test of Mental Ability was also used in order that the relation between interest and intelligence might be studied. The following revised table after Dunlap gives the correlations for this study.

Table I

The Intercorrelations between Certain Sub-tests of the Metropolitan Achievement Test, Expressed Preference, and the Terman Group Test of Mental Ability.
(Adopted from Dunlap)

Subject	Grade	Ach. vs. Exp. Pref.	Ach. vs. Intel.	Exp. Pref. vs. Intel.
Literature	7	.56	.63	.45
	8	.35	.54	.37
Arithmetic	7	.31	.54	.28
	8	.30	.46	.38
Geography	7	.46	.58	.30
	8	.40	.62	.36
Grammar	7	.48	.69	.54
	8	.45	.72	.46
History	7	.43	.68	.25
	8	.45	.67	.41
General Ach.	7	.60	.85	.53
	8	.53	.81	.55

Dunlap concludes, " ... that if the preliminary form of the preference blank described above were extended and refined, the expressed preferences of an individual could be used to increase materially the accuracy of the prediction of future academic success at the junior high school level."

The important thing to be noted here is that all the correlations between expressed preferences and achievement are positive. Dunlap gives the average correlation between various achievement scores and preferences to be .47 for the seventh grade and .42 for the eighth grade.

Shlaudeman has attacked the problem of the Relation between Achievement and Interest by use of the Strong Vocational Interest Blank and the Iowa High School Content Examination. The purpose of this study was to see what relationship existed between one's score on each of the occupational fields of the Strong Blank and his score on the Iowa Examination. The following are the summarizing paragraphs:

Shlaudeman, K. W., "Relation Between Achievement and Interest," Junior College Journal, Vol. 4, p. 304-7, 1934.

> These findings cannot be interpreted as meaning that any individual's scholastic ability can be predicted from his scores on the Interest Blank, or vice versa. It must be borne in mind that for no vocation was the correlation between Interest Blank scores and Iowa scores more that .43, and correlations of this magnitude are of very little worth for purposes of individual prediction.
>
> The results of the present study can hardly be regarded, then, as having any immediate practical application to problems of guidance. They do, however, shed a little light on one aspect of an important psychological problem. The findings reported above seem to indicate that interests and abilities (at least those dealt with here) bear significant and apparently rather complex relations to one another. As has already been pointed out, our present state of knowledge in this field is such that any conclusions regarding the exact nature or meaning of these relationships would have to be very much in the nature of a guess.

Since there is a lack of objective on the relation of interest to achievement it seems probable that

Shlaudeman's closing remark that, "any conclusion regarding the exact nature or meaning of these relationships would have to be very much in the nature of a guess", is perhaps closer to the truth than the conclusions presented by Nemoitin. The fact that Shlaudeman concludes that interest and achievement "bear significant and apparently rather complex relations to one another" should encourage further investigation along this line. There seems to be little doubt that interest does affect achievement, but just how these two factors are related will necessitate a great deal of experimental research.

The evidence presented to this point regarding the relationship of interest and achievement might lead one to conclude that the measurement of interest is of no value. In regard to how the results of the interest examination are to be handled Fryer presents the following:

Fryer, Douglas, Measurement of Interest, p. 436-37.

> Abilities are correlated with achievement and success, and an adjustment of the individual according to his abilities is valuable to industry, in education, and to society, as well as to the person himself. The question is raised: "If interests are not correlated with success and achievement to a degree valuable for prediction, of what value is it to measure them?" This question has all the philosophy of nineteenth century efficiency behind it. A measure of interests is valuable for its own sake, to permit a more happy adjustment to life. The happiness of the individual grows out of his interests. According to some, the measurement of interest may be more valuable to the individual in his

> adjustment than the measure of abilities. If one were a social philosopher, one might say that the ability measure belongs to society, the interest measure to the individual
>
> . . . . . .
>
> The real value of the examination of interests lies in its measure of development. It is a measure of an aspect of personality separate from anything else. It is a measure of individual interests, morale, and potential happiness, of which the essential quality is pleasant feeling. A measure of interests is valuable, not because from it we can predict abilities, not because from it we can predict achievement or success, although we may incidentally do so, but because it is a measure of the individual's feeling life in a certain environment. A knowledge of the individual's interests facilitates an adjustment of the individual with respect to his feeling life, just as knowledge of the individual's abilities assists in adjustment of the individual in educational and vocational efficiency.
>
> Now we have an answer to the question: "What are we going to do with the interest examination results?" We are going to recommend an interest adjustment and an interest development, as complete as possible, within the scope of the individual's abilities, and expect thereby that social efficiency and individual happiness may result.

Fryer seems to be optimistic about the possibilities of the interest examination even though its results do not seem sufficiently valid and reliable for predictive purposes. His idea that it will help the individual make his "feeling" adjustment is significant and is essentially the idea expressed by Thorndike in a previous reference. The argument presented by Fryer is further support of the idea that one's interest is a vital factor in what one

will do, how well he will do a task, and how satisfied or dissatisfied he will be with a certain job.

The present great need for individual adjustment makes it unfortunate that the results of the interest examination cannot be considered highly reliable. With continued research along this line, it is not improbable that the future will see this type of measure take a place in measurement comparable to that of the intelligence test and the achievement test. The attention of the reader is now called to a related problem, namely, the relation of interest to intelligence.

Fryer says that the measurement of interests began

Fryer, Douglas, op. cit., p. 17, p. 362.

---

about 1920 and that at this time the two major problems were (1) "The study of the permanence of interests for prediction of future interests; and (2) The study of the relation of interests to abilities for the prediction of abilities." Since 1920 a great deal of experimental work has been done in an attempt to establish the relationship between one's interests and his abilities. The measure of ability has often been the intelligence test and much of the following work uses this basis. The investigators of this pro-

blem have, in general, had to assume that they were comparing measures of two traits which were in a sense reliable measures of these traits. That is to say, that the intelligence test does measure one's ability to achieve, and that the interest examination does measure, not only the scope, but also the degree of interest. If these assumptions are sound then the results, regardless of their nature, shouldhave some significance. The research presented here deals with both the relation of estimated and inventoried interests to intelligence, thus dividing the problem.

Fryer has made a study of the relationship of esti-

Fryer, Douglas, op. cit., p. 191-96

---

mated interests and intelligence. His procedure was to have the student estimate his vocational interest and then to place him according to the occupational-intelligence norms given by Fryer in an article on, "Occupational-Intelligence Standards" in School and Society, 1922, XVI, 273-277. The individual abilities were measured by the Army Alpha intelligence examination. The plan was to see how well the individual's estimated interest at the elementary level, the high school level, and the college level, would place him according to his intelligence.

This plan was carried out for both a Western group and an Eastern group. The following paragraph gives the results of Fryer's study:

> It would appear that the usual relationship between the subject's intelligence requirement of the occupational interests, is expressed by the following correlation coefficients.
>
> For elementary school (later years)------ .10
> " high school (other than at graduation) .20
> " college (other than at graduation)--- .10
> " advanced vocational school---------- .60
> " occupational work (ages 20-30)-------- .40

Feingold's investigation, which was very similar to Fryer's, gives the correlation between intelligence and

---

Feingold, G. A., "The Relation between the Intelligence and Vocational Choices of High School Pupils," Journal Applied Psych., Vol. 7, p. 152, 1923.

---

vocational choice as $+.045 \pm .042$ for boys and $+.0987 \pm .041$ for girls.

Proctor has also studied this problem. A correlation worked from his data and reported by Fryer gives this

---

Fryer, Douglas, Measurement of Interest, p. 195.

---

relation as $.21 \pm .02$. The results of these three studies are in substantial agreement. It would seem that estimated interest bears little or no significance to intelligence. It is certain that whatever relationship does exist is too small to be of prognostic value. Fryer is of the opinion

---

Fryer, Douglas, op. cit., p. 201.

---

that, "while interests and abilities often fit together in the mental life of the individual the prediction of an ability adjustment from estimated vocational interests is, on the average, at about a 50-50 basis". It may also be seen from the foregoing that the value of interest for predicting an ability adjustment varies according to the educational development. The following table by Fryer

---

Fryer, Douglas, op. cit., p. 201.

---

points out this fact very clearly.

Table LV. Prediction for Educational Groups from Estimated Interests of Occupation for Which Individual Has Intelligence Requirements.

Educational Groups	Chances in 100 for the Prediction
In Elementary School (later years)....	30
In High School (other than at graduation).....	40
In College (other than at graduation).	45
In Occupations (between 20 and 30 years of age).....	45
In Specialized Vocational Schools (requiring high school graduation)..	75

This table shows the tendency for the predictive value of interests to become greater as the knowledge of the occupational fields increases. This tendency seems logical for then one's choice is based on a greater amount of experience. It is not surprising that the correlation

coefficient drops to .10 for the college group. This may be due to the fact that the college group is more select in respect to intelligence and thus the ability adjustment according to intelligence becomes more difficult. The fact that there is a preponderance of occupations not requiring average or superior intelligence helps to lower the correlation for the college group.

Fryer's study of the expressed vocational ambitions of ninety-eight individuals and their intelligence ratings

---

Fryer, Douglas, "The significance of Interest for Vocational Prognosis," Mental Hygiene, vol. 8, p.466-505, 1924.

---

yields further information on the relation of estimated interest to intelligence. Fryer states that, "....The correlation coefficient for the two factors, interest and intelligence, for these cases is +0.38 (±.058) -about four-tenths of perfect resemblance". The individuals in this study were mature, and their expressions of vocational ambitions should be more reliable than the expressions of some of the other groups cited.

The investigations cited here have been strictly concerned with individual interest and ability adjustment. All available evidence seems to show no significant relationship between one's estimated interests and his intelligence. According to Garrett, a correlation coeffi-

cient is not significant for predictive purposes unless it

Garrett, H. E., Statistics in Psychology and Education, p. 170.

---

is four times its probable error. None of the foregoing coefficients on the elementary, high school, or college level meet this criterion.

It seems that there has not been much investigation on the problem of interest and intelligence. The studies previously cited have dealt with estimated interests while the following deal with inventoried interests and intelligence. The relation of inventoried interests and intelligence has been studied by Kornhauser. An interest ques-

---

Kornhauser, Arthur W., "Results from a Quantitative Questionnaire on Likes and Dislikes Used with a Group of College Freshmen," Journal App. Psychol., vol. XI, p. 85-94, 1927.

---

tionnaire was developed and given to 108 college students. The correlation between the questionnaire scores and the Otis intelligence test was found to be .29. In speaking of the reliability of his results Kornhauser states that:

> ....Evidence of the serious lack of reliability is disclosed by a comparison of the correlation coefficients for two different groups. For the 45 people who were used in our sample groups, the correlation between questionnaire score and first year marks was 0.73; the corresponding relationship for the other 63 students of the 1923 class was 0.17. The coefficient of 0.73 is in a sense ficticious, since the items

were deliberately chosen in a manner to make this correlation as close as possible. The fact that the correlation is only 0.17 for the remaining members of the same general group indicates that the method gives results so inconsistent and unstable as to be of little value.

Remmers has studied a group engineering and agri-

Remmers, H. H., "The Measurement of Interest Differences between Students of Engineering and of Agriculture," Journal Applied Psych., Vol. XIII, p. 105-119, 1929.

---

cultural students in respect to their interests and intelligence. The Purdue Interest Report Blank was used to measure interest, and the National Council on Education Psychological Examination was used to measure intelligence. The correlation between the interests of the agricultural students and their intelligence was found to be 0.42 ± 0.063 and for the engineering students this relationship was 0.19 ± 0.076.

Remmers suggests in conclusion that "The correlation of whatever is measured by the Purdue Interest Report Blank with mental-scholastic aptitude tests or with scholastic achievement is negligible."

The relation between expressed interests and determined interests seems to have been neglected or else this relationship has been taken for granted. It seems that if the relation between expressed and determined interests is not unity, another problem is presented. It appears that there has been little or no attempt to solve

this problem experimentally.

If a boy says he wants to become a doctor, for example, how much can his parents or teachers rely on his expressed interest in the medical profession? Guidance has helped to open the way for individual expression, but now that we have such expression what are we going to do with it? What is the value of a student's choice? When a student, with certain interests, goes to the counsellor for advice, to what extent can these interests be considered? During the early days of guidance, expressed interests received much attention, but, more recently, guidance on the basis of expressed interests has been frowned upon. Now, it seems that the guidance counsellor's advice increases in reliability as he obtains more information about the individual. For this reason, determined interests are becoming more important.

In speaking of the categories of interest and the relation of estimated and inventoried interests Fryer says:

Fryer, Douglas, Measurement of Interests, p. 223.

> ....Here, as in the study of vocational interests, the investigations using the interest estimates and the investigations by means of the inventory will be kept separate. It would seem that the two approaches measure approximately the same thing, but there is little evidence upon which to base an answer to this question of relationship. However, the inventoried interests are usually regarded as a more valid and reliable measure.

Chapter III of this study contains a section on this problem. Further discussion and experimental data on the relation of expressed and determined interests are presented there.

The opinions of authorities and data from experimental studies have been presented in this chapter. The problems dealt with in their order of appearance are first, the relation of interest and achievement, second, the relation of interest, both estimated and inventoried, to intelligence, and third, the relation of expressed and determined interests. Answers to these problems would greatly increase the effectiveness of guidance. Chapter III presents the findings of this study on the above problems.

CHAPTER III

Findings of the Study

The purpose of this chapter is to present the experimental data of this study. All of the evidence presented here was obtained by experimental procedure in the Forest Grove Union High School, Forest Grove, Oregon. Ninety-five juniors and seniors, boys and girls, were given the Strong Vocational Interest Blank, the Otis Self-Administering Test of Mental Ability, Higher Examination, Form A, and a self-analysis form prepared by the writer. Grade-point averages for each student were also obtained. These sources provided the data for the statistical study of the relation of interest and achievement, the relation of interest and intelligence, and the relation of expressed and determined interests.

In order to get correlations for the above relations the Strong scores had to be interpolated into comparable terms. The I.Q. ratings and the grade-point averages were all right. The problem of getting the Strong scores on the various occupational fields into comparable units presented considerable difficulty.

It was desired to get correlations between the "A" choices, the "B" choices, the "C" choices, the total Strong scores, the intelligence ratings, and the grade-

point averages. It will be remembered that the "A" choices, for instance, included many different occupational fields. For this reason a raw score on Engineering scale was not comparable to the same point score on Farming scale. The same was true for the other choices as well as the total score. Before correlations could be made it was necessary to make an "A" rating on Doctor scale, for instance, comparable to an "A" rating on any other field, and similarly for all other ratings. This was accomplished by choosing an arbitrary scale and relating all scores to it.

An arbitrary scale of 100 points was divided so that all "C" ratings would fall at 30 or below, "B" ratings were between 30 and 60, and "A" ratings at or above 60. Since a raw score on the Strong Blank represents a degree of interest in a particular occupational field, it was felt that if some scheme could be devised whereby this degree of interest could be represented on an arbitrary scale without changing its relative position, that then it would be possible to compare the degree of interest in any choice-category with either intelligence ratings or grades. A little experimentation showed that this transformation of scores could be performed without a score losing its original meaning. Since this was true, it seemed proper to transform all the scores in the various choice-categories in order to make the desired correlation.

A mathematical formula was derived for the purpose of transforming the Strong scores. This formula used the rating points on the Strong Keys and the corresponding points on the arbitrary scale. The formula, $\frac{Y - Y_1}{Y_2 - Y_1} = \frac{X - X_1}{X_2 - X_1}$, expresses this relationship where Y_1 and Y_2 were the points 30 and 60, respectively, on the arbitrary scale, and X_1 and X_2 were the "C" point and "A" point, respectively, on the key of the particular occupational field. X represented the original score and Y the transformed score. This formula was simplified by substituting the numerical values. The above formula takes this form for Doctor, $Y = 30 + .164\ (X + 11)$. To get the transformed score, one simply substituted the original score for X and solved for Y. A similar formula was worked out for each occupational field. When this procedure was followed for each Strong score, all point scores in the choice-categories were put on the same scale and could therefore be correlated by the ordinary Pearson Product-Moment technique for distributed data.

Relation of Interest to Achievement

The first problem to be taken up here is that of the relationship of interest and achievement. This problem was studied by comparing a student's grade-point average with his total score on the Strong Blank, and

also with his "A" choice, his "B" choice, and his "C" choice scores. Table I shows the correlations between the grade-point averages and the Strong scores.

TABLE I

Showing the Relation of Interest and Achievement

Scores correlated	No. of Cases	Correlation Coefficient	Probable Error
Total Scores vs. Grade Av.	95	.19	.065
"A" Choices vs. Grade Av.	95	.22	.065
"B" Choices vs. Grade Av.	95	.04	.069
"C" Choices vs. Grade Av.	95	.09	.068

While all of these correlation coefficients are positive none of them meet the criterion for a significant correlation. The fact that the correlation for "A" choices is the highest suggests that this relationship increases with the degree of interest. Since the correlation is .19 for the total score it may be that the relation for the combined score is nearer to the true relationship. The tendency for the correlations for the "B" and "C" choices to be very small is further support of the statement that this relationship varies with the degree of interest.

Since none of the coefficients of Table I are high

enough to be of value for prognostic purposes, just how is one to interpret these facts? It is certain that for this group there is no significant relationship between one's vocational interest as measured by the Strong Blank and his achievement as measured by his grade-point average. These facts seem to corroborate those of Chapter II.

Although the investigations referred to in Chapter II have been conducted differently from the procedure used in this study, the psychological aspects are essentially the same. Since students' "A" choices correlate only .22 with grade averages, it may be that a student rates very low in his chosen occupational field and yet has proven himself to be capable of high achievement as indicated by his grade-point average. It seems that those students with high grades would have developed more stable interests and attitudes, and conversely, it would seem logical to expect the student with low grades to have unstable interests and attitudes. For fear of being misunderstood, it may be timely to insert here, that the writer is fully aware of many other factors influencing one's interest.

From the guidance standpoint, this is a pertinent problem. Guidance has proceeded on the assumption that the intelligent students and the students who get along well in school will make their adjustments all right.

The evidence presented here would seem not to favor this assumption. It may be noted by reference to Appendix B that some of the best students, from the standpoint of grades and intelligence, have made the poorest scores on the Strong Blank. This suggests that the better students need just as much guidance as the poor students. From the social standpoint, any guidance program which neglects the better and more intelligent students is failing to achieve its purpose.

While the evidence in Table I is not significant for predictive purposes, it does hold a great deal of meaning for a counsellor. The policy to be followed by the counsellor, as indicated by these data, would have as its predominant theme, "caution". Every care must be taken to avoid prediction on the basis of unreliable information. It is to be remembered that the determined vocational interests used here are the scores on the expressed occupational interest-fields. The wise counsellor will make use of one's vocational interests, but he will also consider many other factors before giving advice. The same may be said for achievement.

The correlation of .04 between "B" choices and grade-point averages may be interpreted to mean that the chance of high grades meaning high vocational interest scores in occupational fields of second choices is little

more than 50-50. This must mean that one's second vocational choice is of no value in prognosis. It further suggests that one's interests as compared to the interests of successfully employed people have practically no chance of being comparable except for "A" choices. The same interpretation may be given to "C" choices. It seems safe to say that second and third vocational choices are of no value except to help to establish an interest pattern.

Relation of Interest to Intelligence

The relation of interest to intelligence was studied by a means similar to that used in the previous section. The Otis Test scores were converted in I. Q.'s and these were correlated with the grade-point averages. Table II shows these correlations.

TABLE II

Showing the Relation of Interest to Intelligence

Scores correlated	No. of Cases	Correlation Coefficient	Probable Error
Total Scores vs. I.Q.	95	-.066	.068
"A" Choices vs. I.Q.	95	-.002	.069
"B" Choices vs. I.Q.	95	-.078	.068
"C" Choices vs. I.Q.	95	.047	.069

The facts in this table are considerably scrambled. There does not seem to be any sequence either positively or negatively. The negative correlations for the total scores and the "A" choices would hardly be expected in view of the fact that the corresponding coefficients were positive in Table I. If there is a relationship which has predictive value, it seems that its basis must be grades instead of I. Q.'s. This idea is expressed by many authorities. Some authorities believe that the more intelligence students have more difficulty in making proper interest adjustments. The data in Table II supports this opinion.

If the idea expressed above can be considered as valid, then the problem of guidance on the basis of intelligence is perhaps even more unsatisfactory than that based on achievement. This greatly complicates the problem of guidance because two of its former bulwarks seem to be weakening. The interest adjustment of the more intelligence student has no better than a 50-50 chance of being satisfactory when based on intelligence alone. The fact that the correlation for the "C" choices is slightly positive while all the others are negative is further support of the latter statement. The correlation for "B" choices is of no greater importance here

than in Table I.

Judging from the evidence in Table II and that presented in Chapter II, it seems that the more intelligent students need guidance just as badly as the poor students. A cursory glance at the raw data in Appendix B supports this conclusion. From the standpoint of the greatest possible development of the individual, it is no safer to let the more intelligent students go unguided than it is to allow the low intelligence students to fumble along. Democracy in education has not yet been achieved, and to do so will necessitate recognition of problem cases at both extremes of intelligence.

Relation of Expressed and Determined Interests

The relation between expressed and determined interests was studied by correlating the choices of the self-analysis form with the corresponding ratings on the Strong Blank. This relationship was found to be .21±.065. Table III gives this relationship in percentage form.

TABLE III

Showing the Relation of Expressed and Determined Interests in Percentage Form.

Expressed Interests		Determined Interests A	B	C
	A	43.16%	36.84%	20.00%
	B	33.68%	32.63%	33.68%
	C	8.42%	25.26%	46.32%

The Table reads: 43.16% of the students received "A" ratings on their "A" choice; 25.26% received "B" ratings on their "C" choice. It reads the same for other items.

A consideration of the correlation coefficient together with the percentages of Table III, make it evident that there is little relationship between one's expressed vocational interest and his vocational interest as determined by the Strong Blank. While there does seem to be some positive relationship, it is negligible. Although this evidence is in substantial agreement with that previously given, it would seem that one's expressed interest would bear a higher relationship to his determined interest. If this can be considered to be the true relationship between expressed and determined interests which is the more reliable measure? The final answer to this question cannot be given now. Continued research will help to establish this relationship.

The opinion of authorities seems to favor the use of

determined interests instead of expressed interests. If this is the general consensus of opinion then the problem is partially solved until more objective evidence can be produced. This, however, does not solve the accompanying psychological problem and its relation to effective guidance.

If a student has his heart set on becoming an engineer, then his expressed vocational interest is Engineering. If the determined interest in Engineering for this student is not comparable to his expressed interest, then a psychological problem arises. What will be the effect of this conflict? It is not uncommon for a student with a high degree of expressed interests to get a low rating when his interests are determined. How can this inconsistency be explained? A further analysis of the self-analysis may help to throw some light on this latter question.

If the relationship between expressed and determined interests is not higher than that presented here, then maybe we should not encourage students to choose vocations. Perhaps it would be better to perfect the interest inventory and at a certain stage of a student's development determine his occupational interests and therefrom advise him to prepare for a certain kind of

work. Such a procedure, desirable as it might be, would certainly encounter great difficulties. It is already realized that interest inventories can be "fooled", so to speak. That is, one can get a fairly high score in a particular occupational field by paying attention to his responses.

The genetic development of the individual cannot be denied; especially as long as democracy is the predominant philosophy of education. This being the case, guidance is going to have to make the best of these relationships regardless of their nature. The fact that the problems in this study have not yielded correlations of prognostic proportions is no reason for despair. In fact, it may be fortunate that precise and high relationships between these human traits are not found. A mechanical like humanity might not be so desirable after all. Who would enjoy looking into the "cook book" whenever he wanted to do something in order to see what his chances of success were?

The multiplicity of implications for guidance from the foregoing problems are centered around the predictive value of interests in relation to achievement, intelligence, and the relation of expressed and determined interests. A concrete example will help to see how the the evidence presented affects the counsellor. When a

student comes to the counsellor for advice, his first problem will be to determine the student's interest. This may be done in two ways, either by an expression by the student or by the use of some type of interest inventory. If the determined interest seems to be satisfactory, the next step may be to investigate the student's achievement and intelligence. If the expressed interest is not comparable to the determined interest, the counsellor will have to proceed more cautiously with the hope of getting further suggestions from the student. Expressed interest provides a good starting point, but its reliability is doubtful.

The average correlation coefficient between achievement and intelligence is about .50. Achievement and intelligence seem to be more reliable factors than interests. For this reason, the counsellor may feel more confident in advising on these matters. These are not all the factors to be considered, but these are very important ones. Other factors include environment, chronological age, sex, nationality, religion, physique, etc.

The term "interest pattern" is being employed to include all the genetic interests and activities of the individual. It is felt that the "interest pattern" is

the soundest basis for guidance. Since everything that an individual does influence his interests, these things must be taken into account along with the measurable traits. Guidance on the basis of any one of the factors presented in this study is not safe. The effectiveness of guidance seems to increase with the information available about the individual--"interest pattern". This follows the idea presented in Chapter I[1] of one's interests becoming more reliable with educational development.

In answer to the question: what is the counsellor to do if all these relationships are too low to be of predictive value? The following may be suggestive. Many students have been advised incorrectly because it was assumed that the relationships between interest and ability and achievement were very high. The fact that experimental evidence does not support this theory does not rob the counsellor of a valuable tool, but rather, it is fortunate that such fallacious proceedings have been brought to light. To know that the relation of interest to intelligence is very low is far more important than to assume that it is very high. To base one's advice on considerable information - "interest pattern " - is sounder procedure than to advise on the strength of an

assumption or a single correlation coefficient.

Factors Influencing Vocational Choice

Part II of the self-analysis form* deals with some of the factors influencing one's choice of a vocation. This section was especially prepared to determine who has had the greatest influence on the student's vocational choice. Table IV gives the results of this inquiry.

TABLE IV

Showing Who Has Had the Greatest Influence on the Student's Choice of a Vocation

Person	Frequency	Percentages
Camp Director	1	1.32%
Uncle	1	1.32%
Friend	12	15.79%
Minister	0	0.00%
Brother	3	3.94%
Business Man	2	2.63%
Mother	22	28.95%
Teacher	11	14.47%
Father	12	15.79%
Banker	0	0.00%
Sister	2	2.63%
Self	10	13.16%

* see Appendix A

The results on nineteen of the self-analysis forms were too incomplete to be included. Five individuals stand out clearly as having more influence than the other seven. Mother seems to be definitely more influential than any other person. It is interesting to note that Father has only little more influence than Self or Teacher and the same influence as Friend. It would seem that Father should have a place more nearly comparable to that of Mother. The influence of Brother and Sister seems to be about equal. It is ordinarily considered that the bankers and businessmen of a community have considerable influence on such things as vocational choices, but the results here do not favor such a conclusion. Relatives outside the immediate family do not have much influence. The fact that Self is given a place nearly comparable to that of Father might suggest that Father is losing his influence or else he never had as much as was presumed. It may or may not be a wise thing for Self to hold this position in relation to Father. Such a condition may be the outcome of recent economic strain. Bedford found that out of "....461 cases in which the occupation of the father was given and in which the son had made a choice of vocation, only fifty boys had chosen the same occupation as that of the

father."

Bedford, J. H., "A Study of Vocational Interests of California High School Students Based on a Survey of Twelve Rural High Schools", California Quarterly of Secondary Education, Vol. 5, p. 59, 1929.

Part III of the self-analysis form provided for an expression of future educational training. The purpose of this section was to see whether or not the students were thinking about going on to school, and, if so, to have them indicate what type of school they expected to attend. Tables V and VI show these results for eighty-four of the ninety-five students. Eleven students gave incomplete data on this point.

TABLE V

Showing Whether or not a Student Expected to go on to School

Response	Frequency	Percentage
Going on to school		
(yes)	75	89.29%
(no)	9	10.71%
Total	84	100.00%

TABLE VI

Showing Percentages Expecting to Attend Different Types of Schools

Type of School	Frequency	Percentage
College or University	37	49.33%
Business College	20	26.66%
Normal School	5	6.66%
Summer School	0	0.00%
Technical School	12	16.00%
Law School	1	1.35%
Total	75	100.00%

The fact that 89.29% of these students indicated expectancy of further educational training would indicate that, as a group, these students have some rather definite plans for themselves. This fact is borne out more clearly in Table VI since not all wanted to go to college. If the mere idea of going to college had been responsible for so many affirmative responses in Table V, it would seem that the distribution in Table VI would have been more favorable to College or University.

Information of this nature is valuable to the counsellor. The evidence presented here would indicate that high school students have some pretty definite ideas of

what they want to do. Just how such definite expressions as these can be reconciled in light of the correlation of .21 between expressed and determined interests is difficult to determine. There is a suggestion that courses such as "Occupations" or "Choosing a Vocation" might help to increase the above relationships. If such proves to be the case, more meaning could be attached to information concerning future educational training.

CHAPTER IV

Summary and Conclusions

The purposes of this study have been to study the relation of expressed and determined vocational interests of high school students, and to study the relation of these interests with respect to the guidance program. Wherever possible, an attempt has been made to relate the problems of interest and achievement, interest and intelligence, and expressed and determined interests, to guidance.

The available and pertinent material on this problem and allied problems has been surveyed and presented in Chapter II. The experimental data and their statistical interpretation have been treated in Chapter III. The purpose of this chapter is to summarize the discussion, and to draw conclusions from the material presented.

The writer feels that there is a great need for understanding the factor of interest in relation to individual development. Many people fail at seemingly ordinary tasks, and often times their explanation is, "Oh, I'm just not interested!" Is this matter of interest one of those inexplainable human traits, or are there accompanying psychological factors which make for success or failure? If interests involve psychological factors other than

emotions, attitudes, and feeling-tones, what are these factors? Does a high degree of interest in a particular activity unleash or generate ability in that activity? The factor of interest and its influence on human activity seems thoroughly established, and this fact provides the basis for much investigation.

To one interested in student problems, this matter of interest, as a factor of student efficiency or inefficiency, is particularly intriguing. The writer has attacked the problem with the hope that more tangible and usable information might result.

The teacher is continually confronted with the necessity of 'making the course interesting'. The student says: "I'm not interested in history, and why should I take it?" The failing student explains that he is not interested in school. Is being interested and having interests the same thing? Can the kind of interests which make for success be developed in the student? Can the teacher generate this kind of interest in a student? Although these are problems of great magnitude and intensity, their solutions would be invaluable to teachers and to guidance. Even a better understanding of interest would go a long way in helping to solve student-adjustment problems.

Although it may not be possible to solve all the pro-

blems involving interest, it seems that problems of the nature of this study can be investigated scientifically. The perfection of instruments for measuring interest is worthy of much consideration. The development of such instruments will greatly facilitate answering the questions raised above.

Until such time as measuring devices become highly reliable, it seems that the counsellor will have to content himself with being an integrating factor. After all, this may be the true role of the counsellor. Perhaps prediction is not as valuable as it has been thought to be. Perhaps the greatest service of guidance is to "lead a student out", to orient him, rather than to gather facts and make predictions therefrom. While the student possesses a certain flexibility, his adjustments must be made gradually. These adjustments are usually much more satisfactory and lasting if they are self-initiated. The counsellor has every opportunity to make suggestions and oversee the moulding, but he should seldom be the potter. The psychological measures are to the counsellor what the spoke-shave and hammer are to the carpenter. Just as the outcome of the carpenter's labors may be a mass of splintered and battered boards, so may the counsellor misuse his tools. When the carpenter proceeds with care and planning, he is rewarded with a stately house, or a majestic

church spire, and all who pass by become aware of his artistry. Likewise, the counsellor must look to his course. He must see afar off, and yet, not be too eager to reach his destination. His reward comes in seeing those with whom he has worked contented and prosperous. The counsellor must be eager and willing to investigate some of his problems for himself. In the past fifteen years there have been many studies with guidance implications, and the next fifteen years should be even more fruitful.

The relation of interest to achievement has received considerable attention. Many well-known authorities in education have studied this problem. Opinion seems to favor a high degree of relationship between interest and achievement, but experimental proof of such a relationship is lacking. The methods of investigation have varied considerably, and for this reason the results may not represent exactly the same thing. Most authorities consider the psychological aspects of vocational and educational interests to be practically identical, therefore, no attempt has been made to differentiate them in this study.

The experimental evidence, together with authoritative opinion, would indicate that there is a positive relationship between interest and achievement. One author has gone so far as to suggest that the work of guidance

might be greatly reduced because a high degree of interest implies the necessary degree of ability to achieve. The writer's study does not agree with this position. To predict success on the basis of one factor alone would necessitate measuring instruments of much higher reliability than those now employed. Although the correlation coefficients are not high for interest and achievement, they do bear out the contention that this relationship is positive. More investigation of this problem is needed, and the techniques used by one investigator should be tried by others.

The investigations concerning intelligence and interest contain at least one common factor. Nearly all of these studies have employed some kind of psychological examination to measure intelligence. Many methods have been used for measuring interest. Several studies have employed estimated vocational interests and compared them with the occupation-intelligence norms. Although much can be said in favor of this technique, it would seem to be a sounder procedure to use a more specific measure of interest. The technique cited above reveals the interest adjustment, but it is doubtful that it tells very much about the way interest and achievement are related. The investigations based on a comparison of degrees of interest and intelligence give little evidence that these factors

vary directly.

There have been few, if any, investiations of expressed and determined interests. This fact seems hard to explain since both types of measures have existed since the development of the interest inventory some seventeen years ago. It seems that most authorities assume estimated and inventoried interests to be the same. Perhaps they are the same in a broad sense, but when one's estimated interests are compared with those of others and norms are established, then interest items take on a different meaning. A few items responded to either positively or negatively may, according to the norms, differentiate success from failure with respect to interest adjustment. Without norms, the interest inventory loses much of its meaning.

The problem of the relation of expressed and determined interests was investigated in this study by comparing students' expressed occupational interest-field ratings with their corresponding occupational ratings as determined by the Strong Vocational Interest Blank. These ratings gave a correlation coefficient of .21±.065. Further studies should be made using the same technique in order to test these results.

The evidence presented in this study seems to justify the following conclusions:

1. The relationship between interest and achievement, although positive, is not sufficiently high to be of predictive value.
2. The relationship between interest and intelligence is negligible. There is a slight indication that this relationship may be negative.
3. The relationship between expressed and determined interests seems to be positive; the correlation for this study being .21.
4. There is a slight indication that the degree of interest does affect achievement.
5. The interest adjustment on the basis of intelligence has no better than a 50-50 chance of being satisfactory.
6. Mother is more influential than any other person in determining a student's vocational choice.
7. Father, Self, Friend, and Teacher show about equal influence in determing a student's vocational choice.

Suggested Further Studies

1. A re-study of this problem using the same techniques.
2. A study of the reliability of expressed interest.
3. A study of the reliability of determined interest.
4. A study of the affect of interest on the adjustment of high school students.
5. A study of the affect of vocational interests of high school students on their high school courses.
6. An interpretation of the interests of high school students with respect to student guidance.
7. A study of the psychological aspects of interest.

Bibliography

Bedford, J. H. "A Study of Vocational Interests of California High School Students Based on a Survey of Twelve Rural High Schools," California Quarterly of Secondary Education, vol. 5, p. 47-66, 1929.

Bowman, H. L. "Relation of Reported Preference to Performance in Problem Solving," Journal Ed. Psych., vol. 23, p. 266-76, 1932.

Bridges, J. W., and Dollinger, V. M. "The Correlation between Interests and Abilities in College Courses," Psychol. Review, vol. 27, p. 308-14, 1920.

Commins, W. D., and Shank, Theodore B. "The Relation of Interest to Ability in School Subjects," Elementary Sch. Jour., vol. 27, p. 768-71, 1927.

Dewey, John, Interest and Effort in Education, Houghton-Mifflin Company, New York, 1913.

Dunlap, Jack W. "Preferences as Indicators of Specific Academic Achievement," Journal of Ed. Psych., vol. 26, p. 411-15, 1935.

Dunlap, Jack W. "The Predictive Value of Interest Test Items for Achievement in Various School Subjects," Journal Applied Psychol., vol. 19, p. 53-58, 1935.

Feingold, Gustave A. "The Relation between the Intelligence and Vocational Choices of High School Pupils," Journal Applied Psychol., vol. 7, p. 143-53, 1923-1924.

Flinner, I. A. "Strong Vocational Interest Test and Its Use in Secondary Schools," Ed. Rec., vol. 17, p. 138-40, 1936.

Fryer, Douglas, "The Significance of Interest for Vocational Prognosis," Mental Hygiene, vol. 8, p. 466-505, 1924.

Fryer, Douglas, "Interest and Ability in Educational Guidance," Journal Ed. Res., vol. 16,

p. 27-39, 1927.

Fryer, Douglas, Measurement of Interests, Henry Holt and Co., New York, 1931.

Fryer, Douglas, and Sparling, E. J. "Intelligence and Occupational Adjustment," Occupations, vol. 12, p. 55-63, 1934.

Garretson, O. K. "Relationship between the Expressed Preferences and the Curricular Abilities of Ninth Grade Boys," Journal Ed. Res., vol. 23, p. 124-32, 1931.

Garrett, H. E. Statistics in Psychology and Education, Longmans, Green and Co., New York, 1926.

King, I. "Permanence of Interests and their Relation to Ability," School and Society, vol. 6, p. 359-60, 1917.

King, Leo Hamilton, Mental and Interests Tests, Teachers College, Columbia University, New York, 1931.

Kornhauser, Arthur W. "Results from a Quantative Questionnaire on Likes and Dislikes used with a Group of College Freshmen," Journal Applied Psychol., vol. 11, p. 85-94, 1927.

Langlie, T. A. "Interests and Scholastic Proficiency," Personnel Journal, vol. 9, p. 246-50, June 1930-April, 1931.

Lorge, I, "Evidence on the Prediction of Vocational Success," Elementary Sch. Journal, vol. 34, p. 411-13, 1934.

Lorge, I. "The Prediction of Vocational Success," Personnel Journal, vol. 12, p. 189-97, June, 1933-April, 1934.

Nemoitin, B. O. "Relation between Interest and Achievement," Journal Applied Psychol., vol. 16, p. 59-73, 1932.

Proctor, W. M. Psychological Tests and Guidance of High School Pupils, Journal Ed. Res. Monographs, No. 1, June, 1921.

Remmers, H. H. "The Measurement of Interest Differences

between Students of Engineering and of Agriculture," Journal Applied Psychol., vol. 13, p. 105-19, 1929.

Rundquist, E. A. "Intelligence Test Scores and School Marks of High School Seniors in 1929 and 1933," School and Society, vol. 43, p. 301-4, 1936.

Shlaudeman, K. W. "Relation between Achievement and Interest," Junior College Journal, vol. 4, p. 304-7, 1934.

Thorndike, E. L. "The Permanence of Interests and their Relation to Abilities," Popular Science Monthly, vol. 81, p. 449-56, 1912.

Thorndike, E. L. "Early Interests; their Permanence and Relation to Abilities," School and Society, vol. 5, p. 178-79, 1917.

Thorndike, E. L. "The Correlation between Interests and Abilities in College Courses," Psychological Rev., vol. 28, p. 374-76, 1921.

Thorndike, E. L. Prediction of Vocational Success, The Commonwealth Fund, New York, 1934.

Thorndike, E. L. The Psychology of Wants, Interests, and Attitudes, D. Appleton-Cent. Co., New York, 1935.

Uhrbrock, Richard S., "Interest as an Indication of Ability," Journal Applied Psychol., vol. 10, p. 487-501, 1926.

Wilson, M. O. "Interest of College Students," The American Journal of Psychology, vol. 38, p. 409-17, 1927.

Woody, C., and Bergman, W. G. Achievement and Interest of High School Seniors in Michigan, School of Ed. Univ. of Michigan, 1930.

Appendices

Appendix B. Measuring Instruments

Group.....

Key number.....

Form WB. For Students

Date.....

VOCATIONAL INTEREST BLANK FOR WOMEN

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 women in a given occupation.

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

Name..... Age..... Sex.....

Present address.....

Permanent address.....

Father: where born.....Years in U.S.....Occupation.....

Mother: where born.....Years in U.S.....Occupation.....

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)

Grade completed by

Father: Grammar School 1 2 3 4 5 6 7 8 High School 1 2 3 4 College 1 2 3 4 5 6 7

Mother: Grammar School 1 2 3 4 5 6 7 8 High School 1 2 3 4 College 1 2 3 4 5 6 7

School grade I expect to complete.....If you plan to leave school soon, is it because of lack of interest?.....

Lack of money?..... Want to go to work?.....

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

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

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

Reasons for choice.....Date of decision.....

Jobs I have been employed at (e.g., clerical, retail selling, farming, etc.)	Location	Number of Months Employed	Inclusive Dates (e.g., '24–'26)	Monthly Income

Occupations I have formerly considered or day-dreamed of	Age	Sure of it then	Rather sure	Merely considered it

Occupations suggested to you by others	By whom?	Why haven't you agreed with them?

If you could do just as you please, what would you like to be doing 10 to 15 years from now?.....

.....

Before turning the page record the time (e.g., 10 minutes after 3 o'clock).....

Parts Ia, Ib, and Ic. 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 should 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 Actress (movie)	L	I	D	41 Florist	L	I	D
2 Actress (stage)	L	I	D	42 Foreign Correspondent	L	I	D
3 Accountant	L	I	D	43 Governess	L	I	D
4 Advertiser	L	I	D	44 Government Clerk	L	I	D
5 Architect	L	I	D	45 Governor of a State	L	I	D
6 Artist	L	I	D	46 Hostess	L	I	D
7 Artist's Model	L	I	D	47 Hotel Manager	L	I	D
8 Athletic Director	L	I	D	48 Housekeeper	L	I	D
9 Author of Children's Books	L	I	D	49 Illustrator	L	I	D
10 Author of Novel	L	I	D	50 Interior Decorator	L	I	D
11 Author of Technical Book	L	I	D	51 Interpreter	L	I	D
12 Aviatrix	L	I	D	52 Inventor	L	I	D
13 Bacteriologist	L	I	D	53 Judge	L	I	D
14 Bank Teller	L	I	D	54 Laboratory Technician	L	I	D
15 Beauty Specialist	L	I	D	55 Landscape Gardener	L	I	D
16 Biologist	L	I	D	56 Lawyer, Corporation	L	I	D
17 Bookkeeper	L	I	D	57 Lawyer, Criminal	L	I	D
18 Buyer of Merchandise	L	I	D	58 Librarian	L	I	D
19 Cartoonist	L	I	D	59 Life Insurance Salesman	L	I	D
20 Cashier	L	I	D	60 Magazine Writer	L	I	D
21 Caterer	L	I	D	61 Manager, Women's Style Shop	L	I	D
22 Chemist	L	I	D	62 Manikin	L	I	D
23 Civil Service Employee	L	I	D	63 Manufacturer	L	I	D
24 College Professor	L	I	D	64 Mechanical Engineer	L	I	D
25 Companion (to elderly person)	L	I	D	65 Milliner	L	I	D
26 Confectioner	L	I	D	66 Minister	L	I	D
27 Cook	L	I	D	67 Missionary	L	I	D
28 Costume Designer	L	I	D	68 Museum Director	L	I	D
29 Dean of Women	L	I	D	69 Music Composer	L	I	D
30 Dentist	L	I	D	70 Musician	L	I	D
31 Dietitian	L	I	D	71 Naturalist	L	I	D
32 Draftsman	L	I	D	72 Nurse, Graduate General	L	I	D
33 Dramatist	L	I	D	73 Nurse, Public Health	L	I	D
34 Dressmaker	L	I	D	74 Office Clerk	L	I	D
35 Editor	L	I	D	75 Office Manager	L	I	D
36 Educational Director	L	I	D	76 Opera Singer	L	I	D
37 Employment Manager	L	I	D	77 Pharmacist	L	I	D
38 Factory Manager	L	I	D	78 Physician	L	I	D
39 Factory Worker	L	I	D	79 Playground Director	L	I	D
40 Farmer	L	I	D	80 Poet	L	I	D

Part Ic. **Occupations,** *continued.*

81 Politician	L	I	D
82 Postmistress	L	I	D
83 Private Secretary	L	I	D
84 Probation Officer	L	I	D
85 Proof Reader	L	I	D
86 Professional Dancer	L	I	D
87 Psychiatrist	L	I	D
88 Psychologist	L	I	D
89 Publisher	L	I	D
90 Purchasing Agent	L	I	D
91 Radio Lecturer	L	I	D
92 Radio Program Director	L	I	D
93 Radio Singer	L	I	D
94 Real Estate Saleswoman	L	I	D
95 Registrar	L	I	D
96 Reporter, General	L	I	D
97 Reporter, Women's Page	L	I	D
98 Retailer	L	I	D
99 Sales Manager	L	I	D
100 Scenario Writer	L	I	D
101 Scientific Illustrator	L	I	D
102 Scientific Research Worker	L	I	D
103 Sculptress	L	I	D
104 School Principal	L	I	D
105 Secret Service Woman	L	I	D
106 Social Worker	L	I	D
107 Specialty Saleswoman	L	I	D
108 Statistician	L	I	D
109 Stenographer	L	I	D
110 Stock Broker	L	I	D
111 Surgeon	L	I	D
112 Teacher, Art	L	I	D
113 Teacher, Commercial	L	I	D
114 Teacher, Dancing	L	I	D
115 Teacher, Domestic Science	L	I	D
116 Teacher, Grade School	L	I	D
117 Teacher, High School	L	I	D
118 Teacher, Kindergarten	L	I	D
119 Teacher, Music	L	I	D
120 Tea Room Proprietor	L	I	D
121 Telephone Operator	L	I	D
122 Traveling Saleswoman	L	I	D
123 Typist	L	I	D
124 Vocational Counsellor	L	I	D
125 Waitress	L	I	D
126 Wholesaler	L	I	D
127 Wife	L	I	D
128 Y.W.C.A. Secretary	L	I	D

Part II. **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 impressions.

129 Dancing	L	I	D
130 Swimming	L	I	D
131 Taking long walks	L	I	D
132 Tennis	L	I	D
133 Camping	L	I	D
134 Golf	L	I	D
135 Riding horses	L	I	D
136 Driving an automobile	L	I	D
137 Bridge	L	I	D
138 Poker	L	I	D
139 Afternoon teas	L	I	D
140 Observing birds (nature study)	L	I	D
141 Travel cross country in an auto	L	I	D
142 Solving mechanical puzzles	L	I	D
143 Playing a musical instrument	L	I	D
144 Amusement parks	L	I	D
145 Picnics	L	I	D
146 Conventions	L	I	D
147 Formal affairs	L	I	D
148 Fortune tellers	L	I	D
149 Animal zoos	L	I	D
150 Art galleries	L	I	D
151 Museums	L	I	D
152 Attending lectures	L	I	D
153 Musical comedy	L	I	D
154 Symphony concerts	L	I	D
155 Plays	L	I	D
156 Movies	L	I	D
157 Financial pages	L	I	D
158 Women's pages	L	I	D
159 Poetry	L	I	D
160 Romantic stories	L	I	D
161 Detective stories	L	I	D
162 Movie magazines	L	I	D
163 "American Magazine"	L	I	D
164 "Atlantic Monthly"	L	I	D
165 "Good Housekeeping" magazine	L	I	D
166 "House and Garden" magazine	L	I	D
167 "Ladies Home Journal"	L	I	D
168 "National Geographic Magazine"	L	I	D
169 "New Republic"	L	I	D
170 "Reader's Digest"	L	I	D
171 "True Story" magazine	L	I	D
172 "Vanity Fair"	L	I	D

Part III. Activities. Indicate your interest as in Part II.

173 Being the first to wear the very latest fashions	L	I	D
174 Being head of a civic improvement program	L	I	D
175 Expressing judgments publically, regardless of criticism	L	I	D
176 Giving "first-aid" assistance	L	I	D
177 Raising flowers and vegetables	L	I	D
178 Operating machinery	L	I	D
179 Repairing electrical wiring	L	I	D
180 Doing your own laundry work	L	I	D
181 Decorating a room with flowers	L	I	D
182 Arguments	L	I	D
183 Interviewing men for a job	L	I	D
184 Interviewing clients	L	I	D
185 Attending church	L	I	D
186 Making a speech	L	I	D
187 Cooking	L	I	D
188 Sewing	L	I	D
189 Organizing a play	L	I	D
190 Opening a conversation with a stranger	L	I	D
191 Preparing dinner for guests	L	I	D
192 Teaching children	L	I	D
193 Teaching adults	L	I	D
194 Discussions of economic affairs	L	I	D
195 Discussions of politics	L	I	D
196 Reading editorial columns	L	I	D
197 Meeting and directing people	L	I	D
198 Taking responsibility	L	I	D
199 Meeting new situations	L	I	D
200 Adjusting difficulties of others	L	I	D
201 Doing research work	L	I	D
202 Acting as yell-leader	L	I	D
203 Writing reports	L	I	D
204 Entertaining others	L	I	D
205 Writing personal letters	L	I	D
206 Buying at an auction sale	L	I	D
207 Trying new cooking recipes	L	I	D
208 Looking at shop windows	L	I	D
209 Displaying merchandise in a store	L	I	D
210 Being left to yourself	L	I	D
211 Regular hours for work	L	I	D
212 Continually changing activities	L	I	D
213 Saving money	L	I	D
214 Contributing to charities	L	I	D
215 Raising money for a charity	L	I	D
216 Looking at a collection of rare laces	L	I	D
217 Studying the latest hobby, e.g., Einstein's theory, Freud, etc.	L	I	D

Part IV. 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 your mind as you read the item.

218 Progressive people	L	I	D
219 Conservative people	L	I	D
220 Energetic people	L	I	D
221 Absent-minded people	L	I	D
222 People who borrow things	L	I	D
223 Very self-confident people	L	I	D
224 Optimists	L	I	D
225 Pessimists	L	I	D
226 People who are natural leaders	L	I	D
227 People who assume leadership	L	I	D
228 Very intellectual people	L	I	D
229 Emotional people	L	I	D
230 Thrifty people	L	I	D
231 Religious people	L	I	D
232 Irreligious people	L	I	D
233 People who are unconventional	L	I	D
234 People who have done you favors	L	I	D
235 People who take life seriously	L	I	D
236 Witty people	L	I	D
237 Foreigners	L	I	D
238 Negroes	L	I	D
239 Cautious people	L	I	D
240 Sick people	L	I	D
241 People with physical disabilities	L	I	D
242 Self-conscious people	L	I	D
243 People who always agree with you	L	I	D
244 People who tell you their troubles	L	I	D
245 People who talk very loudly	L	I	D
246 People who talk about themselves	L	I	D
247 Methodical people	L	I	D
248 Fashionably dressed people	L	I	D
249 Carelessly dressed people	L	I	D
250 "Mannish" women	L	I	D
251 Socialists	L	I	D
252 Independents in politics	L	I	D
253 Men who are indifferent to you	L	I	D
254 Nervous people	L	I	D
255 Very old people	L	I	D
256 Teetotalers	L	I	D
257 Women cleverer than you are	L	I	D
258 People who chew gum	L	I	D
259 Men who drink	L	I	D
260 Women who smoke	L	I	D
261 Athletic women	L	I	D
262 People who take chances on situations of doubtful outcome	L	I	D
263 People who have made fortunes in business	L	I	D

Part V. **Order of Preference of Activities.** Indicate which three of the following ten activities you would enjoy most by checking (√) opposite them in column one; also indicate which three you would enjoy least by checking opposite them in column two. Be sure to mark 3 in each column.

264	( )	( )	Design a new home
265	( )	( )	Have responsibility for care of new home
266	( )	( )	Discover an improvement in the design of the house
267	( )	( )	Determine the cost of building and furnishing the house
268	( )	( )	Supervise the furnishing of the house
269	( )	( )	Plan the landscaping
270	( )	( )	Sell "ideal" houses
271	( )	( )	Prepare the advertising for new houses to be offered for sale
272	( )	( )	Teach others how to furnish their homes
273	( )	( )	Interest the public in building their own homes 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. Be sure to mark 3 in each column.

274	( )	( )	Salary received for work
275	( )	( )	Steadiness and permanence of work
276	( )	( )	Opportunities for promotion
277	( )	( )	Courteous treatment from superiors
278	( )	( )	Opportunity to make use of all of one's knowledge and experience
279	( )	( )	Opportunity to ask questions and to consult about difficulties
280	( )	( )	Opportunity to understand just how one's superior expects work to be done
281	( )	( )	Certainty one's work will be judged by fair standards
282	( )	( )	Freedom in working out one's own methods of doing the work
283	( )	( )	Co-workers—congenial, competent, and adequate in number

Indicate in the same way the three women you would most like to have been; also the three you would least like to have been.

284	( )	( )	Jane Addams, social worker
285	( )	( )	Ethel Barrymore, actress
286	( )	( )	Madame Curie, scientist
287	( )	( )	Amelia Earhart, aviatrix
288	( )	( )	Edna Ferber, author
289	( )	( )	Mrs. F. D. Roosevelt, "first lady"
290	( )	( )	Madame Schumann Heink, singer
291	( )	( )	Helen Wills Moody, tennis champion
292	( )	( )	Frances Perkins, U.S. Secretary of Labor
293	( )	( )	Lillian M. Gilbreth, industrial engineer

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.

294	( )	( )	President of a Society
295	( )	( )	Secretary of a Society
296	( )	( )	Treasurer of a Society
297	( )	( )	Member of a Society
298	( )	( )	Chairman, Arrangement Committee
299	( )	( )	Chairman, Educational Committee
300	( )	( )	Chairman, Entertainment Committee
301	( )	( )	Chairman, Membership Committee
302	( )	( )	Chairman, Program Committee
303	( )	( )	Chairman, Publicity Committee

Part VI. 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.

Work rapidly.

804	Physical education director	( )	( )	( )	Magazine writer
805	Statistician	( )	( )	( )	Social worker
806	Aviatrix	( )	( )	( )	Stenographer
807	Teacher	( )	( )	( )	Saleswoman
808	House to house canvassing	( )	( )	( )	Retail selling
809	Permanence of residence	( )	( )	( )	Frequent change of residence
810	Develop plans	( )	( )	( )	Execute plans
811	Do a job yourself	( )	( )	( )	Delegate job to another
812	Persuade others	( )	( )	( )	Order others
813	Evenings in company of women friends	( )	( )	( )	Evenings in company of men friends
814	Deal with things	( )	( )	( )	Deal with people
815	Many men friends	( )	( )	( )	Few men friends
816	Activity which produces tangible returns	( )	( )	( )	Activity which is enjoyed for its own sake
817	Preparing a meal	( )	( )	( )	Making a dress
818	Taking a chance	( )	( )	( )	Playing safe
819	Work for yourself	( )	( )	( )	Carry out general program of superior who is respected
820	Work which interests you with modest income	( )	( )	( )	Work which does not interest you with large income
821	Follow own career after marriage	( )	( )	( )	Follow home and social activities after marriage
822	Work involving few details	( )	( )	( )	Work involving many details
823	Be married with small income	( )	( )	( )	Be single and earn your own living
824	Working for men	( )	( )	( )	Working for women
825	Change from place to place	( )	( )	( )	Work in one location
826	Great variety of work	( )	( )	( )	Similarity in work
827	Physical activity	( )	( )	( )	Mental activity
828	Be married	( )	( )	( )	Remain single
829	Travel alone and make preparations for the trip yourself	( )	( )	( )	Travel with someone who will make the necessary preparations for you
830	Present a report in writing	( )	( )	( )	Present a report verbally
831	Listening to a story	( )	( )	( )	Telling a story
832	Do your own housework	( )	( )	( )	Have someone else do your housework
833	Amusement where there is a crowd	( )	( )	( )	Amusement alone or with one or two others
834	People who are slow in making decisions	( )	( )	( )	People who are quick in making decisions
835	People who are always prompt and expect others to be on time also	( )	( )	( )	People who are seldom on time and who do not mind if others are late
836	Nights spent at home	( )	( )	( )	Nights spent away from home
837	Reading a book	( )	( )	( )	Going to movies
838	Going to a play	( )	( )	( )	Going to a dance
839	Activities possessing thrills and uncertainties	( )	( )	( )	Activities of a conservative nature
840	Belonging to many societies	( )	( )	( )	Belonging to few societies
841	Few intimate friends	( )	( )	( )	Many acquaintances

Part VII. **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
342	Usually start activities of my group	( )	( )	( )
343	Usually drive myself steadily (do not work by fits and starts)	( )	( )	( )
344	Win friends easily	( )	( )	( )
345	Usually get other people to do what I want done	( )	( )	( )
346	Am quite sure of myself	( )	( )	( )
347	Usually liven up the group on a dull day	( )	( )	( )
348	Accept just criticism without getting sore	( )	( )	( )
349	Have mechanical ingenuity (inventiveness)	( )	( )	( )
350	Can carry out plans assigned by other people	( )	( )	( )
351	Can discriminate between more or less important matters	( )	( )	( )
352	Am inclined to keep silent (reticent) in confidential and semi-confidential affairs	( )	( )	( )
353	Am always on time with my work	( )	( )	( )
354	Remember faces, names, and incidents better than the average person	( )	( )	( )
355	Can correct others without giving offense	( )	( )	( )
356	Able to meet emergencies quickly and effectively	( )	( )	( )
357	Get "rattled" easily	( )	( )	( )
358	Can write a concise, well-organized report	( )	( )	( )
359	Have good judgment in appraising values	( )	( )	( )
360	Plan my work in detail	( )	( )	( )
361	Stimulate the ambition of my associates	( )	( )	( )
362	Win confidence and loyalty	( )	( )	( )
363	Smooth out tangles and disagreements between people	( )	( )	( )
364	Discuss my ideals with others	( )	( )	( )

Check (√) in the (a), (b) or (c) column at the right according as the (a), (b), or (c) statement in each item below applies to you.

				(a)	(b)	(c)
365	(a) Worry considerably about mistakes	(b) Worry very little	(c) Do not worry	( )	( )	( )
366	(a) Feelings easily hurt	(b) Feelings hurt sometimes	(c) Feelings rarely hurt	( )	( )	( )
367	(a) Usually ignore the feelings of others	(b) Consider them sometimes	(c) Carefully consider them	( )	( )	( )
368	(a) Loan money to acquaintances	(b) Loan only to certain people	(c) Rarely loan money	( )	( )	( )
369	(a) Borrow frequently for personal use	(b) Borrow occasionally	(c) Practically never borrow	( )	( )	( )
370	(a) Tell jokes well	(b) Seldom tell jokes	(c) Practically never tell jokes	( )	( )	( )
371	(a) Frequently make wagers	(b) Occasionally make wagers	(c) Practically never make wagers	( )	( )	( )

PLEASE TURN TO LAST PAGE.

Part VIII. **School Subjects.** Indicate whether you liked the following or not when in school. Work rapidly. Do not think over various possibilities. Record your first impressions.

372	Algebra	L	I	D
373	Arithmetic	L	I	D
374	Art	L	I	D
375	Bible Study	L	I	D
376	Bookkeeping	L	I	D
377	Botany	L	I	D
378	Calculus	L	I	D
379	Chemistry	L	I	D
380	Civics	L	I	D
381	Domestic Science	L	I	D
382	Dramatics	L	I	D
383	Education (teacher training)	L	I	D
384	Economics	L	I	D
385	English Composition	L	I	D
386	Geography	L	I	D
387	Geology	L	I	D
388	Geometry	L	I	D
389	History	L	I	D
390	Journalism	L	I	D
391	Languages, Ancient	L	I	D
392	Languages, Modern	L	I	D
393	Literature	L	I	D
394	Mechanical Drawing	L	I	D
395	Music	L	I	D
396	Nature Study	L	I	D
397	Penmanship	L	I	D
398	Philosophy	L	I	D
399	Physical Training	L	I	D
400	Physics	L	I	D
401	Physiology	L	I	D
402	Political Science	L	I	D
403	Psychology	L	I	D
404	Public Speaking	L	I	D
405	Shorthand	L	I	D
406	Sociology	L	I	D
407	Spelling	L	I	D
408	Statistics	L	I	D
409	Typewriting	L	I	D
410	Zoölogy	L	I	D

Record the time when you finished this page.....

Number of minutes required to fill out the blank.....

BE SURE YOU HAVE NOT OMITTED ANY PART OF THE BLANK.

DO NOT WRITE IN THIS COLUMN

Occupation	Raw Score	Percentile	Standard Score	Rating	
Author					
Librarian					
Artist					
Physician					
Dentist					
Life Insurance Saleswoman					
Social Worker					
Teacher of English					
Teacher in general					
Teacher of Social Sciences					
Lawyer					
Y.W.C.A. Secretary					
Teacher of Math. and Phys. Sciences					
Nurse					
Stenographer-Secretary					
General Office Worker					
Housewife					
Femininity-Masculinity					

Group.....

Key number.....

Form B. For Students

Date.....

VOCATIONAL INTEREST BLANK

By EDWARD K. STRONG, JR.

Professor of Psychology, Stanford University

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 profession.

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

Name ..... Age..... Sex.....

Present address.....

Permanent address.....

Place of birth..... Years in U.S.....

Father: where born..... Years in U.S..... Occupation.....

Mother: where born..... Years in U.S..... Occupation.....

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)

Grade completed by

Father: Grammar School 1 2 3 4 5 6 7 8 High School 1 2 3 4 College 1 2 3 4 5 6 7

Mother: Grammar School 1 2 3 4 5 6 7 8 High School 1 2 3 4 College 1 2 3 4 5 6 7

School grade I expect to complete..... If you plan to leave school soon, is it because of lack of interest?.....

Lack of money?..... Want to go to work?.....

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

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

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

Reasons for choice ..... Date of decision.....

Jobs I have been employed at (e.g., clerical, retail selling, farming, etc.)	Location	Number of Months Employed	Inclusive Dates (e.g., '24–'26)	Monthly Income

Occupations I have formerly considered or day-dreamed of	Age	Sure of it then	Rather sure	Merely considered it

Occupations suggested to you by others	By whom?	Why haven't you agreed with them?

If you could do just as you please, what would you like to be doing 10 to 15 years from now?.....

.....

Before turning the page record the time (e.g., 10 minutes after 3 o'clock) .....

Parts Ia and Ib. ***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 you would like to do what is involved in the occupation.

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.

Actor (not movie)	L	I	D	Lawyer, Criminal	L	I	D
Advertiser	L	I	D	Lawyer, Corporation	L	I	D
Architect	L	I	D	Librarian	L	I	D
Army Officer	L	I	D	Life Insurance Salesman	L	I	D
Artist	L	I	D	Locomotive Engineer	L	I	D
Astronomer	L	I	D	Machinist	L	I	D
Athletic Director	L	I	D	Magazine Writer	L	I	D
Auctioneer	L	I	D	Manufacturer	L	I	D
Author of novel	L	I	D	Marine Engineer	L	I	D
Author of technical book	L	I	D	Mechanical Engineer	L	I	D
Auto Salesman	L	I	D	Mining Superintendent	L	I	D
Auto Racer	L	I	D	Musician	L	I	D
Auto Repairman	L	I	D	Music Teacher	L	I	D
Aviator	L	I	D	Office Clerk	L	I	D
Bank Teller	L	I	D	Office Manager	L	I	D
Bookkeeper	L	I	D	Orchestra Conductor	L	I	D
Building Contractor	L	I	D	Pharmacist	L	I	D
Buyer of merchandise	L	I	D	Photo Engraver	L	I	D
Carpenter	L	I	D	Physician	L	I	D
Cartoonist	L	I	D	Playground Director	L	I	D
Cashier in bank	L	I	D	Poet	L	I	D
Certified Public Accountant	L	I	D	Politician	L	I	D
Chemist	L	I	D	Printer	L	I	D
Civil Engineer	L	I	D	Private Secretary	L	I	D
Civil Service Employee	L	I	D	Railway Conductor	L	I	D
Clergyman	L	I	D	Rancher	L	I	D
College Professor	L	I	D	Real Estate Salesman	L	I	D
Consul	L	I	D	Reporter, general	L	I	D
Dentist	L	I	D	Reporter, sporting page	L	I	D
Draftsman	L	I	D	Retailer	L	I	D
Editor	L	I	D	Sales Manager	L	I	D
Electrical Engineer	L	I	D	School Teacher	L	I	D
Employment Manager	L	I	D	Scientific Research Worker	L	I	D
Explorer	L	I	D	Sculptor	L	I	D
Factory Manager	L	I	D	Secretary, Chamber of Commerce	L	I	D
Factory Worker	L	I	D	Secret Service Man	L	I	D
Farmer	L	I	D	Ship Officer	L	I	D
Floorwalker	L	I	D	Shop Foreman	L	I	D
Florist	L	I	D	Social Worker	L	I	D
Foreign Correspondent	L	I	D	Specialty Salesman	L	I	D
Governor of a State	L	I	D	Statistician	L	I	D
Hotel Keeper or Manager	L	I	D	Stock Broker	L	I	D
Interior Decorator	L	I	D	Surgeon	L	I	D
Interpreter	L	I	D	Toolmaker	L	I	D
Inventor	L	I	D	Traveling Salesman	L	I	D
Jeweler	L	I	D	Typist	L	I	D
Judge	L	I	D	Undertaker	L	I	D
Labor Arbitrator	L	I	D	Watchmaker	L	I	D
Laboratory Technician	L	I	D	Wholesaler	L	I	D
Landscape Gardener	L	I	D	Worker in Y.M.C.A., K. of C., etc.	L	I	D

Part II. ***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.

Golf	L	I	D
Fishing	L	I	D
Hunting	L	I	D
Tennis	L	I	D
Driving an automobile	L	I	D
Taking long walks	L	I	D
Boxing	L	I	D
Checkers	L	I	D
Chess	L	I	D
Poker	L	I	D
Bridge	L	I	D
Solitaire	L	I	D
Billiards	L	I	D
Observing birds (nature study)	L	I	D
Solving mechanical puzzles	L	I	D
Playing a musical instrument	L	I	D
Performing sleight-of-hand tricks	L	I	D
Collecting postage stamps	L	I	D
Drilling in a company	L	I	D
Chopping wood	L	I	D
Amusement parks	L	I	D
Picnics	L	I	D
Excursions	L	I	D
Smokers	L	I	D
"Rough house" initiations	L	I	D
Conventions	L	I	D
Full-dress affairs	L	I	D
Auctions	L	I	D
Fortune tellers	L	I	D
Animal zoos	L	I	D
Art galleries	L	I	D
Museums	L	I	D
Vaudeville	L	I	D
Musical comedy	L	I	D
Symphony concerts	L	I	D
Pet canaries	L	I	D
Pet monkeys	L	I	D
Snakes	L	I	D
Sporting pages	L	I	D
Poetry	L	I	D
Detective stories	L	I	D
"Literary Digest"	L	I	D
"Life"	L	I	D
"New Republic"	L	I	D
"System"	L	I	D
"National Geographic Magazine"	L	I	D
"American Magazine"	L	I	D
"Popular Mechanics"	L	I	D
"Atlantic Monthly"	L	I	D
"Arts and Crafts"	L	I	D
Cowboy movies	L	I	D
Educational movies	L	I	D
Travel movies	L	I	D
Social problem movies	L	I	D

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

Algebra	L	I	D
Agriculture	L	I	D
Arithmetic	L	I	D
Art	L	I	D
Bible Study	L	I	D
Bookkeeping	L	I	D
Botany	L	I	D
Calculus	L	I	D
Chemistry	L	I	D
Civics	L	I	D
Dramatics	L	I	D
Economics	L	I	D
English Composition	L	I	D
Geography	L	I	D
Geology	L	I	D
Geometry	L	I	D
History	L	I	D
Languages, ancient	L	I	D
Languages, modern	L	I	D
Literature	L	I	D
Mathematics	L	I	D
Manual Training	L	I	D
Mechanical Drawing	L	I	D
Military Drill	L	I	D
Music	L	I	D
Nature Study	L	I	D
Penmanship	L	I	D
Philosophy	L	I	D
Physical Training	L	I	D
Physics	L	I	D
Psychology	L	I	D
Physiology	L	I	D
Public Speaking	L	I	D
Shop work	L	I	D
Shorthand	L	I	D
Sociology	L	I	D
Spelling	L	I	D
Typewriting	L	I	D
Zoölogy	L	I	D

Part IV. ***Activities.*** Indicate your interests as in Part II.

Work rapidly.

Repairing a clock	L	I	D
Making a radio set	L	I	D
Adjusting a carburetor	L	I	D
Repairing electrical wiring	L	I	D
Cabinetmaking	L	I	D
Operating machinery	L	I	D
Handling horses	L	I	D
Giving "first-aid" assistance	L	I	D
Raising flowers and vegetables	L	I	D
Decorating a room with flowers	L	I	D
Arguments	L	I	D
Interviewing men for a job	L	I	D
Interviewing prospects in selling	L	I	D
Interviewing clients	L	I	D
Making a speech	L	I	D
Organizing a play	L	I	D
Opening a conversation with a stranger	L	I	D
Teaching children	L	I	D
Teaching adults	L	I	D
Calling friends by nicknames	L	I	D
Being called by a nickname	L	I	D
Meeting and directing people	L	I	D
Taking responsibility	L	I	D
Meeting new situations	L	I	D
Adjusting difficulties of others	L	I	D
Drilling soldiers	L	I	D
Pursuing bandits in sheriff's posse	L	I	D
Doing research work	L	I	D
Acting as yell-leader	L	I	D
Writing personal letters	L	I	D
Writing reports	L	I	D
Entertaining others	L	I	D
Bargaining ("swapping")	L	I	D
Looking at shop windows	L	I	D
Buying merchandise for a store	L	I	D
Displaying merchandise in a store	L	I	D
Expressing judgments publicly regardless of criticism	L	I	D
Being pitted against another as in a political or athletic race	L	I	D
Being left to yourself	L	I	D
Methodical work	L	I	D
Regular hours for work	L	I	D
Continually changing activities	L	I	D
Continuing at same work until finished	L	I	D
Studying latest hobby, e.g., Einstein theory, Freud, etc.	L	I	D
Developing business systems	L	I	D
Saving money	L	I	D
Contributing to charities	L	I	D
Raising money for a charity	L	I	D
Living in the city	L	I	D
Climbing along edge of precipice	L	I	D
Looking at a collection of rare laces	L	I	D
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.

Progressive people	L	I	D
Conservative people	L	I	D
Energetic people	L	I	D
Absent-minded people	L	I	D
People who borrow things	L	I	D
Quick-tempered people	L	I	D
Optimists	L	I	D
Pessimists	L	I	D
People who are natural leaders	L	I	D
People who assume leadership	L	I	D
People easily led	L	I	D
People who have made fortunes in business	L	I	D
Emotional people	L	I	D
Thrifty people	L	I	D
Spendthrifts	L	I	D
Talkative people	L	I	D
Religious people	L	I	D
Irreligious people	L	I	D
People who have done you favors	L	I	D
People who get rattled easily	L	I	D
Gruff men	L	I	D
Witty people	L	I	D
Foreigners	L	I	D
Negroes	L	I	D
Cautious people	L	I	D
Sick people	L	I	D
Nervous people	L	I	D
Very old people	L	I	D
Cripples	L	I	D
Side-show freaks	L	I	D
People with gold teeth	L	I	D
People with protruding jaws	L	I	D
People with hooked noses	L	I	D
Blind people	L	I	D
Deaf mutes	L	I	D
Self-conscious people	L	I	D
People who always agree with you	L	I	D
People who talk very loudly	L	I	D
People who talk very slowly	L	I	D
People who talk about themselves	L	I	D
Methodical people	L	I	D
Fashionably dressed people	L	I	D
Carelessly dressed people	L	I	D
People who do not believe in evolution	L	I	D
Socialists	L	I	D
Bolshevists	L	I	D
Independence in politics	L	I	D
Teetotalers	L	I	D
Men who chew tobacco	L	I	D
Women cleverer than you are	L	I	D
Men who use perfume	L	I	D
People who chew gum	L	I	D
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 one; also indicate which three you would enjoy least by checking opposite them in column two. Be sure to mark 3 in each column.

First 3 choices	Last 3 choices	
( )	( )	Develop the theory of operation of a new machine, e.g., auto
( )	( )	Operate (manipulate) the new machine
( )	( )	Discover an improvement in the design of the machine
( )	( )	Determine the cost of operation of the machine
( )	( )	Supervise the manufacture of the machine
( )	( )	Create a new artistic effect, i.e., improve the beauty of the auto
( )	( )	Sell the machine
( )	( )	Prepare the advertising for the machine
( )	( )	Teach others the use of the machine
( )	( )	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. Be sure to mark 3 in each column.

Most important 3 factors	Least important 3 factors	
( )	( )	Salary received for work
( )	( )	Steadiness and permanence of work
( )	( )	Opportunity for promotion
( )	( )	Courteous treatment from superiors
( )	( )	Opportunity to make use of all of one's knowledge and experience
( )	( )	Opportunity to ask questions and to consult about difficulties
( )	( )	Opportunity to understand just how one's superior expects work to be done
( )	( )	Certainty one's work will be judged by fair standards
( )	( )	Freedom in working out one's own methods of doing the work
( )	( )	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.

First 3 choices	Last 3 choices	
( )	( )	Luther Burbank, "plant wizard"
( )	( )	Enrico Caruso, singer
( )	( )	Thomas A. Edison, inventor
( )	( )	Henry Ford, manufacturer
( )	( )	Charles Dana Gibson, artist
( )	( )	J. P. Morgan, financier
( )	( )	J. J. Pershing, soldier
( )	( )	William H. Taft, jurist
( )	( )	Booth Tarkington, author
( )	( )	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.

First 3 choices	Last 3 choices	
( )	( )	President of a Society
( )	( )	Secretary of a Society
( )	( )	Treasurer of a Society
( )	( )	Member of a Society
( )	( )	Chairman, Arrangement Committee
( )	( )	Chairman, Educational Committee
( )	( )	Chairman, Entertainment Committee
( )	( )	Chairman, Membership Committee
( )	( )	Chairman, Program Committee
( )	( )	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.

Work rapidly.

Street-car motorman	( )	( )	( )	Street-car conductor
Policeman	( )	( )	( )	Fireman (fights fire)
Chauffeur	( )	( )	( )	Chef
Head waiter	( )	( )	( )	Lighthouse tender
House to house canvassing	( )	( )	( )	Retail selling
House to house canvassing	( )	( )	( )	Gardening
Repair auto	( )	( )	( )	Drive auto
Develop plans	( )	( )	( )	Execute plans
Do a job yourself	( )	( )	( )	Delegate job to another
Persuade others	( )	( )	( )	Order others
Deal with things	( )	( )	( )	Deal with people
Plan for immediate future	( )	( )	( )	Plan for five years ahead
Activity which produces tangible returns	( )	( )	( )	Activity which is enjoyed for its own sake
Taking a chance	( )	( )	( )	Playing safe
Definite salary	( )	( )	( )	Commission on what is done
Work for yourself	( )	( )	( )	Carry out general program of superior who is respected
Work which interests you with modest income	( )	( )	( )	Work which does not interest you with large income
Work in a large corporation with little chance of becoming president until age of 55	( )	( )	( )	Work for self in small business
Selling article, quoted 10% below competitor	( )	( )	( )	Selling article, quoted 10% above competitor
Small pay, large opportunities to learn during next 5 years	( )	( )	( )	Good pay, little opportunity to learn during next 5 years
Work involving few details	( )	( )	( )	Work involving many details
Outside work	( )	( )	( )	Inside work
Change from place to place	( )	( )	( )	Working in one location
Great variety of work	( )	( )	( )	Similarity in work
Physical activity	( )	( )	( )	Mental activity
Emphasis upon quality of work	( )	( )	( )	Emphasis upon quantity of work
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)
Present a report in writing	( )	( )	( )	Present a report verbally
Listening to a story	( )	( )	( )	Telling a story
Playing baseball	( )	( )	( )	Watching baseball
Amusement where there is a crowd	( )	( )	( )	Amusement alone or with one or two others
Nights spent at home	( )	( )	( )	Nights away from home
Reading a book	( )	( )	( )	Going to movies
Belonging to many societies	( )	( )	( )	Belonging to few societies
Few intimate friends	( )	( )	( )	Many acquaintances
Many women friends	( )	( )	( )	Few women friends
Fat men	( )	( )	( )	Thin men
Tall men	( )	( )	( )	Short men
Jealous people	( )	( )	( )	Conceited people
Jealous people	( )	( )	( )	Spendthrifts
People who talk very low	( )	( )	( )	People who talk very loudly
People who talk very fast	( )	( )	( )	People who talk very slowly

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
Usually start activities of my group	( )	( )	( )
Usually drive myself steadily (do not work by fits and starts)	( )	( )	( )
Win friends easily	( )	( )	( )
Usually get other people to do what I want done	( )	( )	( )
Usually liven up the group on a dull day	( )	( )	( )
Am quite sure of myself	( )	( )	( )
Accept just criticism without getting sore	( )	( )	( )
Have mechanical ingenuity (inventiveness)	( )	( )	( )
Have more than my share of novel ideas	( )	( )	( )
Can carry out plans assigned by other people	( )	( )	( )
Can discriminate between more or less important matters	( )	( )	( )
Am inclined to keep silent (reticent) in confidential and semi-confidential affairs	( )	( )	( )
Am always on time with my work	( )	( )	( )
Remember faces, names, and incidents better than the average person	( )	( )	( )
Can correct others without giving offense	( )	( )	( )
Able to meet emergencies quickly and effectively	( )	( )	( )
Get "rattled" easily	( )	( )	( )
Can write a concise, well-organized report	( )	( )	( )
Have good judgment in appraising values	( )	( )	( )
Plan my work in detail	( )	( )	( )
Follow up subordinates effectively	( )	( )	( )
Put drive into the organization	( )	( )	( )
Stimulate the ambition of my associates	( )	( )	( )
Show firmness without being easy	( )	( )	( )
Win confidence and loyalty	( )	( )	( )
Smooth out tangles and disagreements between people	( )	( )	( )
Am approachable	( )	( )	( )
Discuss my ideals with others	( )	( )	( )

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

Record the time when you finished this page.....

Number of minutes required to fill out the blank.....

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

Group.....

Key Number.....

Occupation	Adv.	Arch.	Artist	CPA	Chem.	Doctor	Engineer	Farmer	Journalist	Lawyer	Life Ins. Salesman	Minister	Personnel	Psych.
Ia														
Ib														
II														
III														
IV														
V														
VI														
VII														
VIII														
Total														
Rating														

Occupation	Purchasing Agent	Real Estate Salesman	School Man	Vacuum Cleaner Salesman	Y.M.C.A. Gen. Secy.	City School Supt.	Office Clerk	Mathematician	Physicist					
Ia														
Ib														
II														
III														
IV														
V														
VI														
VII														
VIII														
Total														
Rating														

OTIS SELF-ADMINISTERING TESTS OF MENTAL ABILITY

By ARTHUR S. OTIS

Formerly Development Specialist with Advisory Board, General Staff, United States War Department

HIGHER EXAMINATION: FORM A

20 **For High Schools and Colleges** Score.....

Read this page. Do what it tells you to do.

Do not open this paper, or turn it over, until you are told to do so. Fill these blanks, giving your name, age, birthday, etc. Write plainly.

Name.....Age last birthday.....years
First name, initial, and last name

Birthday.....Class.....Date.....19....
Month Day

School or College.....City.....

This is a test to see how well you can think. It contains questions of different kinds. Here is a sample question already answered correctly. Notice how the question is answered:

Which one of the five words below tells what an apple is?
1 flower, 2 tree, 3 vegetable, 4 fruit, 5 animal.....(*4*)

The right answer, of course, is "fruit"; so the word "fruit" is underlined. And the word "fruit" is No. 4; so a figure 4 is placed in the parentheses at the end of the dotted line. This is the way you are to answer the questions.

Try this sample question yourself. Do not write the answer; just draw a line under it and then put its number in the parentheses:

Which one of the five words below means the opposite of north?
1 pole, 2 equator, 3 south, 4 east, 5 west.....( )

The answer, of course, is "south"; so you should have drawn a line under the word "south" and put a figure 3 in the parentheses. Try this one:

A foot is to a man and a paw is to a cat the same as a hoof is to a — what?
1 dog, 2 horse, 3 shoe, 4 blacksmith, 5 saddle.....( )

The answer, of course, is "horse"; so you should have drawn a line under the word "horse" and put a figure 2 in the parentheses. Try this one:

At four cents each, how many cents will 6 pencils cost?.....( )

The answer, of course, is 24, and there is nothing to underline; so just put the 24 in the parentheses.

If the answer to any question is a number or a letter, put the number or letter in the parentheses without underlining anything. Make all letters like printed capitals.

The test contains 75 questions. You are not expected to be able to answer all of them, but do the best you can. You will be allowed half an hour after the examiner tells you to begin. Try to get as many right as possible. Be careful not to go so fast that you make mistakes. Do not spend too much time on any one question. No questions about the test will be answered by the examiner after the test begins. Lay your pencil down.

Do not turn this page until you are told to begin.

Published by World Book Company, Yonkers-on-Hudson, New York, and 2126 Prairie Avenue, Chicago

EXAMINATION BEGINS HERE:

1. The opposite of hate is (?)
   1 enemy, 2 fear, 3 love, 4 friend, 5 joy ..... ( )
2. If 3 pencils cost 5 cents, how many pencils can be bought for 50 cents? ..... ( )
3. A bird does not always have (?)
   1 wings, 2 eyes, 3 feet, 4 a nest, 5 a bill ..... ( )
4. The opposite of honor is (?)
   1 glory, 2 disgrace, 3 cowardice, 4 fear, 5 defeat ..... ( )
5. A fox most resembles a (?)
   1 wolf, 2 goat, 3 pig, 4 tiger, 5 cat ..... ( )
6. Quiet is related to sound in the same way that darkness is related to (?)
   1 a cellar, 2 sunlight, 3 noise, 4 stillness, 5 loud ..... ( )
7. A party consisted of a man and his wife, his two sons and their wives, and four children in each son's family. How many were there in the party? ..... ( )
8. A tree always has (?)
   1 leaves, 2 fruit, 3 buds, 4 roots, 5 a shadow ..... ( )
9. The opposite of economical is (?)
   1 cheap, 2 stingy, 3 extravagant, 4 value, 5 rich ..... ( )
10. Silver is more costly than iron because it is (?)
    1 heavier, 2 scarcer, 3 whiter, 4 harder, 5 prettier ..... ( )
11. Which one of the six statements below tells the meaning of the following proverb? "The early bird catches the worm." ..... ( )

    1. Don't do the impossible.
    2. Weeping is bad for the eyes.
    3. Don't worry over troubles before they come.
    4. Early birds like worms best.
    5. Prompt persons often secure advantages over tardy ones.
    6. It is foolish to fret about things we can't help.

12. Which statement above tells the meaning of this proverb? "Don't cry over spilt milk." .... ( )
13. Which statement above explains this proverb? "Don't cross a bridge till you get to it." .... ( )
14. An electric light is related to a candle as an automobile is to (?)
    1 a carriage, 2 electricity, 3 a tire, 4 speed, 5 glow ..... ( )
15. If a boy can run at the rate of 6 feet in $\frac{1}{4}$ of a second, how many feet can he run in 10 seconds? ( )
16. A meal always involves (?)
    1 a table, 2 dishes, 3 hunger, 4 food, 5 water ..... ( )
17. Of the five words below, four are alike in a certain way. Which is the one not like these four?
    1 bend, 2 shave, 3 chop, 4 whittle, 5 shear ..... ( )
18. The opposite of never is (?)
    1 often, 2 sometimes, 3 occasionally, 4 always, 5 frequently ..... ( )
19. A clock is related to time as a thermometer is to (?)
    1 a watch, 2 warm, 3 a bulb, 4 mercury, 5 temperature ..... ( )
20. Which word makes the truest sentence? Men are (?) shorter than their wives.
    1 always, 2 usually, 3 much, 4 rarely, 5 never ..... ( )
21. One number is wrong in the following series. What should that number be?
    1 4 2 5 3 6 4 7 5 9 6 9 ..... ( )
22. If the first two statements following are true, the third is (?) All members of this club are Republicans. Smith is not a Republican. Smith is a member of this club.
    1 true, 2 false, 3 not certain ..... ( )
23. A contest always has (?)
    1 an umpire, 2 opponents, 3 spectators, 4 applause, 5 victory ..... ( )
24. Which number in this series appears a second time nearest the beginning?
    6 4 5 3 7 8 0 9 5 9 8 8 6 5 4 7 3 0 8 9 1 ..... ( )
25. The moon is related to the earth as the earth is to (?)
    1 Mars, 2 the sun, 3 clouds, 4 stars, 5 the universe ..... ( )
26. Which word makes the truest sentence? Fathers are (?) wiser than their sons.
    1 always, 2 usually, 3 much, 4 rarely, 5 never ..... ( )

27. The opposite of awkward is (?)
1 strong, 2 pretty, 3 short, 4 graceful, 5 swift..... ( )

28. A mother is always (?) than her daughter.
1 wiser, 2 taller, 3 stouter, 4 older, 5 more wrinkled..... ( )

29. Which one of the six statements below tells the meaning of the following proverb? "The burnt child dreads the fire."..... ( )

1. Frivolity flourishes when authority is absent.
2. Unhappy experiences teach us to be careful.
3. A thing must be tried before we know its value.
4. A meal is judged by the dessert.
5. Small animals never play in the presence of large ones.
6. Children suffer more from heat than grown people.

30. Which statement above explains this proverb? "When the cat is away, the mice will play." ( )

31. Which statement above explains this proverb? "The proof of the pudding is in the eating." ( )

32. If the settlement of a difference is made by mutual concession, it is called a (?)
1 promise, 2 compromise, 3 injunction, 4 coercion, 5 restoration..... ( )

33. What is related to disease as carefulness is to accident?
1 doctor, 2 surgery, 3 medicine, 4 hospital, 5 sanitation..... ( )

34. Of the five things below, four are alike in a certain way. Which is the one not like these four?
1 smuggle, 2 steal, 3 bribe, 4 cheat, 5 sell..... ( )

35. If 10 boxes full of apples weigh 400 pounds, and each box when empty weighs 4 pounds, how many pounds do all the apples weigh?..... ( )

36. The opposite of hope is (?)
1 faith, 2 misery, 3 sorrow, 4 despair, 5 hate..... ( )

37. If all the odd-numbered letters in the alphabet were crossed out, what would be the tenth letter not crossed out? Print it. *Do not mark the alphabet.*
A B C D E F G H I J K L M N O P Q R S T U V W X Y Z..... ( )

38. What letter in the word SUPERFLUOUS is the same number in the word (counting from the beginning) as it is in the alphabet? Print it..... ( )

39. What people say about a person constitutes his (?)
1 character, 2 gossip, 3 reputation, 4 disposition, 5 personality..... ( )

40. If $2\frac{1}{2}$ yards of cloth cost 30 cents, how many cents will 10 yards cost?..... ( )

41. If the words below were arranged to make a good sentence, with what letter would the second word of the sentence begin? Make it like a printed capital.
same means big large the as..... ( )

42. If the first two statements following are true, the third is (?) George is older than Frank. James is older than George. Frank is younger than James.
1 true, 2 false, 3 not certain..... ( )

43. Suppose the first and second letters in the word CONSTITUTIONAL were interchanged, also the third and fourth letters, the fifth and sixth, etc. Print the letter that would then be the twelfth letter counting to the right..... ( )

44. One number is wrong in the following series. What should that number be?
0 1 3 6 10 15 21 28 34..... ( )

45. If $4\frac{1}{2}$ yards of cloth cost 90 cents, how many cents will $2\frac{1}{2}$ yards cost?..... ( )

46. A man's influence in a community should depend upon his (?)
1 wealth, 2 dignity, 3 wisdom, 4 ambition, 5 political power..... ( )

47. What is related to few as ordinary is to exceptional?
1 none, 2 some, 3 many, 4 less, 5 more..... ( )

48. The opposite of treacherous is (?)
1 friendly, 2 brave, 3 wise, 4 cowardly, 5 loyal..... ( )

49. Which one of the five words below is most unlike the other four?
1 good, 2 large, 3 red, 4 walk, 5 thick..... ( )

50. If the first two statements following are true, the third is (?) Some of Brown's friends are Baptists. Some of Brown's friends are dentists. Some of Brown's friends are Baptist dentists.
1 true, 2 false, 3 not certain..... ( )

51. How many of the following words can be made from the letters in the word LARGEST, using any letter any number of times?
great, stagger, grasses, trestle, struggle, rattle, garage, strangle..... ( )

52. The statement that the moon is made of green cheese is (?)
1 absurd, 2 misleading, 3 improbable, 4 unfair, 5 wicked..... ( )

 Do not stop. Go on with the next page.

53. Of the five things following, four are alike in a certain way. Which is the one not like these four?
1 tar, 2 snow, 3 soot, 4 ebony, 5 coal..... ( )

54. What is related to a cube in the same way in which a circle is related to a square?
1 circumference, 2 sphere, 3 corners, 4 solid, 5 thickness..... ( )

55. If the following words were seen on a wall by looking in a mirror on an opposite wall, which word would appear exactly the same as if seen directly?
1 OHIO, 2 SAW, 3 NOON, 4 MOTOR, 5 OTTO..... ( )

56. If a strip of cloth 24 inches long will shrink to 22 inches when washed, how many inches long will a 36-inch strip be after shrinking?..... ( )

57. Which of the following is a trait of character?
1 personality, 2 esteem, 3 love, 4 generosity, 5 health..... ( )

58. Find the two letters in the word DOING which have just as many letters between them in the word as in the alphabet. Print the one of these letters that comes first in the alphabet.
A B C D E F G H I J K L M N O P Q R S T U V W X Y Z..... ( )

59. Revolution is related to evolution as flying is to (?)
1 birds, 2 whirling, 3 walking, 4 wings, 5 standing..... ( )

60. One number is wrong in the following series. What should that number be?
1 3 9 27 81 108..... ( )

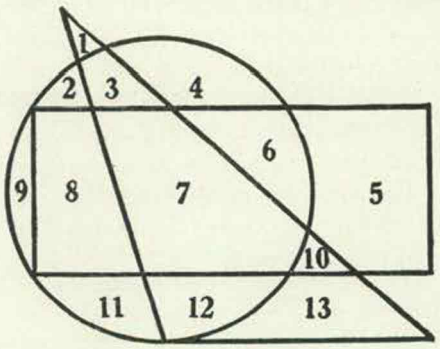
61. If Frank can ride a bicycle 30 feet while George runs 20 feet, how many feet can Frank ride while George runs 30 feet?..... ( )

62. Count each N in this series that is followed by an O next to it if the O is not followed by a T next to it. Tell how many N's you count.
N O N T Q M N O T M O N O O N Q M N N O Q N O T O N A M O N O M..... ( )

63. A man who is averse to change and progress is said to be (?)
1 democratic, 2 radical, 3 conservative, 4 anarchistic, 5 liberal..... ( )

64. Print the letter which is the fourth letter to the left of the letter which is midway between O and S in the alphabet..... ( )

65. What number is in the space which is in the rectangle and in the triangle but not in the circle? ( )



66. What number is in the same geometrical figure or figures as the number 8?..... ( )

67. How many spaces are there that are in any two but only two geometrical figures?..... ( )

68. A surface is related to a line as a line is to (?)
1 solid, 2 plane, 3 curve, 4 point, 5 string..... ( )

69. If the first two statements following are true, the third is (?) One cannot become a good violinist without much practice. Charles practices much on the violin. Charles will become a good violinist.
1 true, 2 false, 3 not certain..... ( )

70. If the words below were arranged to make the best sentence, with what letter would the last word of the sentence end? Print the letter as a capital.
sincerity traits courtesy character of desirable and are..... ( )

71. A man who is influenced in making a decision by preconceived opinions is said to be (?)
1 influential, 2 prejudiced, 3 hypocritical, 4 decisive, 5 impartial..... ( )

72. A hotel serves a mixture of 2 parts cream and 3 parts milk. How many pints of cream will it take to make 15 pints of the mixture?..... ( )

73. What is related to blood as physics is to motion?
1 temperature, 2 veins, 3 body, 4 physiology, 5 geography..... ( )

74. A statement the meaning of which is not definite is said to be (?)
1 erroneous, 2 doubtful, 3 ambiguous, 4 distorted, 5 hypothetical..... ( )

75. If a wire 20 inches long is to be cut so that one piece is $\frac{2}{3}$ as long as the other piece, how many inches long must the shorter piece be?..... ( )

Name _____ Class _____

Age _____ Date _____

STUDENT SELF-ANALYSIS FORM

Girls

Seventeen vocations are listed on this form, which you are asked to rate according to your vocational interest. Before rating any one of these vocations, read the following directions very carefully. This is not a speed test, to take your time.

The purpose of this form is to get a true estimate by you of the vocation in which you are most interested, who has influenced you most in your choice, and whether or not you expect to take advanced educational training in preparation for your vocation. In order to accomplich this you are asked to rate three and only three of the vocations and to answer the questions as directed.

Place an "A" by the vocation of your first choice
Place a "B" by the vocation of your second choice
Place a "C" by the vocation of your third choice

Read the entire list before making your choices.

Part I

AUTHOR
LIBRARIAN
ARTIST
PHYSICIAN
DENTIST
LIFE INSURANCE SALESWOMAN
SOCIAL WORKER
TEACHER OF ENGLISH
TEACHER IN GENERAL
TEACHER OF SOCIAL SCIENCES
LAWYER
Y.W.C.A. SECRETARY
TEACHER OF MATH. & PHYS. SCI.
NURSE
STENOGRAPHER-SECRETARY
GENERAL OFFICE WORKER
HOUSEWIFE

If none of these vocations are your choices, write your choices here: first choice _____, second choice _____, third choice _____.

Part II

Place an "X" after the individual who has influenced you most in your choice of a vocation. 1. Friend ___, 2. Uncle ___, 3. Minister ___, 4. Brother ___, 5. Business Man ___, 6. Mother ___, 7. Teacher ___, 8. Father ___, 9. Banker ___, 10. Sister ___.

If none of these, who, _____
(write title here)

Self-Analysis Form (cont'd)
Girls

Part III

Do you expect to take advanced educational training in preparation for your vocation? Yes ___. No ___.
If your answer is "yes" to the above question, place an "X" after the appropiate institution.
College or University ___, Business College ___, Normal School ___, Summer School ___, Technical School ___.

If none of these, write out the title here.

_____

Name _____ Class _____

Age _____ Date _____

STUDENT SELF-ANALYSIS FORM

BOYS

Twenty-eight vocations are listed on this form, which you are asked to rate according to your vocational choice. Before rating any one of these vocations, read the following directions very carefully. This is not a speed test, so take your time.

The purpose of this form is to get a true estimate by you of the vocation in which you are most interested, who has influenced you most in your choice, and whether or not you expect to take advanced educational training in preparation for your vocation. In order to accomplish this you are asked to rate three and only three of the vocations and to answer the following questions as directed.

Place an "A" by the vocation of your first choice
Place a "B" by the vocation of your second choice
Place a "C" by the vocation of your third choice

Read the entire list before making your choices.

Part I

ADVERTISER
ARCHITECT
ARTIST
BOY SCOUT MASTER
CARPENTER
CERTIFIED PUBLIC ACCOUNTANT
CHEMIST
CITY SCHOOL SUPERINTENDENT
DENTIST
ENGINEER
FARMER
JOURNALIST (newspaper ed.)
LAWYER
LIFE INSURANCE SALESMAN
MATHEMATICIAN
MINISTER
MUSICIAN
OFFICE CLERK
PERSONNEL MANAGER
PHYSICIAN AND SURGEON
PHYSICIST
PSYCHOLOGIST
PURCHASING AGENT
REAL ESTATE SALESMAN
SCHOOL TEACHER AND ADMINISTRATOR
VACUUM CLEANER SALESMAN
Y.M.C.A. GENERAL SECRETARY
Y.M.C.A. PHYSICAL DIRECTOR

If none of these vocations are your choices, write your choices here: first choice _____, second choice _____, third choice _____.

Self-Analysis Form (cont'd)
Boys

Part II

Place an "X" after the individual who has influenced you most in your choice of a vocation. 1. Friend ___, 2Uncle ___, 3. Minister ___, 4. Brother ___, 5. Business Man ___, 6. Mother ___, 7. Teacher ___, 8Father ___, 9. Banker ___, 10. Sister ___,

If none of these, who? _____
(write title here)

Part III

Do you expect to take advanced educational training in preparation for your vocation? Yes ___, No ___.
If your answer is "yes" to the above question, place an "X" after the appropiate institution.
College or University ___, Business College ___, Normal School ___, Summer School ___, Technical School ___.

If none of these, write out the title here.

_____

Appendix B.

Data of the Study

Student	I.Q.	Gd. Av.	Tran'd Strong Scores "A" ch.	"B" ch.	"C" ch.	Exp. Rat. "A" choice;	Det. Rat.	Exp. Rat. "B" choice;	Dt. Rt.	Exp. Rat. "C" choice;	Dt. Rt.
1.	106	3.80	57	33	78	Engineer	B	Personnel	C	Pur.Agent	B
2.	103	3.35	71	86	91	Engineer	B	Pur.Agent	A	Off.Clerk	A
3.	115	3.22	68	90	49	Engineer	B	Carpenter	A	Personnel	C
4.	117	3.64	48	59	49	Doctor	C	Lawyer	B	Phys.Dir.	C
5.	100	3.62	83	42	91	Engineer	A	Phys.Dir.	C	B.S.Mas.	A
6.	109	3.30	71	66	57	Engineer	B	Chemist	B	Personnel	B
7.	124	1.75	49	64	94	Engineer	C	Personnel	B	Musician	A
8.	108	2.60	75	37	64	Doctor	B	Musician	C	Farmer	B
9.	122	2.30	97	26	40	Musician	A	Math.	C	Engineer	C
10.	114	3.10	71	51	34	Doctor	B	Lawyer	B	Math.	C
11.	118	1.70	82	62	48	Musician	A	Lawyer	B	Math.	C
12.	112	2.65	81	78	48	Engineer	A	Chemist	B	Math.	C
13.	117	2.96	25	32	83	Math.	C	Engineer	C	Phys.Dir.	A
14.	102	3.50	94	61	55	Musician	A	Artist	B	Journ'st.	B
15.	110	2.67	53	25	27	Chemist	B	Physicist	C	Math.	C
16.	119	3.42	84	71	54	Engineer	A	Chemist	B	Musician	B
17.	112	2.42	75	82	58	Engineer	B	Farmer	A	Lawyer	B
18.	119	3.03	87	85	37	Engineer	A	Chemist	A	Math.	C
19.	115	2.28	65	3	66	Lawyer	B	Psych.	C	B.S.Mas.	B
20.	95	4.00	70	54	51	Engineer	B	Farmer	B	Rl.Est.S.	B
21.	91	3.70	63	61	37	Engineer	B	Off.Clerk	B	J'rnlst.	C
22.	118	3.00	52	69	60	Engineer	B	Off.Clerk	B	Pur.Agent	B
23.	115	2.03	37	5	31	Lawyer	C	Doctor	C	Adv'tiser	C
24.	100	3.56	77	58	49	Engineer	B	Math.	B	C. P. A.	C
25.	122	2.89	77	19	68	Engineer	B	Ar'tect	C	Carpenter	B
26.	124	1.90	66	37	46	Engineer	B	Ar'tect	C	Lawyer	C
27.	99	3.93	47	19	25	Engineer	C	Journ'lst	C	Lawyer	C
28.	99	3.80	51	53	81	Musician	B	Journ'lst	B	Pur.Agent	A
29.	106	4.00	66	61	52	Pur.Agent	B	Personnel	B	Vac.Cl.S.	B
30.	108	3.54	37	64	46	Phys.Dir.	C	Farmer	B	Pur.Agent	C

Appendix B Cont'd.

Stu-dent	I.Q.	Gd.Av.	Trans'd Strong Scores "A"ch.	"B"ch.	"C"ch.	Exp.Rat. "A"choice	Det.Rat.	Exp.Rat. "B"choice	Dt:Rt:	Exp.Rat. "C"choice	Dt:Rt:
31.	98	3.32	65	60	50	Farmer	B	Engineer	B	Doctor	C
32.	109	3.09	31	51	52	Ar'tect	C	Lawyer	B	Chemist	B
33.	104	3.90	43	32	8	C. P. A.	C	Off.Clerk	C	Personnel	C
34.	122	1.33	61	81	67	Pur.Agemt	B	Personnel	A	Life In.S.	B
35.	97	4.30	73	97	71	Rl.Est.S.	B	Pur.Agent	A	Phys.Dir.	B
36.	93	3.45	63	83	32	Off.Clerk	B	Engineer	A	Personnel	C
37.	97	3.70	79	59	38	Farmer	B	Engineer	B	Off.Clerk	C
38.	112	3.00	35	73	28	Phys.Dir.	C	B.S.Mas.	B	Sch. Man	C
39.	109	3.17	31	67	46	C. P. A.	C	Off.Clerk	B	Engineer	C
40.	107	2.51	96	90	32	Nurse	A	G.Off.Wk.	A	Y.W.Sec.	C
41.	127	1.66	81	75	22	Tch.Eng.	A	Hs'wife	B	Tch. Math.	C
42.	114	2.64	81	69	18	Nurse	A	Sten.Sec.	B	Y.W.Sec.	C
43.	116	1.75	73	47	64	Lawyer	B	Tch.inGen.	C	T.Soc.Sci.	B
44.	102	3.90	28	89	23	Lawyer	C	Sten.Sec.	A	Soc.Wkr.	C
45.	96	3.07	62	78	51	Tch.inGen.	B	Hs'wife	B	Soc.Wkr.	B
46.	98	2.89	53	103	88	Tch.inGen.	B	Hs'wife	A	Nurse	A
47.	108	2.75	98	34	88	Nurse	A	Soc.Wkr.	C	Hs'wife	A
48.	107	3.06	71	50	41	Soc.Wkr.	B	Doctor	C	Author	C
49.	109	2.62	65	60	33	Artist	B	Tch.Math.	B	Soc.Wkr.	C
50.	116	2.07	14	91	70	T.Soc.Sci.	C	G.Off.Wk.	A	Nurse	B
51.	115	2.57	31	89	32	Artist	C	Nurse	A	Lawyer	C
52.	96	3.57	63	39	92	Tch.inGen.	B	Soc.Wkr.	C	Hs'wife	A
53.	103	2.65	26	40	53	Soc.Wkr.	C	Tch.inGen.	C	Y.W.Sec.	B
54.	99	2.85	32	106	96	Tch.inGen.	C	Hs'wife	A	Nurse	A
55.	112	2.13	71	94	62	Tch.inGen.	B	Sten.Sec.	A	Nurse	B
56.	117	1.78	92	69	68	Artist	A	Sten.Sec.	B	G.Off.Wk.	B
57.	115	2.16	23	103	27	Soc.Wkr.	C	Hs'wife	A	Lib'rian	C
58.	102	3.33	10	76	44	Soc.Wkr.	C	G.Off.Wk.	B	Lib'rian	C
59.	101	3.17	27	98	70	Lib'rian	C	Hs'wife	A	Nurse	B
60.	109	2.00	45	27	75	Author	C	Doctor	C	Hs'wife	B
61.	137	1.20	70	60	50	Author	B	Sten.Sec.	B	Hs'wife	C
62.	110	2.15	63	111	16	Tch.inGen.	B	Hs'wife	A	Author	C

Appendix B Cont'd.

Student	I.Q.	Gd.Av.	Trans'd "A"ch.	Strong "B"ch.	Scores "C"ch.	Exp.Rat. "A"choice	Dt.Rt.	Exp.Rat. "B"choice	Dt.Rt.	Exp.Rat. "C"choice	Dt.Rt.
63.	117	2.53	30	58	100	Author	C	Tch.inGen.	B	Hs'wife	A
64.	108	1.50	99	38	32	Nurse	A	Soc.Wkr.	C	Author	C
65.	102	2.48	59	67	72	Lib'rian	B	Tch.inGen	B	Author	B
66.	86	2.60	91	50	82	Sten.Sec.	A	Y.W.Sec.	C	Nurse	A
67.	115	2.21	91	116	29	Sten.Sec.	A	Gen.Off.Wk.	A	Y.W.Sec.	C
68.	100	3.03	107	39	111	Sten.Sec.	A	Y.W.Sec.	C	Hs'wife	A
69.	99	3.70	100	81	34	Sten.Sec.	A	Nurse	A	Y.W.Sec.	C
70.	117	1.82	109	118	93	Sten.Sec.	A	G.Off.Wk.	A	Hs'wife	A
71.	116	2.00	102	86	81	Hs'wife	A	G.Off.Wk.	A	Sten.Sec.	A
72.	114	1.64	112	87	95	Sten.Sec.	A	Nurse	A	Hs'wife	A
73.	119	2.52	98	47	98	Sten.Sec.	A	Author	C	Hs'wife	A
74.	111	2.25	97	103	24	Sten.Sec.	A	G.Off.Wk.	A	Soc.Wkr.	C
75.	106	2.46	97	43	48	Hs'wife	A	T.Soc.Sci.	C	Artist	C
76.	115	1.58	99	54	44	Sten.Sec.	A	Lawyer	B	Doctor	C
77.	115	1.60	106	85	100	G.Off.Wk.	A	Sten.Sec.	A	Hs'wife	A
78.	109	2.62	100	97	99	Sten.Sec.	A	G.Off.Wk.	A	Hs'wife	A
79.	113	3.17	122	121	106	Sten.Sec.	A	G.Off.Wk.	A	Hs'wife	A
80.	118	1.75	110	108	77	Sten.Sec.	A	G.Off.Wk.	A	Nurse	B
81.	91	3.10	86	94	85	Sten.Sec.	A	G.Off.Wk.	A	Hs'wife	A
82.	90	2.67	94	93	87	G.Off.Wk.	A	Sten.Sec.	A	Hs'wife	A
83.	101	3.23	77	94	52	Sten.Sec.	B	G.Off.Wk.	A	Nurse	B
84.	101	2.14	93	36	105	Sten.Sec.	A	Y.W.Sec.	C	G.Off.Wk.	A
85.	89	4.00	94	91	34	Sten.Sec.	A	G.Off.Wk.	A	Soc.Wkr.	C
86.	101	2.78	116	30	102	G.Off.Wk.	A	Soc.Wkr.	C	Sten.Sec.	A
87.	110	2.00	76	87	14	Sten.Sec.	B	G.Off.Wk.	A	Soc.Wkr.	C
88.	112	2.48	85	44	70	Sten.Sec.	A	Soc.Wkr.	C	Hs'wife	B
89.	96	2.82	102	60	105	Sten.Sec.	A	Tch.inGen.	B	G.Off.Wk.	A
90.	120	2.60	80	36	84	Hs'wife	A	Tch.inGen.	C	Nurse	A
91.	115	1.71	94	51	80	Sten.Sec.	A	Tch.inGen.	B	Hs'wife	A
92.	111	2.03	108	31	110	Sten.Sec.	A	Tch.inGen.	C	Hs'wife	A
93.	121	1.82	76	38	35	Y.W.Sec.	B	Tch.inGen.	C	Soc.Wkr.	C
94.	111	2.28	114	32	22	Sten.Sec.	A	Artist	C	Lib'rian	C
95.	108	3.35	111	35	70	G.Off.Wkr.	A	Lib'rian	C	Nurse	B