

4-1-1956

# The development of a standardized interview for measuring non-intellective factors associated with success and failure among college students

William Hensley Leftwich

Follow this and additional works at: <http://scholarship.richmond.edu/masters-theses>

---

## Recommended Citation

Leftwich, William Hensley, "The development of a standardized interview for measuring non-intellective factors associated with success and failure among college students" (1956). *Master's Theses*. Paper 116.

This Thesis is brought to you for free and open access by the Student Research at UR Scholarship Repository. It has been accepted for inclusion in Master's Theses by an authorized administrator of UR Scholarship Repository. For more information, please contact [scholarshiprepository@richmond.edu](mailto:scholarshiprepository@richmond.edu).

THE DEVELOPMENT  
OF A STANDARDIZED INTERVIEW  
FOR MEASURING NON-INTELLECTIVE FACTORS  
ASSOCIATED WITH SUCCESS AND FAILURE  
AMONG COLLEGE STUDENTS

BY

WILLIAM HENSLEY LEFTWICH

A THESIS  
SUBMITTED TO THE GRADUATE FACULTY  
OF THE UNIVERSITY OF RICHMOND  
IN CANDIDACY  
FOR THE DEGREE OF  
MASTER OF ARTS IN PSYCHOLOGY

JUNE, 1956

LIBRARY  
UNIVERSITY OF RICHMOND  
VIRGINIA

## PREFACE

This study represents an attempt to discover factors differentiating achieving and non-achieving college students. It was done as a part of a larger program being conducted in the University of Richmond Center for Psychological Services. It involved the construction and use of a standardized interview developed particularly for college students. It is hoped that in the future this instrument or a similar technique may aid in the prediction of academic performance.

For the opportunity of conducting this study as well as the many suggestions offered, I wish to express appreciation to Dr. Robert J. Filer and Dr. John E. Williams.

To the other members of the staff, Dr. Merton E. Carver and Dr. Robert F. Corder, goes appreciation for their interest and cooperation.

I would also like to thank Dean Raymond B. Pinchbeck for permission to do the study in Richmond College. Gratitude also goes to Dean C.J. Gray for his invaluable assistance and cooperation while the study was in progress. And of course to the subjects themselves, I wish to express appreciation for their cooperation.

To my wife, Margaret, goes gratitude for the

typing of the manuscript as well as many helpful suggestions which were offered.

I wish to acknowledge the grant of the Williams Fellowship.

## TABLE OF CONTENTS

### CHAPTERS

I. INTRODUCTION	1
II. PROCEDURE	10
A. Development of the interview	
B. Administration of the Interview	
III. RESULTS	19
IV. DISCUSSION	30
V. SUMMARY AND CONCLUSIONS	36

### APPENDICES

A. LETTER TO PROBATION STUDENTS	
B. LETTER TO SUPERIOR STUDENTS	
C. INSTRUCTIONS TO RATERS	
D. TABLE OF EACH SUBJECT'S INTERVIEW RATINGS	
E. SAMPLE INTERVIEW AND RATING SHEET	

### BIBLIOGRAPHY

### VITA

## I. INTRODUCTION

For many years considerable attention has been given to the student whose academic performance is not commensurate with his abilities. Educators and psychologists alike believe that much of the variance in school achievement may be attributed to differences in intelligence. However, it is also evident that intelligence alone is not the only contributing factor, for it has been frequently observed that many differences in performance are related to what may be called non-intellective factors.

In his clinical practice of student personnel work, Darley found that, "some undetermined part of student mortality is attributed to extra-educational maladjustments that prevent students from using their full abilities." (8). Granted that such maladjustments do exist in academic situations, then any attempt to isolate and define such disturbances may prove beneficial to the student as well

as the school.

Many studies of the relation of non-intellective factors to achievement have been done, but few have produced any clear-cut results. This may be due to the great variety of measuring instruments used, the different populations studied as well as the varying techniques used to select the achieving and non-achieving student. (26). The majority of the studies conducted along these lines relate school achievement to (a) the results of standard psychological tests, (b) findings from questionnaires and, (c) evidence obtained from behavior records and interviews. (32). These three categories may serve as a guide in the review of pertinent literature.

#### A. RELATIONSHIP OF SCHOOL SUCCESS TO RESULTS OF STANDARD PSYCHOLOGICAL TESTS

Psychological tests have been by far the most widely used procedure in studying the relation of non-intellective factors to college success. Among these tests, the Rorschach and the M.M.P.I. are mentioned most frequently in the literature. The majority of these studies report rather inconclusive results and at best indicate only certain trends. A few, however, contribute some rather significant findings. Thompson (40), (41) for example, reports two studies designed to investigate the possibility of using the Group Rorschach in predicting

academic success by factors in the test which are associated with grades but not related to intelligence. She found that achieving students have a more introverted pattern, are more conforming and appear to be better adjusted emotionally than non-achieving students.

Much the same conclusions are drawn by Osborne and Sanders.(30). Non-probation students in this study again appeared more mature and adjusted in emotional areas as well as giving indications of more efficient use of mental capacities.

Munroe (27) and Benditt (4) demonstrated that the Rorschach can be quite valuable in predicting academic performance. Predictions can be made using their techniques with as much success as is possible by using measures of ability, i.e. intelligence tests.

Other studies in which the Rorschach was used in an effort to determine factors associated with academic performance are reported by Ryan (32), McCandless (23), and Shoemaker and Rohrer (35). In general, these studies report inconclusive results and indicate only slight trends. Thus we can see that efforts at using the Rorschach, while not totally unsuccessful, have served generally to give rather fragmentary bits of evidence concerning the relationship of non-ability factors to academic performance. At best we may conclude that the achieving student appears



more introverted than the non-achieving student, uses his mental capacities with more efficiency, and seems to be better adjusted emotionally.

The M.M.P.I. has been used with about as much success as the Rorschach. Fairly conclusive results are reported by Altus (1) in using the M.M.P.I. with college achievers and non-achievers. He found that the best bipolar concept "showed greater introversive tendencies for the achieving group; for the non-achieving group a love of and dependence on people, here called social extroversion." Also the non-achieving group appeared to be slightly more maladjusted than the achieving group.

Morgan (26) was able to isolate several non-intellective factors which were positively related to academic achievement. Results of the M.M.P.I. as well as several other tests gave evidence of these non-intellective factors among University of Minnesota Freshmen: maturity and seriousness of interests; awareness and concern for others; a sense of responsibility; dominance, persuasiveness, and self-confidence; and motivation to achieve, or the need for achievement.

Other studies in which the M.M.P.I. was used individually or as a part of a test battery are reported by Renand (16), Kahn and Singer (18), and Winberg (45). In each the results were rather inconclusive and only a

few trends were indicated.

The results of these and other studies concerning the M.M.P.I., although somewhat fragmentary, seem to lend support to the evidence obtained from using the Rorschach. Here again we find the presence of greater introversion as well as better emotional adjustment on the part of achieving students.

Other diagnostic tests also enter the picture in studying personality differences and their relationship to academic success. Hudley (15), in investigating the relationship between conflict and academic achievement, was able to isolate nine items on a sentence completion test which differentiated between over- and under-achievers at or beyond the 10% level. Morgan (26) found also that the T.A.T. was valuable in the prediction of academic performance.

A number of other studies of varying success are reported in which tests, other than the previously mentioned diagnostic tests, are used. For the most part these include personality inventories and vocational interest scales. Such studies are reported by Johnson and Heston (31), Altus (2), Griffiths (14), Ryan (32), and Thompson (39). Generally these studies again indicate good adjustment and introversive tendencies on the part of the better student.

## B. RELATIONSHIP OF SCHOOL SUCCESS TO FINDINGS FROM QUESTIONNAIRES

A second major group of studies attempts to relate academic performance to results of various types of questionnaires. One such questionnaire was devised by Ryan (32) which was designed to measure certain background factors of college students. When these factors were checked for their relationship to school achievement, results indicated that the presence of the mother in the home as a housewife and the fact that the parents were not separated were more characteristic of achieving than of non-achieving students.

An orientation inventory constructed to investigate the contribution of motivational and adjustmental factors to college success was devised by DiVesta, Woodruff and Hertel. (10). A chi-square analysis of responses showed these factors to be important: good students often work for college expenses and consequently are more highly motivated, they have better study habits and appear to be better adjusted.

Some trends were indicated concerning the achieving and non-achieving student in studies reported by Westcott (44) and Fredericksen and Schrader (12). They used vocational interest questionnaires. Other studies of varying success are reported by Schultz (33), Benditt (4), Borow (5), Myers (24),

Carter (6) and Dowd (11).

C. RELATIONSHIP OF SCHOOL SUCCESS TO EVIDENCE OBTAINED FROM BEHAVIOR RECORDS AND INTERVIEWS

Attempts have also been made to obtain evidence for under-achievement through use of behavior records as well as information obtained by interview. Wedemeyer (43) reports that "most of the non-achievers were working outside school--some as much as 30 hours a week." This suggests that "excessive outside employment has been an important factor in the failure of the non-achievers to live up to their potential." It was also apparent that many of the non-achievers had been counselled frequently on an adjustment basis which gives evidence for the contribution of emotional maladjustment to non-achievement.

At DePauw University attempts have been made through an exit interview plan to determine reasons for student withdrawals. (7). Some reasons given for the bulk of the withdrawals which undoubtedly affect academic performance were: change in curricular interests, finances, desire to be nearer home and marriage.

D. STATEMENT OF THE PROBLEM

From these and many other studies it is evident that intelligence alone cannot explain differences in achievement. The relationship of school success to emotional

adjustment as well as various socio-economic, cultural, occupational and linguistic background factors are indeed important considerations for college admission and success.

(9). It may be well at this point to briefly summarize these studies by again indicating the important factors. First of all, there appears to be considerable evidence that introversive tendencies on the part of students are related to high academic achievement. Good emotional adjustment also characterizes the achieving student. Other important factors significantly related to school achievement are better study habits and better home adjustment.

It is admitted here that evidence is rather fragmentary, and many questions still remain concerning non-intellective factors and their relation to school success. It is granted from the outset that such factors are rather difficult to measure. Kirk (19) reports after counseling numerous deficient students that the counselee "does not appear to recognize the reasons for his deficiency. The explanation and excuses for the academic deficiency are unrealistic, superficial, and largely implausible. He may or may not be concerned or anxious about his situation, but he is still unaware of the reasons for it." If such is the case, then it is apparent that the mere questioning of a student about the causes for his performance

would contribute little. Thus certain techniques must be used which will reveal the non-intellective factors and perhaps indicate their relationship to academic performance. Other studies cited previously involve the use of various psychological tests and questionnaires in an effort to reveal certain non-intellective factors. This study is an investigation of several such factors as measured by a standardized interview and their relationship to academic performance. Stated more specifically, the hypothesis under consideration is that better motivation and better emotional stability and maturity are positively related to high academic performance of male college freshmen. The investigation of the factors involves the study of seven categories: past work experience, study procedures, definiteness of occupational goals, curiosity, reaction to stress, independence-dependence, and anticipated degree of participation in college life.

Following then is an attempt to isolate and further define these factors in an effort to clarify the picture of the achieving and non-achieving student.

## II. PROCEDURE

### A. DEVELOPMENT OF THE INTERVIEW

As part of a more intensive Freshman Testing Program this study was undertaken in an effort to discover any relationship between success and failure in college freshman and certain frequently mentioned non-intellective factors particularly the emotional and motivational aspects of the student's personality.

The first step in the construction of the interview designed to measure these factors involved the gathering of many ideas which might be pertinent to an interview of this type. Discussions were held with students, faculty members and with the Dean and Dean of Students of the College. From all of these sources it was possible to gather numerous factors which might have a bearing on academic performance. The remaining task was one of narrowing down and combining this information into meaningful categories.

From the many possible areas which were suggested, it was decided to investigate two of them which were considered to be perhaps the most important non-intellective factors: motivation and emotional stability and maturity. Under the first area, motivation, four separate categories were included: work experience, study procedures, definiteness of occupational goals and curiosity. It was felt that responses to questions concerning these four categories would indeed give some indication of the student's motivation. Under the second area, emotional stability and maturity, it was decided to investigate three categories which would indicate the student's emotional makeup. These categories include reaction to stress, independence-dependence and the anticipated degree of participation in college life. Under each of these seven categories there was then included from five to seven questions which, it was felt, would give some indication of the student's performance, attitude or feelings under the categories involved.

The final step in the construction of the interview involved the development of a method for quantifying the information obtained from the interview. It was decided to include here an often-used technique, the rating scale. Since space did not permit the inclusion of rating scales on the interview form, separate rating sheets were prepared.



This procedure also facilitated the use of additional ratings by other raters. In its final form the rating sheet consists of the seven category headings with a five point rating scale for each. In an effort to objectify the ratings, points one, three and five of each of the seven rating scales were defined. (See Appendix E for final form of the interview and rating sheet).

## B. ADMINISTRATION OF THE INTERVIEW

### SUBJECTS

All of the subjects included in this study were interviewed by the experimenter. The sample consisted of 60 male Freshmen enrolled for the fall semester at the University of Richmond. Subjects who had acquired college hours prior to the fall semester were not included in the study.

According to their mid-semester grades, 27 of these 60 students were on academic probation. That is, at mid-semester they had failed to pass at least nine hours of college work. The remaining 33 students, also according to mid-semester grades, ranked at the top of the freshman class. Grades ranged from straight A's for the top student to three B's and two C's for the 33rd student. No subject in the top or superior group had more than two C's.

The initial contact of all 60 subjects was done by letter. This was at first considered to be relatively easy especially for the probation group, since customarily the Dean's office informs each student of his deficiency by means of a letter. The student is asked in the letter to report to the Dean's office for consultation. (Refer to Appendix A). A letter was also sent out to the superior group. (See Appendix B). All 33 subjects in this group responded voluntarily to the letter. For the probation or deficient group, however, only 15 students reported voluntarily to the Dean's office. It thus became necessary to contact the remaining deficient students personally or by phone. Eight students were given brief notes asking them to report to the Dean's office to make an appointment. Eight other students were contacted by phone.

12 out of 16 of these deficient students responded to the telephone calls or notes by submitting to an interview bringing the total to 27 for the probation group.

#### PROCEDURE

Before the actual interviewing of the subjects to be included in the study was begun, several upperclassmen were interviewed by the author. This served the purpose of excluding a few irrelevant items as well as to

determine the approximate time needed for an average interview. At this point it was also decided that a brief orientation would be beneficial in establishing rapport with the students. The orientation went somewhat as follows:

"Hello. I am Mr. Leftwich, a representative of the personnel committee (of the College). I am conducting these interviews for the Dean. This is simply an information type of interview. What I am trying to determine is some things which are associated with success and failure during the first semester of college. The reason for this is so that we may be better able to help students in the future."

Then the interviewer went directly to the first question in the interview being sure to ask each question exactly as it was stated on the interview form. Responses to each question were written down as closely as possible to the way in which the student expressed them. A condemning atmosphere was carefully avoided for the probation students by asking the questions in a friendly, matter-of-fact way. At the conclusion of the interview, a closing statement was made to each student.

"I certainly appreciate your coming by. This has been quite helpful to me. Of course we won't know the results of this for quite a while. I would like to request that you not mention anything about it. Thank you."

As soon as possible after each student had departed, the interviewer read the subjects responses, this time giving the student a rating (on the separate rating sheet) for each of the seven categories. Although

the interviewer was aware of the academic standing of each student, care was taken to be as objective and unbiased as possible. All 60 subjects were interviewed and rated by the author of this paper. All interviewing was accomplished over a two-week period following mid-semester grades.

#### RELIABILITY OF RATINGS

As was stated above, all data used in this study depended upon the ratings of the author. As a check upon the reliability of these ratings, two independent raters were asked to rate a sample of the 60 completed interviews. This sample included 10 interviews selected from the total group, five of which were interviews of probation students and five were of superior students. The independent raters, of course, did not know into which group the subjects were placed. Prior to the rating done by the independent raters, a sheet of instructions with an example of a rating was given to each. (See Appendix C).

The percentage of agreement for the 10 interviews between each of the three raters was calculated.

TABLE I. Percentage of agreement between interviewer and independent rater A.

Perfect Agreement	(27 times out of 70)	38.6%
Agreement One Step Removed	(40 times out of 70)	57.1%
Agreement Two Steps Removed	( 3 times out of 70)	4.3%

TABLE II. Percentage of agreement between interviewer and independent rater B.

Perfect Agreement	(34 times out of 70)	48.6%
Agreement One Step Removed	(31 times out of 70)	44.3%
Agreement Two Steps Removed	( 5 times out of 70)	7.1%

TABLE III. Percentage of agreement between independent rater A and independent rater B.

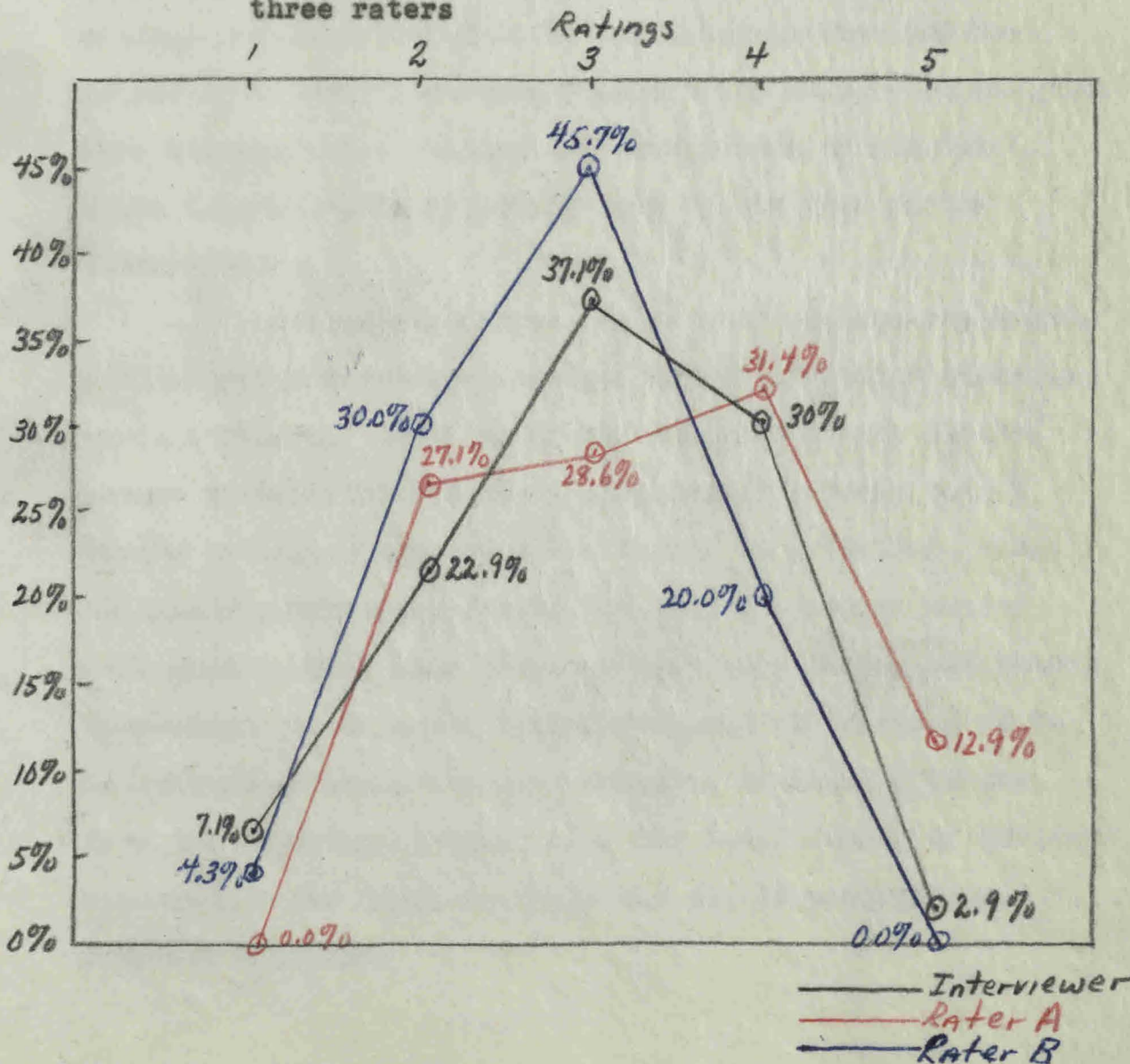
Perfect Agreement	(31 times out of 70)	44.3%
Agreement One Step Removed	(30 times out of 70)	42.9%
Agreement Two Steps Removed	( 9 times out of 70)	12.9%

An inspection of Tables I, II, and III indicates that the interviewer agreed with each of the two independent raters as well as they agreed with each other. This evidence offers support to the belief that the interviewer was rating only the responses of each subject. That is, personal contact and knowledge of academic status during each interview had little or no biasing effect upon the

ratings.

As a final check on the reliability of the ratings, the percentage of ratings for each of the five categories was determined for the three raters. The purpose in so doing was to check on the tendency of the three raters perhaps to rate too heavily in the center of the rating scale or too much toward the extremities.

TABLE IV. Percentage of ratings in each category for the three raters



It is seen in Table IV that there is no undue loading of ratings in any one category on the part of the interviewer. As a matter of interest, the percentage of ratings in each category by the interviewer approximate an average of the percentage of ratings by Rater A and Rater B.

As a result of this information, any further checks on the ratings of the interviewer would appear to contribute little. Consequently the interviewer's ratings were considered to be sufficiently true and unbiased so as not to seriously affect the results of analysis. Thus the analysis, results and conclusions of the data which follows is based solely upon the ratings of the interviewer.

Before the actual analysis of ratings was begun, a final check on the performance of the probation students was undertaken. A review of the freshmen grades for the second semester showed that 11 students formerly placed in the probation group were no longer on probation. That is, their performance during the second semester was of such quality that nine hours or more were passed and these students were no longer deficient ones. This appeared to be sufficient basis for the exclusion of these students from the probation group. Thus the total number of subjects included in the final analysis was 49, 16 probation and 33 superior students.

### III. RESULTS

#### A. PRESENTATION OF DATA

One procedure used in the statistical evaluation of the interviews involved chi-square analyses of the interview ratings. It may be worthwhile first of all to report in table form the ratings for the probation and superior groups. (See Appendix D). The last two columns in this table shows the final rating for each subject for the two major interview areas: motivation and emotional stability and maturity. These values are simply a sum of the ratings for the categories within the two major areas.

For purposes of analyzing the data, a more meaningful approach to its organization is the construction of a table showing the frequency of ratings in each of the seven categories for the probation and superior groups.



TABLE V. Frequency of ratings in Probation (P) and Superior (S) Groups.

Category	Ratings				
	1	2	3	4	5
1. Work Experience					
P.....	0	1	5	10	0
S.....	3	10	6	13	1
2. Study Procedures					
P.....	2	8	6	0	0
S.....	2	1	13	17	0
3. Definiteness of Occupational Goals					
P.....	3	4	6	1	2
S.....	5	7	7	8	6
4. Curiosity					
P.....	2	8	6	0	0
S.....	3	12	10	6	2
5. Reaction to Stress					
P.....	4	4	5	3	0
S.....	3	7	11	9	3
6. Independence-Dependence					
P.....	2	3	7	4	0
S.....	4	12	6	9	2
7. Anticipated Degree of Participation in College Life					
P.....	4	3	7	2	0
S.....	8	10	11	4	0

An inspection of Table V indicated that the frequencies for some of the categories were too small to be of use in a chi-square analysis. Thus the rating categories one and two were combined into one separate rating. The same was done for the categories four and five. Even when the ratings were thus combined, some of the observed frequencies

were still too small to be of use. Rating three was then combined with ratings one and two or four and five depending upon which combination more nearly approximated a 50-50 split. All chi-square analyses thus involved the construction of 2 X 2 tables.

#### B. CHI-SQUARE ANALYSES OF THE SEVEN INTERVIEW CATEGORIES

Reference to the hypothesis stated in Chapter I (page 9) shows that it is concerned with the deviation in a positive direction. The chi-square analyses, reported in Tables VI through XII, will thus be concerned with the one-tail test of significance.

TABLE VI. Chi-square for Work Experience

<u>Group</u>	<u>Ratings</u>		<u>Totals</u>
	<u>1, 2 &amp; 3</u>	<u>4 &amp; 5</u>	
Probation	6	10	16
Superior	19	14	33
Totals	25	24	49

$$X^2 = 1.738$$

$$df = 1$$

\*Not significant at .05 level.

\*Results here are actually in the opposite predicted direction but approach significance (between .10 and .20 level).

TABLE VII. Chi-square for Study Procedures

<u>Group</u>	<u>Ratings</u>		<u>Totals</u>
	<u>1, 2 &amp; 3</u>	<u>4 &amp; 5</u>	
Probation	16	0	16
Superior	16	17	33
Totals	32	17	49

$$x^2 = 12.621$$

$$df = 1$$

$$p < .01$$

TABLE VIII. Chi-square for Definiteness of Occupational Goals

<u>Group</u>	<u>Ratings</u>		<u>Totals</u>
	<u>1 &amp; 2</u>	<u>3, 4 &amp; 5</u>	
Probation	7	9	16
Superior	12	21	33
Totals	19	30	49

$$x^2 = .248$$

$$df = 1$$

$$p > .10$$

TABLE IX. Chi-square for Curiosity

<u>Group</u>	<u>Ratings</u>		<u>Totals</u>
	<u>1 &amp; 2</u>	<u>3, 4 &amp; 5</u>	
Probation	10	6	16
Superior	15	18	33
Totals	25	24	49

$$x^2 = 1.253$$

$$df = 1$$

$$p > .10$$

TABLE X. Chi-square for Reaction to Stress

<u>Group</u>	<u>Ratings</u>		<u>Totals</u>
	<u>1 &amp; 2</u>	<u>3,4 &amp; 5</u>	
Probation	8	8	16
Superior	10	23	33
Totals	18	31	49

$$x^2 = 1.799$$

$$df = 1$$

p between .05 and .10

TABLE XI. Chi-square for Independence-Dependence

<u>Group</u>	<u>Ratings</u>		<u>Totals</u>
	<u>1 &amp; 2</u>	<u>3,4 &amp; 5</u>	
Probation	5	11	16
Superior	16	17	33
Totals	21	28	49

$$x^2 = 1.307$$

$$df = 1$$

p > .10

TABLE XII. Chi-square for Anticipated Degree of Participation in College Life

<u>Group</u>	<u>Ratings</u>		<u>Totals</u>
	<u>1 &amp; 2</u>	<u>3,4 &amp; 5</u>	
Probation	7	9	16
Superior	18	15	33
Totals	25	24	49

$$x^2 = .503$$

$$df = 1$$

p > .10

C. TEST OF SIGNIFICANCE OF DIFFERENCE BETWEEN MEANS OF TOTAL RATINGS FOR PROBATION AND SUPERIOR STUDENTS

As was stated earlier in this chapter, each subject in the study received two total ratings--one for motivation and one for emotional stability and maturity. These total ratings were simply a sum of the ratings for the categories under each of these two main areas. The analysis of these total ratings involved a t-test of the significance of the difference between the means for the probation and superior groups. Here again, we are concerned with the one-tail test of significance since the hypothesis is stated that high motivation and good emotional stability and maturity are positively related to high academic achievement.

TABLE XIII. Means of total ratings for Motivation and Emotional Stability and Maturity for Probation and Superior Groups.

<u>Group</u>	<u>Motivation</u>	<u>Emotional Stability and Maturity</u>
Probation	10.75	7.69
Superior	12.12	8.18
Difference	1.37	.49

An examination of this table shows that the means for the superior group were higher than those of

the probation group for both motivation and for emotional stability and maturity. For the area motivation, a t-test of the significance of the difference between the means of both groups yields a p-value of less than .05. The difference between the means for emotional stability and maturity, however, is not statistically significant. ( $p > .10$ )

If a cut-off score of 12 is assigned for the motivation area, it is interesting to note that 20 out of 33 (61%) of the superior students attain or exceed this score, whereas only 4 out of 16 (25%) of the probation students reach or exceed this score. Assigning a cut-off score for the emotional stability and maturity area in its entirety is not feasible since the difference between the means for the two groups is not of sufficient magnitude. However, it is possible to raise the discriminatory power of the interview by using only the ratings of the best categories and also by assigning weights to the strongest categories. By using only four categories (study procedures, definiteness of occupational goals, curiosity, and reaction to stress), 66% of the superior students reach or exceed a cut-off score of 21 whereas only 13% of the probation students attain this score. In using this procedure a weight of 3 was assigned to the study procedures category and a weight of 2 was assigned to the reaction to stress

category since these were the two best categories as far as chi-square results were concerned. The use of weights simply involved multiplying all study procedures ratings by 3 and reaction to stress ratings by 2.

By using these same categories and weights and with a cut-off score of 20, 75% of the superior group reach or exceed this score whereas only 31% of the probation students attain or exceed it. These appear to be the two best cut-off scores.

#### D. ANALYSIS OF ADDITIONAL INTERVIEW ITEMS

In the construction of the interview form used in this study, several additional items were added to some of the categories. These items, although somewhat relevant to an interview of this type and to the categories in which they were placed, could not be included in the final ratings for each subject due to the time element or other factors involved. A separate analysis of these items, however, yielded some interesting results.

In the first category, work experience, there is one such item which was not included in the ratings. As stated in the interview, it reads:

7. Do you work now? How many hours per week?  
Why?

Following is a chi-square test of part one of this item.

TABLE XIV. Chi-square for part one of Item 7 of Work Experience. (Do you work now?)

<u>Group</u>	<u>Yes</u>	<u>No</u>	<u>Totals</u>
Probation	5	11	16
Superior	13	20	33
Totals	18	31	49

$$x^2 = .308$$

$$df = 1$$

$$p > .10$$

A tabulation of part two of this item revealed that 31% of the 16 probation students were currently employed for an average of 24 hours per week. For the superior group, 40% were working at the time for an average of 20 hours per week. The differences between the two groups, however are not statistically reliable.

Two other items not included in the interview ratings are found in the definiteness of occupational goals category. They read:

4. What do your parents want you to do when you graduate?
5. What do you think about their choice?

The chi-square analysis here was based on whether or not parents actually expressed an occupational choice. Since the occupation could have been expressed in either item 4 or 5, the two items were analyzed together.



TABLE XV. Chi-square for Items 4 and 5 of Definiteness of Occupational Goals

<u>Group</u>	<u>Yes</u>	<u>No</u>	<u>Totals</u>
Probation	10	6	16
Superior	8	25	33
Totals	18	31	49

$$x^2 = 6.786$$

$$df = 1$$

$$p < .01$$

It is seen from Table XV that the expression of an occupational choice is more characteristic of probation students than of superior students and the result is statistically reliable.

One other item in the definiteness of occupational goals category was not included in the ratings.

This is item 6 and is stated in the following way:

6. What grade average did you expect to attain last September when you first started to college? (A, B, C, etc.)

Using grades A and B as one separate category, a chi-square analysis of this item was made.

TABLE XVI. Chi-square for Item 6 of Definiteness of Occupational Goals

<u>Group</u>	<u>C</u>	<u>A &amp; B</u>	<u>Totals</u>
Probation	14	2	16
Superior	15	18	33
Totals	29	20	49

$$x^2 = 7.886$$

$$df = 1$$

$$p < .01$$

An examination of Table XVI shows that superior students characteristically report that they expected to attain higher grade averages than probation students and the result is statistically significant.

The final item which lends itself to a separate analysis is item 1 of the study procedures category. As stated in the interview, it reads:

1. How many hours per week did you spend studying in high school?

The mean number of hours reported was 8.4 for the probation group and 10.3 hours for the superior group. A t-test of the significance of the difference between these two means yields a value which is not statistically reliable ( $p > .10$ ).

#### IV. DISCUSSION

##### A. RESULTS OF ANALYSIS OF THE SEVEN INTERVIEW CATEGORIES

A survey of the chi-square analyses for the seven categories yields some rather interesting results. An examination of the chi-square table for work experience indicates that results are not significant in the predicted positive direction. However, it is interesting to note that the results approach significance in the opposite direction (p-value between .10 and .20). Thus, there is a trend for probation students to have more work experience than superior students. It may be inferred that students who spent large amounts of time in outside employment in high school, have interests which tend to detract from school work. It is possible that this tendency may likewise be carried over into college work. This hypothesis seems to lend support to evidence obtained by Wedemeyer(43). (See Chapter 1, p.7).

An analysis of the study procedures category

revealed, as might be expected, that the difference between probation and superior students is statistically significant,  $p$  being far below .01. The difference here is in the predicted direction, for superior students report significantly better study habits than probation students.

In regard to the reaction to stress category, results indicate that more mature responses to stressful situations tend to be more characteristic of superior than of probation students. Although the difference is not statistically reliable ( $p$  between .05 and .10), a strong trend in the expected direction is indicated. A larger percentage of probation students seem to withdraw or respond inappropriately to stressful situations.

The results of the chi-square analysis for the categories; definiteness of occupational goals, curiosity, independence - dependence and anticipated degree of participation in college life, are not statistically significant, yielding in each case a  $p$  - value  $> .10$ . However, an examination of the chi-square table for curiosity indicates that a larger percentage of superior students than of probation students show more curiosity about their classroom work. ( $p$  between .10 and .15). This is revealed in their doing additional assignments, reading ahead in the text, etc.

#### B. RESULTS OF TOTAL RATINGS

The hypothesis that better motivation is more characteristic of superior than of probation students is supported by the results of the experiment. Using the sum of the ratings for the motivation area as measures of motivation, a statistically significant difference was obtained for the two groups in the predicted direction ( $p < .05$ ). It is thus apparent that the more highly motivated student tends to study harder and consequently earns better grades.

Although a difference was obtained for the two groups in the emotional stability and maturity area, this difference was not statistically reliable. We may speculate that perhaps the emotional makeup of the student does not have as serious an effect upon his academic performance as does his motivation except, of course, in the case of serious maladjustments. As a matter of interest, several studies in the literature cite evidence that students with unsatisfactory emotional adjustment scores on personality tests tend toward higher grades than students with excellent emotional adjustment scores. (14), (23), (35). This may partially account for the fact that emotional stability and maturity ratings did not differentiate the two groups. Of course, there exists the possibility that the interview is not a valid measure of emotional stability and maturity among students.

By using only the ratings of the most significant categories, however, it is possible to increase a great deal

the predictability of the interview. When an appropriate cut-off score is assigned and weights attached to the more significant categories, 66% of the superior students can be correctly identified as compared to only 13% of the probation group. These percentages reach the values of 75% for superior and 31% for probation students when a lower cut-off score is used. A cross validation study is needed here, however.

### C. DISCUSSION OF ADDITIONAL INTERVIEW ITEMS

As was stated above, several additional items were added to the interview which were not included in the category ratings. The first such item, question 7 of the work experience category which reads: "Do you work now? How many hours per week? Why?", was not found to be statistically significant.

The results, however, of items 4 and 5 of the definiteness of occupational goals category proved to be quite reliable ( $p < .01$ ). Basing the analysis of these two items on whether or not parents expressed an occupational choice, it was found that parents of probation students more often express an occupational choice than parents of superior students. It may thus be inferred that students who are allowed to choose their own vocations strive harder toward attaining their goals. It seems entirely likely that the person who has been given some measure of independence

in the choice of his field of work will be more content and consequently work harder knowing that the choice has been his own.

Item 6 of the same category was also analyzed separately, results again proving to be quite significant ( $p < .01$ ). Thus it is evident that superior students report that they expected to attain higher grade averages than probation students at the time of enrollment in college. During the time of the interviewing, however, all students were well aware of their academic standing and it may be that the student's expected grades tend more to approximate his attained grades as the semester progressed. On the other hand, it is possible that the reporting of the expected grade average is reasonably true and merely represents the student's knowledge of his own ability.

One final item not included in the interview ratings is item 1 of the study procedures category. (1. How many hours per week did you spend studying in high school?) Results of the analysis of this item, however, were not statistically significant, although the mean number of hours was higher for the superior than for the probation group.

In summary it may be well to present a picture of the superior student as compared to the probation student by using the findings obtained from the interview. The superior student, first of all, is more highly motivated than the pro-

bation student and consequently tends to earn higher grades. He also appears to have less work experience than the probation student perhaps devoting larger amounts of time to school work. As might be expected, the superior student devotes more time to study, shows more interest in his school work and uses more efficient study procedures. The superior student also seems to respond in a more mature manner to stressful situations. Moreover, it is characteristic of the superior student to make his own vocational choice without parental help. Finally, the superior student, at the time of enrollment in college, reports that he expected to attain a higher grade average than the probation student.



## V. SUMMARY AND CONCLUSIONS

The experiment reported in this paper was designed to investigate the relationship between certain non-intellective factors and academic achievement. To study this relationship 49 male college freshmen, 16 probation and 33 superior students, were interviewed using an interview form developed particularly for this study. Two non-intellective factors were under consideration in this study: motivation and emotional stability and maturity. Under the motivation area there was included in the interview four sub-areas or categories and three categories were included under the emotional stability and maturity area. After each student was interviewed, he was given a rating (on a separate rating sheet) for each of the seven sub-areas or categories. By adding the ratings of the appropriate categories, it was possible to assign each student two total ratings--one for motivation and one for emotional stability and maturity. Ratings of the two groups of students were compared for the two main areas as well as for the seven

categories under these areas. Also responses of the two groups to several additional items not included in the ratings were compared.

The results of the study are summarized in the following statements.

1. Higher motivation was more characteristic of superior than of probation students, the result being statistically significant.
2. As measured by the interview, there was no difference in the emotional stability and maturity of superior students as compared to probation students.
3. Superior students report significantly better study procedures than probation students.
4. There is a trend for probation students to have more outside work experience than superior students.
5. A slight trend is indicated for superior students to respond in a more mature manner to stressful situations.
6. The expression of an occupational choice by parents is significantly more characteristic of probation than of superior students.
7. Superior students reported that they expected to attain higher grade averages than probation students at the time of college enrollment, the result being statistically significant.
8. By using the four best interview categories and assigning a cut-off score, it is possible to correctly identify 66% of the superior students whereas only 13% of the probation students are correctly identified. Using a lower cut off score, 75% of the superior students are correctly identified as compared to 31% of the probation students.

## SUGGESTIONS FOR FURTHER RESEARCH

One possibility for further study might involve an item analysis for the purpose of excluding irrelevant items from the interview. This could have the advantage of perhaps refining the ratings should the interview be used on another population.

Likewise a study of those items in the three categories in which definite trends were indicated should yield worthwhile information. Data obtained from an analysis of this sort could be used in the possible reconstruction of the interview form.

Further investigation, possibly with this same data, might include a check on the validity of the interview used in this study by combining the ratings with the results of diagnostic tests. Such test results are available for each student used in this study. A comparison of interview ratings and M.M.P.I. profiles for emotional adjustment, stability and maturity might prove significant.

Another possibility for further research might involve the use of this or a similar interview on a more restricted population such as for example, achieving and non-achieving students of high ability. This procedure would not have been feasible in this study, since the number of subjects would have been too small. However, in schools where the enrollment is large, such a study could be undertaken.

It would also be interesting to determine the effect of such factors as age, veteran vs. non-veteran status, socio-economic status, or marriage upon academic performance.

Possibilities for further study of the problem herein presented include the construction of a questionnaire, perhaps using the best items found in the interview form of this study. Of course, an item analysis should be fundamental to any research of this sort. There comes to mind several advantages in using such a procedure with incoming, freshmen, the main one perhaps being its ease of administration.

A list composed of a number of discriminating items in which students would check those which apply to themselves is another interesting possibility. Such a check list when administered to Freshmen might yield valuable information as far as the prediction of academic performance is concerned.

Perhaps a more refined procedure which might be used includes a forced-choice technique. In this procedure, discriminating items are divided into groups of four. The subject responds to the test by selecting one item of the four which applies the most to himself and one item which applies the least. This instrument has the advantage of reducing the chances of "faking" responses--a drawback to many other techniques.

It is apparent that there are many possibilities for further research in this area. Our knowledge of the contri-

bution of non-intellective factors to academic performance is yet rather fragmentary. Nevertheless the importance of such factors cannot be overstressed.

## APPENDICES

APPENDIX A: LETTER TO PROBATION STUDENTS

November 29, 1955

Grades recorded for you in the Office of the Registrar show that you were not actually passing nine(9) semester hours of work for the first two marking periods (October and Mid-Semester 1955). As you know, this is considered very unsatisfactory achievement. Unless you take immediate steps to improve the quality of your work, you will definitely interfere with your educational progress. I sincerely hope that you will do everything in your power to bring all of your work up to a creditable standard before the Christmas holidays.

It is recognized that in a few cases students are placed on the deficient list because of "Incomplete" grades in some subjects. Please note that the Scholarship Committee regards the grades of "I", "E", and "F" as failing grades for the purpose of determining scholastic accomplishment. If you have received a grade of "I", please see the instructor concerned immediately and do whatever is necessary to convert the "I" to a passing grade, if possible.

Representatives of the Personnel Committee have consented to interview the deficient students to try to assist them in improving their work. These interviews will be held at a time suitable to you during the next two weeks. You are requested to see my secretary, Miss \_\_\_\_\_, immediately to arrange for the time of your interview. Our office is on the 2nd floor of Ryland Hall.

It is my earnest wish that you will show definite improvement in your work so that at the end of the semester there will be no question about your being academically eligible to continue in college. I hope that you will feel free to consult with me about your work or about any other problems which may be troubling you or interfering with your college work.

Sincerely yours,

Dean of Students

APPENDIX B: LETTER TO SUPERIOR STUDENTS

December 5, 1955

During the Thanksgiving Holiday I had the opportunity to review the Mid-Semester grades and was pleased to discover that you have been doing excellent work so far as a freshman. I want to congratulate you on your fine record thus far and hope that you will continue the good work.

For research purposes this year, a member of the Personnel Committee is conducting a number of interviews with students who are doing well academically. Since your college work places you in this category, we would appreciate it if you could come by and spend a half-hour or so of your time with us. This is an important project for the College and your help would be greatly appreciated. If you possibly can, please contact my secretary, Miss \_\_\_\_\_, 2nd floor of Ryland Hall, for an appointment. These conferences must be completed before the start of the Christmas Holiday.

Sincerely yours,

---

Dean of Students



## APPENDIX C: INSTRUCTIONS TO RATERS

### INSTRUCTIONS TO RATERS

All ratings are done on the separate sheets provided. There is a separate rating scale for each major area (Past Work Experience, Study Habits, etc.) covered in the interview.

On the rating sheet, the rater is to fill in the information at the top of the page: Student's Name, Rater's Name and Date. Then the rater should read through the rating scale for the first category only, making note as to which items he should rate in that category. The rater should also read how points one, three and five of the first category are defined.

Next the rater turns to the student's completed interview form and reads only the items in the first category that are to be rated; at the same time trying to determine at which point on the scales the subject satisfies the definition of that point. Referring again to the rating sheet, the rater then makes his decision as to the proper point on the scale and then encircles the number at that point. Although points two and four are not defined, they may be used when the rater feels that the person being rated appears to fall between the points specifically defined (one, three and five). This procedure is then followed for each of the remaining categories.

It should be pointed out that each category is rated separately. Information not included in the category being rated (i.e. anywhere else in the interview) should not influence the rater's judgment for that particular category.

A sample rating for the category Past Work Experience is included on the next page.

## Sample Rating

### A. Past Work Experience

1. What kind of work have you done in the past? For how long: on each job? *farm work - for my father & neighbors farmers - 4 yrs Clerk in drug store - full time for 2 summers.*
2. In what ways in the past have you contributed to your own support? To family support? *I bought most of my clothes for the past 4 yrs - None to family*
3. Have you ever had more than one job at a time? For how long?  
*No*
4. What have you done for the past four summers? (starting with the last summer). *Clerk in drug store Farming*
5. In High School how did you spend leisure time after school and on Saturdays?  
*Sports, work around the farm*
6. How much of your college expenses is from your own earnings and savings?  
*Just clothes & spending money*
7. Do you work now? How many hours per week? Why?

*No*

### Rating

#### A. Work Experience - (Rate items one thru six)

1	2	3	4	5
No experience Whatever		Some work experience. At least two jobs held. Has contributed partially to own support.		Has worked for past 3 or 4 summers-also after school. Has contributed to own and family support Has even held more than one job at a time. Most all college expenses comes from own savings and earnings.

APPENDIX D: TABLE OF EACH SUBJECTS INTERVIEW RATINGS

Experimental Group								N= 16
Subject	Category							Total Ratings
	1	2	3	4	5	6	7	
E-1	4	2	1	2	1	2	2	9-5
E-2	4	1	5	1	1	3	1	11-5
E-3	3	2	2	2	3	3	3	9-9
E-4	4	3	5	2	4	3	3	14-10
E-5	3	3	2	3	3	4	4	11-11
E-6	4	2	3	3	4	2	2	12-8
E-7	4	2	3	2	2	1	1	11-4
E-8	4	3	1	1	2	4	1	9-7
E-9	3	2	1	2	1	3	3	8-7
E-10	4	1	3	2	3	3	2	10-8
E-11	2	2	3	3	4	3	3	10-10
E-12	4	2	2	2	3	4	1	10-8
E-13	3	3	3	2	2	1	3	11-6
E-14	4	3	3	3	3	3	3	13-9
E-15	3	3	4	3	2	2	4	13-8
E-16	4	2	2	3	1	4	3	11-8
Control Group								N= 33
C-1	2	4	5	2	3	4	1	13-8
C-2	4	3	1	2	5	3	3	10-11
C-3	4	4	2	2	4	5	1	12-10

Subject	Category							Total Ratings
C-4	2	3	5	2	2	1	2	12-5
C-5	5	4	4	5	3	4	2	18-9
C-6	1	3	1	4	2	2	1	9-5
C-7	3	1	4	2	1	4	3	10-8
C-8	2	4	2	3	3	3	3	13-9
C-9	2	3	3	4	4	2	3	12-9
C-10	4	3	5	1	2	3	3	11-8
C-11	3	4	1	3	1	2	2	11-5
C-12	2	4	3	2	2	2	4	11-8
C-13	4	4	4	3	5	4	3	15-12
C-14	4	4	2	3	2	4	1	13-7
C-15	4	3	5	1	3	2	1	13-6
C-16	2	3	5	1	5	1	3	11-9
C-17	2	2	2	2	3	2	1	8-6
C-18	1	1	3	3	3	2	2	8-7
C-19	4	3	5	3	2	2	2	13-6
C-20	2	3	2	4	1	5	3	11-9
C-21	4	4	4	5	4	4	2	17-10
C-22	4	3	3	2	3	4	3	12-10
C-23	3	3	4	3	4	2	3	13-9
C-24	3	3	1	2	3	2	2	9-7
C-25	3	4	4	2	4	3	2	13-9
C-26	1	3	3	3	4	3	1	10-8
C-27	3	4	3	4	3	4	2	14-9
C-28	4	4	4	2	4	1	4	14-9

Subject				Category				Total Ratings
C-29	4	4	4	3	4	4	1	15-9
C-30	4	4	2	2	2	3	2	12-7
C-31	4	4	2	4	4	1	4	14-9
C-32	2	4	1	3	3	2	4	10-9
C-33	2	4	3	4	3	2	3	13-8

APPENDIX E: SAMPLE INTERVIEW AND RATING SHEET

STUDENT INTERVIEW

I. MOTIVATION

A. PAST WORK EXPERIENCE

1. What kind of work have you done in the past? For how long; on each job? *Commercial fishing (6 mos) Coin teller at Federal Reserve Bank (18 mos) Grocery store Clerk (3 mos) Army (2 yrs) Farming*
2. In what ways in the past have you contributed to your own support? To family support? *Have been self sufficient for 4 yrs. I have contributed some to family (money for food, fuel etc)*
3. Have you ever had more than one job at a time? For how long?  
*No*
4. What have you done for the past four summers? (starting with the last summer)  
*Farming, Army, Army, Federal Reserve Bank*
5. In High School how did you spend leisure time after school and on Saturdays?  
*Playing sports also doing odd jobs at home*
6. How much of your college expenses is from your own earnings and savings?  
*All of it, of course I have the G.I. Bill also*
7. Do you work now? How many hours per week? Why?  
*No*

B. STUDY PROCEDURES

1. How many hours per week did you spend studying in High School?  
*About 5 hrs. per week*
2. How much time do you spend studying now? (per week)  
*About 15 hrs.*
3. How do you study? What technique do you use? Where do you study? When do you study?  
*I go over papers and notes and try to memorize them. I study only in my home room from 2:00 to 4:00 + 7:00 to 9:00 at night.*
4. Do you study alone or with others? Why?  
*Some to back - but I learn more when I study alone*
5. What distractions annoy you while you are attempting to study? Are there many?  
*Telephone calls, someone doing loud talking. There aren't too many, however*

6. Do you have difficulty in concentrating? What do you generally think about? *No, that's something that doesn't bother me too much.*

**C. DEFINITENESS OF OCCUPATIONAL GOALS (on entering college)**

The next series of questions deal with how you felt during orientation week last September.

1. What was your object in coming to college--your main goal? *To advance my education, I think it is necessary to get a good job.*
2. What occupational area or profession did you plan to enter upon your graduation? Why did you choose this? *I'm not sure. I've thought some about the business field but I can't say for sure.*
3. Have you changed your mind since entering college? Why? *Well I've thought about medicine but that takes a long time.*
4. What do your parents want you to do when you graduate? *I've heard Mother express an interest in law. Dad likes engineering.*
5. What do you think about their choice? *I guess every parent wants his son to go as high as he can.*
6. What grade average did you expect to attain last September when you first started to college? (A, B, C, etc.) *About a C average.*

**D. CURIOSITY**

1. What magazines and newspapers do you read? *Life, Look and Time. About all the popular ones. Richmond Newspapers - New York Times.*
2. What additional work over and above normal assignments do you do? *Well, when something is discussed in class about which I know little, I look it up in the library, especially history.*
3. What books other than texts have you bought for yourself since entering college? *Martin Luther's Life Story. The American Revolution. Many novels, especially historical ones.*
4. Do you expect to sell your books after you use them? *No, I'd like to keep most of them, of course I'll give some to the less interesting ones.*
5. How often do you visit the library on campus? Downtown? Why? Do you browse? *On campus, about 3 times a week for study - research. About once every two weeks downtown. I seldom browse around.*
6. Have you ever collected anything? *yes, stamps for 5 years - Also travel folders.*

7. Do you have a hobby? How much time do you spend on it?

*Just reading  
I don't have time for that now*

## II. EMOTIONAL STABILITY AND MATURITY

### A. REACTION TO STRESS

What I am interested in now is finding out how you react to a tough situation.

1. What situations have you been in which meant a lot to you and something or someone interfered with what you wanted to do? What did you do? *I don't like someone to interfere while I'm studying for a test. But I don't say anything to him. I just try to avoid him.*
2. What do you do when someone steps in your way--- or interferes with your doing something? *I don't like it but I won't tell him so.*
3. How do you feel when a professor assigns a great deal of work for you to do? How do you usually respond to the situation? *That's rough. I usually put it off until the last minute like everybody else.*
4. What do you do when you get ready to take a test and find that there are some questions about which you know absolutely nothing? *I just skip over it. That has happened to me a lot. I get confused right easily.*
5. How do you feel when you are called on in class and you are not sure of the answer to the question? *I'm real embarrassed. I just wait until he calls on someone else.*
6. How do you feel about your present academic situation that is being on the delinquent list? What have you done about it? *It's not as good as it could be. I just don't know exactly what to do about it.*

### B. INDEPENDENCE---DEPENDENCE

1. Do you ever recall making a decision by yourself that affected your life a great deal? If so, what? Did anyone disagree with you on it? *No, I can't recall making any real important ones.*
2. Do your parents have a hand in the selection of your clothes? How old were you when you first started choosing your own? *No, not now. I have been choosing my own since age 15.*
3. What is your first thought or effort when you meet a very difficult situation? *I try to remain calm and make the best of it (getting frantic doesn't help much).*
4. How often do you visit your home? How far is it? *I've been once this year (70 miles)*



5. How many letters do you get from home every week?

*usually I get one per week*

6. Have you been back to your old High School since entering college? How many times?

*No, I haven't. I don't expect too*

**C. ANTICIPATED DEGREE OF PARTICIPATION IN COLLEGE LIFE:**

1. Last September when you first started to college, how did you plan to spend your time?

*Mostly in study, I didn't know just what to expect, however -*

2. What Social Life did you anticipate?

*To meet as many boys as I could. Some dates but not too many.*

3. What organizations did you plan to join?

*Fraternity - also I would like to get in campus politics.*

4. Did you expect to attend dances, athletic events?

*How many have you attended? yes, some, anyway. Been to 2 dances - very few athletic events.*

5. How many nights per week did you plan to go out with other students?

*About 2*

6. In coming to the University of Richmond, what were your thoughts about it being a co-ed school?

*well, I knew it was co-ed. I didn't want to go to school with just boys.*

RATING SHEET

STUDENT'S NAME Doe, John DATE 12-16-55

RATER'S NAME Doe, Richard

I. MOTIVATION

A. WORK EXPERIENCE - (Rate items one thru six).

<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>
No experience whatever		Some work Experience. At least 2 jobs held. Has contributed partially to own support		Has worked for past 3 or 4 summers-also after school. Has contributed to own & family support. Has even held more than one job at a time. Most all college expenses come from own savings & earnings.

B. STUDY PROCEDURES - (Rate items two thru six)

<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>
Studies little or not at all. Poor technique. Easily distracted. Studying definitely secondary to other activities.		Average amount of preparation. (about one hour per day for each class). But does only what is required.		Most of time spent in study and class preparation. Good, well-established habits. Terrific drive For knowledge.

C. DEFINITENESS OF OCCUPATIONAL GOALS - (Rate items one thru three)

<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>
Apparently no aims or goals whatever or has a great variety of plans and changes mind frequently		Has occupational area in mind & appears fairly sure of himself. At least appears headed in some direction.		Very clearly defined goals. Is sure of his choice.

D. CURIOSITY (Rate items one thru seven)

1	2	3	4	5
No apparent curiosity whatever. Even indifferent to normal assignments		Average amount of interest & curiosity shown. Has several areas in which some curiosity is apparent but is apt to lose interest.		Great deal of curiosity & interest shown in most phases of college activity. Does lot of outside reading. Pursues interests diligently.

II. EMOTIONAL STABILITY AND MATURITY

A. REACTION TO STRESS (Rate items one thru six)

1	2	3	4	5
Very inappropriate responses to stress. Extremely rigid or inflexible approach. Often "stews in own juice". Withdraws frequently from stress.		Fairly appropriate responses but still somewhat rigid. Withdraws occasionally from stressful situations		Quite appropriate responses. Very adaptive. Usually removes stress by attacking it successfully. Seldom withdraws from stress.

B. INDEPENDENCE - DEPENDENCE (Rate items one thru six)

1	2	3	4	5
Very dependent person. Leans on others for decisions. Can't break old ties.		Fairly independent person. Decides most things for himself but is somewhat unsure of his decisions. Has moderate amount of old ties.		Quite independent person. Feels responsible for own decisions. Has few old ties.

C. ANTICIPATED DEGREE OF PARTICIPATION IN COLLEGE LIFE (Rate items one-six)

1	2	3	4	5
Planned to participate little or not at all. College is merely classes, study, tests, etc.		Some participation anticipated altho doesn't have definite amount in mind		Person appears to desire to take part in many activities. Feels that college is "a new way of life" for him.

## BIBLIOGRAPHY

1. Altus, William D., "A College Achiever and Nonachiever Scale for the M.M.P.I.", J. App. Psych., 1948, 32, 385-397.
2. \_\_\_\_\_ "Non-Intellective Factors and Grades: Study Habit and Adjustment Tests", Amer. Psychologist, 1949, 4, 388-389.
3. Ames, Viola, "Factors Related to High School Achievement", Psychol. Abstr., 1943, 17, 467.
4. Benditt, Marcella W., "The Relationship Between Some Factors other than Intelligence and School Achievement", Unpublished Thesis, 1948, A.M., U. of Chicago.
5. Borow, Henry, "Current Problems in the Prediction of College Performance", Psychol. Abstr., 1947, 21, 289.
6. Carter, Homer L.J., & McGinnis, Dorothy J., "Some Factors which Differentiate College Freshmen Having Lowest and Highest Point-Hour Ratios", Psychol. Abstr., 1953, 27, 630-631.
7. Cumings, Edgar C., "Causes of Student Withdrawals at Depauw University", Sch. & Soc., 1949, 70, 153.
8. Darley, J. G., "Scholastic Achievement and Measured Maladjustment", J. App. Psych., 1937, 21, 485-493.
9. Dearborne, Walter F., "The Student's Background in Relation to School Success", Psychol. Abstr., 1949, 23, 783.
10. DiVesta, Francis J., Woodruff, Asahel D., & Hertel, John P., "Motivation as a Predictor of College Success", Educ. Psychol. Measmt., 1949, 9, 339-348.
11. Dows, Robert J., "Understanding Students of High Capacity", J. Higher Educ., 1952, 23, 327-330.
12. Fredericksen, Norman, & Schrader, W. B., "Vocational Plans of Vet and Nonvet Students as Related to Disparities between Predicted and Actual College Grades", Amer. Psychologist, 1950, 5, 345.
13. Garrett, Henry E., Statistics in Psychology and Education, New York: Longmans, Green and Co., 1953.

14. Griffiths, G. R., "The Relationship between Scholastic Achievement and Personality Adjustment of Men College Students", J. App. Psych., 1945, 29, 360-367.
15. Hudley, John M., & Kennedy, Vera E., "A Comparison between Performance on a Sentence Completion Test and Academic Success", Educ. Psychol. Measmt., 1949, 9, 649-670.
16. Hunter, Ruth A., & Morgan, David H., "Problems of College Students", J. Educ. Psych., 1949, 40, 79-92.
17. Hurd, Archer W., "Problems of Collegiate Success or Failure with particular reference to Professional Schools of Medicine", Richmond: M.C.V. Bureau of Educ. Res. & Service, 1949, vii, 123p.
18. Kahn, Harris, & Singer, Erwin, "An Investigation of Some of the Factors Related to Success or Failure of School of Commerce Students", J. Educ. Psych., 1949, 40, 107-117.
19. Kirk, Barbara, "Test vs. Academic Performance in Mal-functioning Students", J. Consult. Psych., 1952, 16, 213-216.
20. Lacy, Oliver L., Statistical Methods in Experimentation, New York: The Macmillan Co., 1953.
21. Margulies, Helen, "Rorschach Responses of Successful and Unsuccessful Students", Psychol. Abstr., 1943, 17, 109.
22. Martin, Glenn C., "Interviewing the Failing Student", Psychol. Abstr., 1953, 27, 552.
23. McCandless, Boyd R., "The Rorschach as a Differential Predictor of Academic Success for Matched Groups of Highly Superior Men", Amer. Psychologist, 1947, 2, 414-415.
24. Myers, Robert C., "The Academic Overachiever: Stereotyped Aspects", Psychol. Abstr., 1951, 25, 190.
25. Montalto, F. D., "An Application of the Group Rorschach Technique to the Problem of Achievement in College", Psychol. Abstr., 1946, 20, 496.

26. Morgan, Henry H., "A Psychometric Comparison of Achieving and Non-achieving College Students of High Ability", J. Consult. Psych., 1952, 16, 292-298.
27. Munroe, R. L., "Prediction of the Adjustment and Academic Performance of College Students by a Modification of the Rorschach Method", Psychol. Abstr., 1946, 20, 98.
28. Myers, Robert C., "Biographical Factors and Academic Achievement: An Experimental Investigation", Psychol. Abstr., 1953, 27, 631-632.
29. Osborne, R.C., "How is Intellectual Performance Related to Social and Economic Background?", Psychol. Abstr., 1943, 7, 470.
30. Osborne, R.T. & Sanders, Wilma B., "Multiple Choice Rorschach Responses of College Achievers and Non-achievers", Educ. Psychol. Measmt., 1949, 9, 685-691.
31. Owens, William A., & Johnson, Wilma C., "Some Measured Personality Traits of Collegiate Underachievers", J. Educ. Psych., 1949, 40, 41-46.
32. Ryan, Francis J., "Personality Differences Between Under and Over-achievers in College", Microfilm Abstr., 1951, 11, 967-968.
33. Schultz, Douglas G., "The Validation of a Newly Developed Attitude-Interest Questionnaire for the Selection of College Students", Amer. Psychologist, 1950, 5, 282-283.
34. Sherriffs, Alex C., "Modification of Academic Performance Through Personal Interview", J. App. Psych., 1949, 33, 339-346.
35. Shoemaker, H.A. & Rohrer, J.H., "Relationship Between Success in the Study of Medicine and Certain Psychological and Personal Data", Psychol. Abstr., 1949, 23, 107-108.
36. Staker, James E., "A Preliminary Study of Factors Related to Overachievement and Underachievement", 1949, M.S., Ill. State Normal Univ.

37. Steinzor, Bernard, "Rorschach Responses of Achieving and Non-achieving College Students", Psychol. Abstr., 1945, 19, 19.
38. Strang, Ruth, "General Diagnosis of Student Failure", Educ. Psychol. Measmt., 1949, 9, 544-49.
39. Thompson, C.E., "Personality and Interest Factors in Dental School Success", Psychol. Abstr., 1946, 20, 34.
40. Thompson, Grace M., "College Grades and the Group Rorschach", J. App. Psych., 1948, 32, 398-407.
41. \_\_\_\_\_ "Personality Factors Characterizing the Achieving College Student as Revealed by the Rorschach: A Follow-up Study", Amer. Psychologist, 1949, 4, 388-389.
42. \_\_\_\_\_ "Non-intellective Factors and Grades: The Group Rorschach", Amer. Psychologist, 1947, 2, 415.
43. Wedemeyer, Charles A., "Gifted Achievers and Nonachievers", J. Higher Educ., 1953, 24, 25-30.
44. Westcott, Malcolm R., "The Clarity of Perception of Vocational Goals as Related to College Success", Unpublished Thesis, 1951, M.S., Penn. State Coll.
45. Winberg, Wilma C., "Some Personality Traits of Collegiate Underachievers", Proc. Iowa Acad. Sci., 1947, 54, 267-270.

## VITA

William Hensley Leftwich was born in Richmond, Virginia on July 1, 1931. He attended Highland Park and Chandler Junior High Schools, and was graduated from John Marshall High School in 1948. In June 1952 he received his B. A. degree from Richmond College, and after serving in the Armed Forces, entered the University of Richmond Graduate School in September 1954.