

AN EVALUATION OF HIGH SCHOOL GRADE INDICES AND ACADEMIC APTITUDE
TEST SCORES AS PREDICTIVE MEASURES OF SCHOLASTIC SUCCESS OF
NEGRO COLLEGE STUDENTS

A Thesis

Presented to

the Faculty of the Graduate School

University of Houston

In Partial Fulfillment

of the Requirements for the Degree

Master of Arts

by

George Custer Taulbee

August, 1949

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ABSTRACT OF THESIS

The purpose of this study was (1) to evaluate the high school academic record as a method of predicting academic success or failure of Negro freshman students in the first semester of college work at the Texas State University for Negroes; and (2) to determine how accurately academic success of these freshmen can be predicted from a knowledge of their scholastic aptitude as measured by the American Council on Education Psychological Examination (1948 Edition).

A sample of 180 entering freshman students at the Texas State University for Negroes was secured and data relating to their high school academic records and scores on the American Council on Education Psychological Examination were obtained. Coefficients of correlation were computed between the variables for the purpose of determining the nature and degree of relationship existing between those variables. In two instances regression equations were derived for the purpose of evaluating high school grades and A.C.E. scores as predictive measures of success on the college level.

The investigator concluded, as a result of the study, that neither the high school grade indices nor the A.C.E. test scores were very reliable as predictive measures of individual college grade averages.

It was found that the high school academic record was more closely related to the college grade average than were any of the A.C.E. scores.

Also the linguistic test scores on the A.C.E. were more closely related to college grade indices than either the total scores or the quantitative scores.

There was a closer degree of relationship between A.C.E. total scores and college grade indices than was the case for A.C.E. total scores and high school grade indices.

There was a slightly higher correlation between high school grades earned by large city school system graduates and their college grade averages than was the case for high school graduates regardless of size of school system.

PREFACE

One of the most difficult problems confronting an investigator is the gathering of the data necessary for his study. In this case however, this problem was a relatively minor one because of the cooperation and assistance rendered the investigator by the faculty of the Texas State University for Negroes.

It is with a deep feeling of gratitude, therefore, that I express my appreciation to Dr. Howard E. Wright, head of the Department of Psychology at the Texas State University for Negroes, for his guidance and assistance during the important phases of securing a sample of students and collecting data relating to the study. Also, gratitude is due Mr. William H. Bell, Registrar of the university, and Miss Augustus, a member of his staff, for their kind cooperation in making available the records of the institution.

I am deeply indebted to the chairman of my faculty committee, Professor Franklin L. Stovall, for his guidance and assistance in preparing the material contained herein.

TABLE OF CONTENTS

| CHAPTER | PAGE |
|--|------|
| I. THE PROBLEM AND REVIEW OF THE LITERATURE | 1 |
| The problem | 1 |
| Statement of the problem | 1 |
| Importance of the study | 1 |
| Review of the literature | 3 |
| Literature on the use of entrance examinations | 3 |
| II. GROUPS STUDIED AND MATERIALS USED | 5 |
| Groups studied | 5 |
| Group I | 5 |
| Group II | 5 |
| Group III | 6 |
| Grade indices and test materials | 6 |
| High school grade indices | 6 |
| College grade indices | 7 |
| Scholastic aptitude test scores | 13 |
| III. TECHNIQUES AND ANALYSIS OF DATA | 14 |
| Coefficients of correlation | 14 |
| High school grades and college grades, Group I | |
| High school grades and college grades, Group II | 22 |

CHAPTER

PAGE

| | |
|--|----|
| A. C. E. Total Scores and college grades, Group II | 22 |
| A. C. E. Total Scores and high school grades, Group II | 28 |
| A. C. E. Quantitative Scores and college grades, Group II | 28 |
| A. C. E. Linguistic Scores and college grades, Group II | 28 |
| High school grades and college grades, Group III | 29 |
| IV. SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS | 30 |
| Summary | 30 |
| Conclusions | 30 |
| Recommendations | 32 |
| BIBLIOGRAPHY | 34 |

LIST OF TABLES

| TABLE | PAGE |
|--|------|
| I. High School Grade Indices, College Grade Indices, and American Council on Education Psychological Examination Raw Scores for the One Hundred and Eighty Students | 8 |
| II. Coefficients of Correlation and Probable Errors | 15 |
| III. Differences Between Actual University Grade Index of Each Student and the Expected Grade Index as Predicted by Use of the Regression Equation Derived from Data Based on the High School Indices and the College Indices | 17 |
| IV. Differences Between Actual University Grade Index of Each Student and the Expected Grade Index as Predicted by Use of the Regression Equation Derived from Data Based on the A. C. E. Total Scores and the College Indices | 24 |

CHAPTER I

I. THE PROBLEM

Statement of the problem. It was the purpose of this study (1) to evaluate the high school academic record as a method of predicting academic success or failure of Negro freshman students in the first semester of college work at the Texas State University for Negroes and (2) to determine how accurately academic success of these freshmen can be predicted from a knowledge of their scholastic aptitude as measured by the American Council on Education Psychological Examination.

Importance of the study. Each year universities and colleges are confronted with many problems relating to their incoming freshman student groups. Two of the most important of these problems are (1) selecting wisely their student bodies from among the numerous individuals seeking admission; and (2) attempting to group the new students on the basis of general intelligence, academic achievement, and other factors pertinent to success in college in such a way that these students may obtain the maximum benefit from college as a whole. Many of these institutions employ either standardized tests or high school academic records, or both, in an effort to resolve such problems. And in general, most investigations into the degree of reliability of using such criteria for the prediction of success in university work have indicated that their inclusion in a general criterion is warranted.

However, a more special type of problem arises in the case of Negro college students and the prediction of academic success or failure

for them. In those geographic sections of the United States affording the Negro equal secondary school opportunities, the use of the high school academic record may prove as reliable for prediction of the Negro student's college success as for the white population. However, in other sections such as the South, it must be realized that equal educational opportunities are not available for all Negro students and the question is then posed concerning the feasibility of using their high school records for predictive purposes.

There remains also the equally important question, still largely unanswered, concerning the use of standardized test scores of Negro students as a means of predicting their academic success, and this is particularly true in the case of scholastic aptitude test scores. Tyler, summarizing the results of many investigations relating to the problem, reports:

The consistent finding, reported again and again, has been a difference in scholastic aptitude. Whenever whites and Negroes in the same city or region are compared, with a very few exceptions, the Negro mean is from one-half to one standard deviation below the white mean....¹

Thus it may be concluded that with such relatively lower performances on the part of the Negroes on such measures of scholastic aptitude, the results obtained by investigators in the cases of white student bodies do not necessarily obtain for Negro students. Few investigations have been made relating to this problem in the case of the Negro student population, and it remains an important one for those institutions in

¹ Leona E. Tyler, The Psychology of Human Differences, (New York: D. Appleton Century Company, Inc., 1947), p. 399.

which over eighty-eight thousand² Negroes are currently enrolled at the college level. In this study an attempt was made to add to the relatively meagre body of information concerning this problem.

II. REVIEW OF THE LITERATURE

As was indicated in the preceding section, little has been written regarding the use of high school academic records and scholastic aptitude examination scores as a means of predicting scholastic success for Negro college students. Many studies of this nature have been carried out using samples of white college students. However, it was not the purpose of this investigation to attempt a comparison of Negro and white groups and therefore these other studies will not be included in the background literature. A summary of those studies very closely related to the one at hand will be given in this section.

Literature on the use of entrance examinations. Johnson³ attempted to evaluate the use of certain tests as a means of predicting scholastic success of Negro students at the end of the freshman year. She used a sample of one-hundred and nine Negro freshmen who entered Fisk University in 1933 and 1934 and had taken the American Council on Education Psychological Examinations (1933 and 1934 editions respectively); the Iowa Silent

² Alain L. Locke, American Negroes, Encyclopaedia Britannica, 1949 Britannica Book of the Year, p. 502.

³ Minerva H. Johnson, "An Evaluation of Certain Tests as Predictive Measures of Scholastic Success at the End of the Freshman Year," Unpublished Master's thesis, Fisk University, Nashville, 1940, 78 pp.

Reading Test, Advanced; and the Otis Self Administering Test of Mental Ability, High Examination. She correlated each of these measures with the freshman grades (transmuted into sigma values) and concluded on the basis of these correlations that the psychological examination, when used alone, was about as efficient as when used with either or both of the other tests. The obtained coefficient of correlation between the scores on the psychological examinations and freshman grades was $.60^{+}.04$.

Mason and Wilkins⁴ sought to ascertain the degree of relationship between entrance test results and first semester grades for a group of two-hundred and five Negro freshmen entering Dillard University over a period of three years. These investigators used a battery of five tests including the American Council on Education Psychological Examination (edition not specified). They obtained a coefficient of correlation of $.44$ between the A.C.E. scores and first semester grades. They concluded, with respect to the A.C.E., that the psychological examination did not seem to measure adequately student ability within that particular group of students.

⁴ C. T. Mason and T. B. Wilkins, "Entrance Examinations and Success in College," The Journal of Negro Education, X (October, 1941), 631-34.

CHAPTER II

GROUPS STUDIED AND MATERIALS USED

I. GROUPS STUDIED

Group I. This group represented the total sample used in this investigation. It was composed of one-hundred and eighty students who matriculated in the Texas State University for Negroes, Houston, Texas, in September of 1948. All freshman students, male and female, were included in this study who met the following requirements:

1. They were high school graduates and records were available of their high school work.
2. They had had no prior college work at any university including Texas State University for Negroes.
3. They were enrolled in at least three college courses.

One hundred and three, or fifty-seven per cent, of this group were graduates of Negro high schools in the Houston public school system. Sixty-three students, or thirty-five per cent of the group, were graduates of school systems in Texas other than Houston, and eight per cent of the students came to the University as graduates of high schools located in the states of Louisiana, Oklahoma, Georgia, Oregon, Illinois, and Virginia. This sample of the entering freshman population was comprised then of students drawn primarily from the state of Texas and had as its largest subgroup graduates of Houston schools.

Group II. One-hundred and thirty seven of the students included in Group I had taken the American Council on Education Psychological Examination. They comprise Group II.

Group III. One-hundred and three students included in Group I were graduates of Houston high schools and had completed at least three years of their academic work at those schools prior to graduation. These students comprise Group III.

II. GRADE INDICES AND TEST MATERIALS

High School Grade Indices. A high school grade index was computed for each student in the sample. The high school grades for each student were obtained from the high school transcripts on file in the Registrar's office at the University. All grades were included in the computations with the exception of those given for courses in physical education and R.O.T.C. Each grade was then assigned a numerical value on this basis:

| Letter Grade | Value |
|--------------|-------|
| A | 5 |
| B | 4 |
| C | 3 |
| D | 2 |

The letter grade of "F", or failure, was not assigned a value nor was it included in the calculations inasmuch as only two recorded grades of "F" were included in the high school transcripts for this group and their influence was considered negligible by the investigator.

The numerical values of the grades for each student were then summed and the mean computed by dividing this sum by the total number of courses studied. Each average, or index, was multiplied by one hundred in order to avoid decimals in later calculations. The raw data presented in the table of this study, however, were recorded as decimals before

being multiplied by one hundred.

The high school grade indices of the one hundred and eighty students are presented in Column II of Table I. The mean grade index for this group was 3.62, which, in terms of letter grades, is a high "C" average. The standard deviation of the grade indices was .59 and the range was 2.80.

College Grade Indices. For the purpose of this study academic success for each student was defined as the number of quality points per semester hours earned by that student. Quality points were assigned to each college letter grade by means of the weighting system in effect at the Texas State University for Negroes. The weights for the several letter grades follow:⁵

| Letter Grade | Quality Points | Explanation |
|--------------|----------------|-------------|
| A | 3 | Excellent |
| B | 2 | Good |
| C | 1 | Fair |
| D | 0 | Poor |
| E | 0 | Conditioned |
| F | 0 | Failure |
| I | 0 | Incomplete |

All college grades for the first semester's work were included with the exception of those earned in physical training courses. The college grade index was then computed by multiplying the number of semester hours for each course by the number of quality points earned for that respective course, summing these products and dividing this sum by the total number of

⁵ The Texas State University for Negroes, Catalog 1948-1949, p. 14.

TABLE I
HIGH SCHOOL GRADE INDICES, COLLEGE GRADE INDICES, AND
AMERICAN COUNCIL ON EDUCATION PSYCHOLOGICAL
EXAMINATION RAW SCORES^T FOR THE ONE
HUNDRED AND EIGHTY STUDENTS

| Student | High School Grade Indices | College Grade Indices | A. C. E. Examination Scores | | |
|---------|------------------------------|--------------------------|-----------------------------|---------|-------|
| | | | Q-Score | L-Score | Total |
| 1 | 2.47 | .00 | 32 | 47 | 79 |
| 2* | 2.69 | .20 | 14 | 19 | 33 |
| 3 | 2.78 | 1.20 | 14 | 23 | 37 |
| 4* | 2.88 | 1.20 | 25 | 37 | 62 |
| 5* | 2.91 | .20 | 13 | 26 | 39 |
| 6* | 2.92 | .40 | 16 | 45 | 61 |
| 7* | 2.93 | .00 | 21 | 41 | 62 |
| 8* | 2.94 | .00 | 21 | 30 | 51 |
| 9 | 2.94 | .38 | 5 | 11 | 16 |
| 10* | 2.95 | .00 | 18 | 50 | 68 |
| 11* | 2.97 | .43 | 22 | 39 | 61 |
| 12* | 3.00 | .20 | 8 | 28 | 36 |
| 13 | 3.00 | .20 | 17 | 22 | 39 |
| 14 | 3.05 | .80 | 1 | 6 | 7 |
| 15* | 3.06 | .44 | 17 | 30 | 47 |
| 16* | 3.07 | .60 | 9 | 27 | 36 |
| 17* | 3.09- | .60 | 8 | 18 | 26 |
| 18 | 3.10 | .20 | 13 | 8 | 21 |
| 19 | 3.10 | 1.40 | 16 | 37 | 53 |
| 20* | 3.11 | 2.53 | 30 | 48 | 78 |
| 21 | 3.11 | 2.00 | 18 | 46 | 64 |
| 22* | 3.12 | 1.60 | 13 | 16 | 29 |
| 23 | 3.12 | 1.12 | 26 | 35 | 61 |
| 24 | 3.13 | .40 | 28 | 33 | 61 |
| 25* | 3.15 | .20 | 21 | 18 | 39 |
| 26* | 3.15 | 1.60 | 41 | 55 | 96 |
| 27* | 3.15 | .00 | 6 | 30 | 36 |
| 28* | 3.15 | 1.00 | 9 | 26 | 35 |
| 29* | 3.17 | .20 | 10 | 15 | 25 |
| 30* | 3.17 | .60 | 3 | 12 | 15 |
| 31* | 3.18 | 1.20 | 28 | 27 | 55 |
| 32 | 3.20 | .56 | 30 | 25 | 55 |
| 33* | 3.22 | .80 | 12 | 23 | 35 |
| 34 | 3.22 | .81 | 8 | 17 | 25 |
| 35* | 3.23 | 1.29 | 16 | 16 | 32 |
| 36* | 3.24 | .33 | 1 | 6 | 7 |

| Student | High School Grade Indices | College Grade Indices | A. C. E. Examination Scores | | |
|---------|------------------------------|--------------------------|-----------------------------|----------|-------|
| | | | Q-Scores | L-Scores | Total |
| 37 | 3.25 | 1.20 | 11 | 14 | 25 |
| 38 | 3.25 | .00 | 13 | 10 | 23 |
| 39 | 3.25 | .00 | 17 | 15 | 32 |
| 40* | 3.25 | 1.13 | 15 | 28 | 43 |
| 41 | 3.25 | .50 | 11 | 15 | 26 |
| 42 | 3.26 | .79 | 15 | 23 | 38 |
| 43* | 3.26 | .86 | 6 | 18 | 24 |
| 44* | 3.27 | 1.33 | 31 | 34 | 65 |
| 45 | 3.29 | 1.20 | 6 | 10 | 16 |
| 46 | 3.30 | .50 | 15 | 31 | 46 |
| 47* | 3.33 | .80 | 8 | 26 | 34 |
| 48* | 3.35 | .62 | 8 | 23 | 31 |
| 49* | 3.36 | 1.40 | 10 | 15 | 25 |
| 50* | 3.37 | .80 | 9 | 13 | 22 |
| 51 | 3.37 | .40 | 12 | 15 | 27 |
| 52 | 3.37 | .60 | 12 | 9 | 21 |
| 53 | 3.36 | .50 | 18 | 13 | 31 |
| 54* | 3.40 | 1.21 | 15 | 23 | 38 |
| 55* | 3.41 | .79 | 28 | 40 | 68 |
| 56* | 3.45 | 1.50 | 14 | 29 | 43 |
| 57* | 3.45 | 1.80 | 12 | 21 | 33 |
| 58 | 3.45 | 1.80 | 13 | 28 | 41 |
| 59 | 3.45 | .40 | 7 | 16 | 23 |
| 60* | 3.47 | .80 | 3 | 24 | 27 |
| 61* | 3.47 | 1.38 | 15 | 29 | 44 |
| 62* | 3.47 | .40 | 5 | 5 | 10 |
| 63* | 3.48 | 1.94 | 24 | 40 | 64 |
| 64 | 3.50 | 1.19 | 22 | 36 | 58 |
| 65 | 3.50 | .60 | 8 | 20 | 28 |
| 66 | 3.54 | .20 | 14 | 9 | 23 |
| 67* | 3.61 | .93 | 9 | 15 | 24 |
| 68* | 3.62 | 1.40 | 36 | 36 | 72 |
| 69* | 3.65 | 1.50 | 16 | 18 | 34 |
| 70* | 3.65 | 1.13 | 30 | 48 | 78 |
| 71* | 3.66 | .60 | 12 | 24 | 37 |
| 72* | 3.69 | 1.00 | 12 | 15 | 27 |
| 73 | 3.72 | .00 | 12 | 28 | 40 |
| 74 | 3.72 | .80 | 12 | 23 | 35 |
| 75* | 3.72 | .75 | 12 | 16 | 28 |
| 76* | 3.73 | .87 | 17 | 28 | 45 |
| 77 | 3.76 | 1.00 | 12 | 11 | 23 |
| 78 | 3.78 | .80 | 17 | 19 | 36 |
| 79 | 3.78 | .80 | 2 | 18 | 20 |

| Student | High School Grade Indices | College Grade Indices | A. C. E. Examination Scores | | |
|---------|------------------------------|--------------------------|-----------------------------|----------|-------|
| | | | Q-Scores | L-Scores | Total |
| 80* | 3.79 | 1.60 | 21 | 22 | 43 |
| 81* | 3.79 | 1.80 | 10 | 34 | 44 |
| 82* | 3.80 | .40 | 15 | 27 | 42 |
| 83 | 3.81 | .20 | 16 | 26 | 42 |
| 84 | 3.81 | 2.30 | 6 | 28 | 34 |
| 85* | 3.82 | 1.29 | 16 | 24 | 40 |
| 86 | 3.83 | .60 | 15 | 19 | 34 |
| 87 | 3.84 | 1.50 | 21 | 48 | 69 |
| 88* | 3.84 | 2.20 | 21 | 26 | 47 |
| 89* | 3.85 | .00 | 9 | 17 | 26 |
| 90* | 3.88 | 1.80 | 16 | 34 | 50 |
| 91 | 3.88 | 1.19 | 9 | 15 | 24 |
| 92* | 3.92 | 1.00 | 26 | 37 | 63 |
| 93 | 3.93 | 1.20 | 7 | 27 | 34 |
| 94 | 3.97 | .60 | 14 | 18 | 32 |
| 95* | 3.97 | 1.43 | 34 | 38 | 72 |
| 96* | 4.00 | .80 | 13 | 20 | 33 |
| 97* | 4.00 | .40 | 15 | 31 | 46 |
| 98 | 4.00 | .60 | 11 | 9 | 20 |
| 99* | 4.03 | 1.91 | 11 | 38 | 49 |
| 100 | 4.03 | 1.00 | 17 | 46 | 63 |
| 101* | 4.06 | 1.40 | 37 | 57 | 94 |
| 102* | 4.06 | .60 | 18 | 29 | 47 |
| 103 | 4.06 | .80 | 21 | 34 | 55 |
| 104* | 4.08 | 1.50 | 31 | 42 | 73 |
| 105 | 4.13 | 1.36 | 20 | 33 | 53 |
| 106* | 4.16 | .80 | 16 | 26 | 42 |
| 107* | 4.17 | 1.20 | 19 | 25 | 44 |
| 108 | 4.17 | 2.00 | 15 | 37 | 52 |
| 109 | 4.18 | .20 | 6 | 12 | 18 |
| 110 | 4.18 | 2.00 | 18 | 29 | 47 |
| 111* | 4.19 | 1.41 | 12 | 20 | 32 |
| 112* | 4.20 | 1.64 | 22 | 24 | 46 |
| 113 | 4.30 | 2.18 | 25 | 54 | 79 |
| 114 | 4.35 | 2.20 | 18 | 15 | 33 |
| 115 | 4.35 | 2.00 | 16 | 27 | 43 |
| 116 | 4.36 | 1.80 | 7 | 18 | 25 |
| 117* | 4.36 | 1.40 | 7 | 58 | 65 |
| 118* | 4.42 | 1.40 | 23 | 46 | 68 |
| 119 | 4.42 | 1.20 | 10 | 26 | 36 |
| 120* | 4.43 | 2.30 | 32 | 50 | 82 |
| 121* | 4.47 | 2.60 | 17 | 23 | 40 |
| 122 | 4.47 | 2.00 | 23 | 54 | 77 |
| 123* | 4.50 | 2.33 | 20 | 28 | 48 |

| Student | High School Grade Indices | College Grade Indices | A. C. E. Examination Scores | | |
|---------|------------------------------|--------------------------|-----------------------------|----------|-------|
| | | | Q-Scores | L-Scores | Total |
| 124* | 4.53 | 2.60 | 16 | 36 | 52 |
| 125* | 4.60 | 2.20 | 24 | 51 | 75 |
| 126* | 4.61 | .80 | 24 | 33 | 57 |
| 127* | 4.67 | 2.40 | 42 | 47 | 89 |
| 128* | 4.68 | 1.20 | 23 | 35 | 58 |
| 129 | 4.68 | 1.36 | 24 | 44 | 68 |
| 130 | 4.72 | .80 | 9 | 26 | 35 |
| 131* | 4.74 | 1.80 | 17 | 29 | 46 |
| 132* | 4.82 | 2.00 | 26 | 40 | 66 |
| 133* | 4.84 | 2.81 | 32 | 37 | 69 |
| 134* | 4.89 | 2.80 | 13 | 51 | 64 |
| 135* | 4.95 | 2.00 | 38 | 53 | 91 |
| 136* | 4.97 | 2.60 | 45 | 37 | 82 |
| 137* | 5.00 | 2.20 | 32 | 52 | 84 |
| 138 | 2.20 | .20 | | | |
| 139 | 2.27 | .20 | | | |
| 140 | 2.47 | .40 | | | |
| 141 | 2.59 | .75 | | | |
| 142 | 2.68 | .20 | | | |
| 143* | 2.76 | .40 | | | |
| 144 | 2.85 | .80 | | | |
| 145 | 2.89 | .20 | | | |
| 146 | 2.96 | 1.40 | | | |
| 147* | 3.00 | .30 | | | |
| 148* | 3.08 | 1.40 | | | |
| 149 | 3.09 | .25 | | | |
| 150 | 3.11 | .20 | | | |
| 151 | 3.13 | .00 | | | |
| 152* | 3.13 | .00 | | | |
| 153 | 3.13 | .00 | | | |
| 154 | 3.15 | .94 | | | |
| 155* | 3.16 | .00 | | | |
| 156 | 3.26 | .00 | | | |
| 157 | 3.26 | .93 | | | |
| 158* | 3.27 | 1.77 | | | |
| 159* | 3.34 | .20 | | | |
| 160* | 3.37 | .25 | | | |
| 161 | 3.37 | .00 | | | |
| 162* | 3.41 | 1.44 | | | |
| 163 | 3.42 | 1.20 | | | |
| 164 | 3.46 | .82 | | | |
| 165 | 3.50 | .50 | | | |
| 166* | 3.53 | 1.13 | | | |
| 167* | 3.58 | 1.75 | | | |
| 168 | 3.67 | 1.29 | | | |

T A. C. E. Scores were
available for 137
students only.

| Student | High School Grade Indices | College Grade Indices | A. C. E. Examination Scores | | |
|---------|------------------------------|--------------------------|-----------------------------|----------|-------|
| | | | Q-Scores | L-Scores | Total |
| 169 | 3.74 | 1.57 | | | |
| 170 | 3.79 | 1.25 | | | |
| 171* | 3.83 | 2.00 | | | |
| 172* | 3.83 | 1.60 | | | |
| 173* | 4.00 | 2.40 | | | |
| 174* | 4.03 | 2.00 | | | |
| 175 | 4.06 | .69 | | | |
| 176* | 4.26 | .80 | | | |
| 177* | 4.31 | 2.08 | | | |
| 178* | 4.38 | 2.06 | | | |
| 179* | 4.54 | 2.00 | | | |
| 180* | 4.64 | 1.60 | | | |

* These students are graduates from public high schools in Houston, Texas.

semester hours carried. This quotient was then multiplied by one hundred in order to avoid decimals in later calculations.

The college grade indices are presented in Column 3 of Table I. The mean college grade index was 1.03, which, in terms of letter grades, was slightly higher than a grade of "C". A grade of "C" would be approximately equivalent to earning one quality point for each of five courses carried. The standard deviation for this group was .59 and the range was 2.80. This range included averages ranging from that of failure to slightly less than that of "A".

Scholastic Aptitude Test Scores. The American Council on Education Psychological Examination, 1948 Edition, College Level, was the aptitude test used. This examination was administered by officials of Texas State University for Negroes to entering freshmen at the beginning of the academic year in September of 1948. Each student's performance on this test was recorded in terms of raw scores for the test as a whole (Total Score) and for each of the sub-test scores (Quantitative-Score and Linguistic-Score).

The last three columns in Table I include the recorded data relating to each student's performance on this test. These data were available for only one hundred and thirty-seven of the total group. The mean total score for the group was 44.79 and the standard deviation was 19.63. The highest total raw score was 96 and the lowest 7, thereby making the range 89. There was a decided tendency for the scores of the group to pile up at the lower end of the scale, thereby skewing the distribution to the right.

CHAPTER III

TECHNIQUES AND ANALYSIS OF DATA

Seven coefficients of correlation were computed by use of the Pearson "Product Moment" method of correlation and these coefficients are presented in Table II.

A coefficient of $.63 \pm .04$ was obtained when the high school averages of the one hundred and eighty students in Group I were correlated with the college grade indices for the first semester of work at the University. This obtained coefficient is statistically significant and it may be said that there is a fair degree of relationship between grades made in high school and college grades. Expressed in other words, there is only a fairly strong tendency for those students who made high grades in high school to be the same students who made the highest grades in college and for those who made low grades in high school to be the same students who made the low grades in the University.

From the distributions of high school and college indices the regression equation, $\bar{X} = .78Y - 174.21$, in the score form was computed. However, the standard error for a predicted score was high. For the group of 180 cases, for which college grade indices were predicted from their high school grade averages by means of the above regression equation, the standard error of estimate for a student's predicted college index was .56. That is, in terms of probability, the chances are only 68 in 100 that the college grade index can be predicted within .56 points of the true index. And if the chances are extended to include 95 in 100, the error of prediction is large--1.10 points.

TABLE II
COEFFICIENTS OF CORRELATION AND PROBABLE ERRORS

| Group | High School Indices | College Indices |
|--------------------------|------------------------|-----------------|
| <u>Group I (N=180)</u> | | |
| High School Indices | | $.63^{\pm}.04$ |
| <u>Group II (N=137)</u> | | |
| High School Indices | | $.59^{\pm}.04$ |
| A.C.E. ---Q-Score | | $.35^{\pm}.05$ |
| A.C.E. ---L-Score | | $.47^{\pm}.05$ |
| A.C.E. ---Total Score | $.36^{\pm}.05$ | $.45^{\pm}.05$ |
| <u>Group III (N=103)</u> | | |
| High School Indices | | $.68^{\pm}.04$ |

For example, in Table III students number "12" and "13" had high school grade indices of 3.00 (Column 2) or, in terms of letter grades, "C" averages. The expected university grade indices were calculated by means of the regression equation and were found to be .60 (Column 3). The chances are then, about 95 in 100 that the university grade indices of these two students will lie within the range of $.60 \pm 1.10$. This range represents approximately one-half of the complete range of university grade indices and would enable one to predict for such students only that their university averages would most probably lie somewhere from an "F" average (0.00) to less than a "B" average (2.00). That the predicted limits extend over such a relatively wide range indicates that individual high school grade indices are not very reliable as a sole basis for the prediction of college grades for the individual.

In Table III are listed the data for the 180 students in Group I, relating to the differences existing between the actual college grade index earned by each individual and the expected index as predicted by means of the high school averages. It may be noted that students numbered "20" and "21" exceeded their predicted college averages by 1.85 and 1.32 grade points respectively, thereby reducing the coefficient of correlation between the two variables for the group as a whole. These two outstanding differences between the expected and the actual indices may possibly be explained, to some extent at least, by the relatively high scores made by these two students on the scholastic aptitude examination - - - 1.69 and .98 sigma distances respectively above the mean for the group. If the examination is valid for this particular group then it would seem that these two students did not achieve the level of academic performances in high school of which

TABLE III

DIFFERENCES BETWEEN ACTUAL UNIVERSITY GRADE INDEX OF EACH STUDENT
AND THE EXPECTED GRADE INDEX AS PREDICTED BY USE OF THE
REGRESSION EQUATION DERIVED FROM DATA BASED ON THE
HIGH SCHOOL INDICES AND THE COLLEGE INDICES

| Student | High School Grade Index | Predicted University Grade Index | Actual Univ. Grade Index | Difference * |
|---------|----------------------------|-------------------------------------|-----------------------------|--------------|
| 1 | 2.47 | .18 | 0.00 | -.18 |
| 2 | 2.69 | .36 | .20 | -.16 |
| 3 | 2.78 | .43 | 1.20 | .77 |
| 4 | 2.88 | .50 | 1.20 | .70 |
| 5 | 2.91 | .53 | .20 | -.33 |
| 6 | 2.92 | .54 | .40 | -.14 |
| 7 | 2.93 | .54 | .00 | -.54 |
| 8 | 2.94 | .55 | .00 | -.55 |
| 9 | 2.94 | .55 | .38 | -.17 |
| 10 | 2.95 | .56 | .00 | -.56 |
| 11 | 2.97 | .58 | .33 | -.25 |
| 12 | 3.00 | .60 | .20 | -.40 |
| 13 | 3.00 | .60 | .20 | -.40 |
| 14 | 3.05 | .64 | .80 | .16 |
| 15 | 3.06 | .64 | .44 | -.20 |
| 16 | 3.07 | .65 | .60 | -.05 |
| 17 | 3.09 | .67 | .60 | -.07 |
| 18 | 3.10 | .68 | .20 | -.48 |
| 19 | 3.10 | .68 | 1.40 | .72 |
| 20 | 3.11 | .68 | 2.53 | 1.85 |
| 21 | 3.11 | .68 | 2.00 | 1.32 |
| 22 | 3.12 | .69 | 1.60 | .91 |
| 23 | 3.13 | .70 | .40 | -.30 |
| 24 | 3.13 | .70 | .40 | -.30 |
| 25 | 3.15 | .71 | .20 | -.51 |
| 26 | 3.15 | .71 | 1.60 | .89 |
| 27 | 3.15 | .71 | .00 | -.71 |
| 28 | 3.15 | .71 | 1.00 | .29 |
| 29 | 3.17 | .73 | .20 | -.53 |
| 30 | 3.17 | .73 | .60 | -.13 |
| 31 | 3.18 | .74 | 1.20 | .46 |
| 32 | 3.20 | .75 | .56 | -.19 |

* Plus signs indicate that the difference is in favor of the university grade index actually attained; minus signs that the predicted exceeds the actual.

| Student | High School Grade Index | Predicted University Grade Index | Actual Univ. Grade Index | Difference |
|---------|----------------------------|-------------------------------------|-----------------------------|------------|
| 33 | 3.22 | .77 | .80 | .03 |
| 34 | 3.22 | .77 | .81 | .04 |
| 35 | 3.23 | .78 | 1.29 | .51 |
| 36 | 3.24 | .79 | .33 | -.46 |
| 37 | 3.25 | .79 | 1.20 | .41 |
| 38 | 3.25 | .79 | .00 | -.79 |
| 39 | 3.25 | .79 | .00 | -.79 |
| 40 | 3.25 | .79 | 1.13 | .34 |
| 41 | 3.25 | .79 | .50 | -.29 |
| 42 | 3.26 | .80 | .79 | -.01 |
| 43 | 3.26 | .80 | .86 | .06 |
| 44 | 3.27 | .80 | 1.33 | .53 |
| 45 | 3.29 | .82 | 1.20 | .38 |
| 46 | 3.30 | .83 | .50 | -.33 |
| 47 | 3.33 | .86 | .80 | -.06 |
| 48 | 3.35 | .87 | .62 | -.25 |
| 49 | 3.36 | .88 | 1.40 | .52 |
| 50 | 3.37 | .89 | .80 | -.09 |
| 51 | 3.37 | .89 | .80 | -.09 |
| 52 | 3.37 | .89 | .60 | -.29 |
| 53 | 3.38 | .89 | .60 | -.29 |
| 54 | 3.40 | .91 | 1.21 | .30 |
| 55 | 3.41 | .92 | .79 | -.13 |
| 56 | 3.45 | .95 | 1.50 | .55 |
| 57 | 3.45 | .95 | 1.50 | .55 |
| 58 | 3.45 | .95 | 1.80 | .85 |
| 59 | 3.45 | .95 | .40 | -.55 |
| 60 | 3.47 | .96 | .80 | -.16 |
| 61 | 3.47 | .96 | 1.38 | .42 |
| 62 | 3.47 | .96 | .40 | -.56 |
| 63 | 3.48 | .97 | 1.94 | .97 |
| 64 | 3.50 | .99 | 1.19 | .20 |
| 65 | 3.50 | .99 | .60 | -.39 |
| 66 | 3.54 | 1.02 | .20 | -.82 |
| 67 | 3.61 | 1.07 | .93 | -.14 |
| 68 | 3.62 | 1.08 | 1.40 | .32 |
| 69 | 3.65 | 1.10 | 1.50 | .40 |
| 70 | 3.65 | 1.10 | 1.13 | .03 |
| 71 | 3.66 | 1.11 | .60 | -.51 |
| 72 | 3.69 | 1.14 | 1.00 | -.14 |
| 73 | 3.72 | 1.16 | .00 | -1.16 |
| 74 | 3.72 | 1.16 | .80 | -.36 |
| 75 | 3.72 | 1.16 | .75 | -.41 |
| 76 | 3.73 | 1.17 | .87 | -.30 |

| Student | High School Grade Index | Predicted University Grade Index | Actual Univ. Grade Index | Difference |
|---------|----------------------------|-------------------------------------|-----------------------------|------------|
| 77 | 3.76 | 1.19 | 1.00 | -.19 |
| 78 | 3.78 | 1.21 | .80 | -.41 |
| 79 | 3.78 | 1.21 | 1.60 | .39 |
| 80 | 3.79 | 1.21 | 1.60 | .39 |
| 81 | 3.79 | 1.21 | 1.80 | .59 |
| 82 | 3.80 | 1.22 | .40 | -.82 |
| 83 | 3.81 | 1.23 | .20 | -1.03 |
| 84 | 3.81 | 1.23 | 2.80 | 1.57 |
| 85 | 3.82 | 1.24 | 1.29 | .05 |
| 86 | 3.83 | 1.25 | .60 | -.65 |
| 87 | 3.84 | 1.25 | 1.50 | .25 |
| 88 | 3.84 | 1.25 | 2.20 | .95 |
| 89 | 3.85 | 1.26 | .00 | -1.26 |
| 90 | 3.88 | 1.28 | 1.80 | .52 |
| 91 | 3.88 | 1.28 | 1.19 | -.09 |
| 92 | 3.92 | 1.32 | 1.00 | -.32 |
| 93 | 3.93 | 1.32 | 1.20 | -.12 |
| 94 | 3.97 | 1.35 | .60 | -.75 |
| 95 | 3.97 | 1.35 | 1.43 | .08 |
| 96 | 4.00 | 1.38 | .80 | -.58 |
| 97 | 4.00 | 1.38 | .40 | -.98 |
| 98 | 4.00 | 1.38 | .60 | -.78 |
| 99 | 4.03 | 1.40 | .91 | -.49 |
| 100 | 4.03 | 1.40 | 1.00 | -.40 |
| 101 | 4.06 | 1.42 | 1.40 | -.02 |
| 102 | 4.06 | 1.42 | .60 | -.82 |
| 103 | 4.06 | 1.42 | .80 | -.62 |
| 104 | 4.08 | 1.44 | 1.50 | .06 |
| 105 | 4.13 | 1.48 | 1.36 | -.12 |
| 106 | 4.16 | 1.50 | .80 | -.70 |
| 107 | 4.17 | 1.51 | 1.40 | -.11 |
| 108 | 4.17 | 1.51 | 2.00 | .49 |
| 109 | 4.18 | 1.52 | .20 | -1.32 |
| 110 | 4.18 | 1.52 | 2.00 | .48 |
| 111 | 4.19 | 1.53 | 1.41 | -.12 |
| 112 | 4.20 | 1.53 | 1.64 | .11 |
| 113 | 4.30 | 1.61 | 2.18 | .57 |
| 114 | 4.35 | 1.65 | 2.20 | .55 |
| 115 | 4.35 | 1.65 | 2.00 | .35 |
| 116 | 4.36 | 1.66 | 1.80 | .14 |
| 117 | 4.36 | 1.66 | 1.40 | -.26 |
| 118 | 4.42 | 1.71 | 1.40 | -.31 |
| 119 | 4.42 | 1.71 | 1.20 | -.51 |
| 120 | 4.43 | 1.71 | 2.30 | .59 |

| Student | High School Grade Index | Predicted University Grade Index | Actual Univ. Grade Index | Difference |
|---------|----------------------------|-------------------------------------|-----------------------------|------------|
| 122 | 4.47 | 1.74 | 2.00 | .26 |
| 123 | 4.50 | 1.77 | 2.33 | .56 |
| 124 | 4.53 | 1.79 | 2.60 | .81 |
| 125 | 4.60 | 1.85 | 2.20 | .35 |
| 126 | 4.61 | 1.85 | .80 | -1.05 |
| 127 | 4.67 | 1.90 | 2.40 | .50 |
| 128 | 4.68 | 1.91 | 1.20 | -.71 |
| 129 | 4.68 | 1.91 | 1.36 | -.55 |
| 130 | 4.72 | 1.94 | .80 | -1.14 |
| 131 | 4.74 | 1.96 | 1.80 | -.16 |
| 132 | 4.82 | 2.02 | 2.00 | -.02 |
| 133 | 4.84 | 2.03 | 2.81 | .78 |
| 134 | 4.89 | 2.07 | 2.80 | .73 |
| 135 | 4.95 | 2.12 | 2.00 | -.12 |
| 136 | 4.97 | 2.13 | 2.60 | .47 |
| 137 | 5.00 | 2.16 | 2.20 | .04 |
| 138* | 2.20 | -.03 | .20 | .23 |
| 139 | 2.27 | .03 | .20 | .17 |
| 140 | 2.47 | .18 | .40 | .22 |
| 141 | 2.59 | .28 | .75 | .47 |
| 142 | 2.68 | .35 | .20 | -.15 |
| 143 | 2.76 | .41 | .40 | -.01 |
| 144 | 2.85 | .48 | .80 | .32 |
| 145 | 2.89 | .51 | .20 | -.31 |
| 146 | 2.96 | .57 | 1.40 | .83 |
| 147 | 3.00 | .60 | .20 | -.40 |
| 148 | 3.08 | .66 | 1.40 | .74 |
| 149 | 3.09 | .67 | .25 | -.42 |
| 150 | 3.11 | .68 | .20 | -.48 |
| 151 | 3.13 | .70 | .00 | -.70 |
| 152 | 3.13 | .70 | .00 | -.70 |
| 153 | 3.13 | .70 | .00 | -.70 |
| 154 | 3.15 | .71 | .94 | .23 |
| 155 | 3.16 | .72 | .00 | -.72 |
| 156 | 3.26 | .80 | .00 | -.80 |
| 157 | 3.26 | .80 | .93 | .13 |
| 158 | 3.27 | .81 | 1.77 | .96 |
| 159 | 3.34 | .86 | .20 | -.66 |
| 160 | 3.37 | .87 | .25 | -.62 |
| 161 | 3.37 | .89 | .00 | -.89 |

* Cases 138-180 were those for whom no scores on the A. C. E. were available.

| Student | High School Grade Index | Predicted University Grade Index | Actual Univ. Grade Index | Difference |
|---------|----------------------------|-------------------------------------|-----------------------------|------------|
| 162 | 3.41 | .92 | 1.44 | .52 |
| 163 | 3.42 | .93 | 1.20 | .27 |
| 164 | 3.46 | .96 | .82 | -.14 |
| 165 | 3.50 | .99 | .50 | -.49 |
| 166 | 3.53 | 1.01 | 1.13 | .12 |
| 167 | 3.58 | 1.05 | 1.75 | .70 |
| 168 | 3.67 | 1.12 | 1.29 | .17 |
| 169 | 3.74 | 1.18 | 1.57 | .39 |
| 170 | 3.79 | 1.21 | 1.25 | .04 |
| 171 | 3.83 | 1.25 | 2.00 | .75 |
| 172 | 3.85 | 1.26 | 1.60 | .34 |
| 173 | 4.00 | 1.38 | 2.40 | 1.02 |
| 174 | 4.03 | 1.40 | 2.00 | .60 |
| 175 | 4.06 | 1.42 | .69 | -.73 |
| 176 | 4.26 | 1.58 | .80 | -.78 |
| 177 | 4.31 | 1.62 | 2.08 | .46 |
| 178 | 4.38 | 1.67 | 2.06 | .39 |
| 179 | 4.54 | 1.80 | 2.00 | .20 |
| 180 | 4.64 | 1.88 | 1.60 | -.28 |

they were capable. One possible explanation for these differences in actual and predicted academic achievement would be that of a lack of motivation to work at capacity in the high school situation.

At the upper range of the high school grade distribution students numbered "109", "126", and "130" failed to attain their expected college indices by more than 1.00 grade points. The scores made by these three students on the scholastic aptitude test were 1.51, .04, and 1.65 sigma distances, respectively, below the mean score for the group as a whole. Thus, in spite of earning a high school grade average of better than "B", they failed to earn at least the equivalent of a "C" average in their university work. Assuming that this examination is valid for this group, the underachievement on the part of student "109" and student "130" in college may possibly be explained in terms of a lack of sufficient academic aptitude for such work. However, the lack of achievement on the part of the third student, who made an average score on the test, could possibly be better explained in terms of factors other than scholastic aptitude.

The high school grade indices of the 137 students in Group II were correlated with the college grade indices and the obtained coefficient of correlation was $.59 \pm .04$. The coefficient of correlation is statistically significant and is indicative of a fair degree of relationship between grades made in high school by these students and their grades in the University. Again it may be said that there is only a fairly strong tendency for those individuals who made the highest grades in high school to be the same students who made the highest college grades.

A coefficient of correlation of $.45 \pm .05$ was obtained when the Psychological Examination total raw scores were correlated with the college

grade indices for Group II. This obtained coefficient is statistically significant, and it may be said that there is a fairly strong tendency for those students, within this group, who made the highest total scores on the A. C. E. to make the highest grades in college; and for those individuals who made the lowest total scores on the A. C. E. to have also the lowest college grades in the first semester of work.

However, for predictive purposes the above correlation of .45 would be considered low as shown by an evaluation of the standard error of a predicted index. The predicted indices were calculated by means of the regression equation, $\bar{X} = 1.66Y - 38.38$, and the obtained standard error of estimate was .65 grade index points. That is, in terms of probability, the chances are only about 68 in 100 that the college grade index can be predicted within .65 points of the true index, and the chances are about 95 in 100 that the college index can be predicted within 1.27 grade points of the true index. The error of prediction is so great that, for an individual making a total score on the A. C. E. corresponding to the mean score for Group II, the chances are about 95 in 100 that his university index will lie within the range: 1.13 ± 1.27 . This range extends from below "D" to less than "A" on the scale of college indices and represents approximately seventy-five per cent of the complete range of university grades. Thus the standard error of a predicted university grade index is so large that individual Psychological Examination scores are not very reliable as a sole basis for the prediction of university grade averages for the individual.

Table IV contains data showing the differences existing between the predicted university grade indices and the actual grade averages earned by

TABLE IV

DIFFERENCES BETWEEN ACTUAL UNIVERSITY GRADE INDEX OF EACH STUDENT
AND THE EXPECTED GRADE INDEX AS PREDICTED BY USE OF THE
REGRESSION EQUATION DERIVED FROM DATA
BASED ON THE A.C.E. TOTAL SCORES AND THE COLLEGE INDICES

| Student | A.C.E. Total Score | Predicted Univ. Grade Index | Actual Univ. Grade Index | Differences |
|---------|-----------------------|--------------------------------|-----------------------------|-------------|
| 1 | 79 | 1.70 | .00 | -1.70 |
| 2 | 33 | .93 | .20 | -.73 |
| 3 | 37 | 1.00 | 1.20 | .20 |
| 4 | 62 | 1.41 | 1.20 | -.21 |
| 5 | 39 | 1.05 | .20 | -.85 |
| 6 | 61 | 1.40 | .40 | -1.00 |
| 7 | 62 | 1.41 | .00 | -1.41 |
| 8 | 51 | 1.23 | .00 | -1.23 |
| 9 | 16 | .65 | .38 | -.27 |
| 10 | 68 | 1.51 | .00 | -1.51 |
| 11 | 61 | 1.40 | .33 | -1.07 |
| 12 | 36 | .98 | .20 | -.78 |
| 13 | 39 | 1.03 | .20 | -.83 |
| 14 | 7 | .50 | .80 | .30 |
| 15 | 47 | 1.16 | .44 | -.72 |
| 16 | 36 | .98 | .60 | -.38 |
| 17 | 26 | .82 | .60 | -.22 |
| 18 | 21 | .73 | .20 | -.53 |
| 19 | 53 | 1.36 | 1.40 | .04 |
| 20 | 78 | 1.68 | 2.53 | .85 |
| 21 | 64 | 1.45 | 2.00 | .55 |
| 22 | 29 | .87 | 1.60 | .73 |
| 23 | 61 | 1.40 | 1.12 | -.23 |
| 24 | 61 | 1.40 | .40 | -1.00 |
| 25 | 39 | 1.03 | .20 | -.83 |
| 26 | 96 | 1.98 | 1.60 | -.38 |
| 27 | 36 | .98 | .00 | -.98 |
| 28 | 35 | .96 | 1.00 | .04 |
| 29 | 25 | .80 | .20 | -.60 |
| 30 | 15 | .63 | .60 | -.03 |
| 31 | 55 | 1.30 | 1.20 | -.10 |
| 32 | 55 | 1.30 | .56 | -.74 |
| 33 | 35 | .96 | .80 | -.16 |
| 34 | 25 | .80 | .81 | .01 |
| 35 | 42 | .91 | 1.29 | .38 |
| 36 | 7 | .50 | .33 | -.17 |
| 37 | 25 | .80 | 1.20 | .40 |

| Student | A.C.E. Total Score | Predicted Univ. Grade Index | Actual Univ. Grade Index | Difference |
|---------|-----------------------|--------------------------------|-----------------------------|------------|
| 38 | 23 | .77 | .00 | -.77 |
| 38 | 32 | .91 | .00 | -.91 |
| 40 | 43 | 1.10 | 1.13 | .03 |
| 41 | 26 | .82 | .50 | -.32 |
| 42 | 38 | 1.01 | .79 | -.22 |
| 43 | 24 | .78 | .86 | .08 |
| 44 | 65 | 1.46 | 1.33 | -.13 |
| 45 | 16 | .65 | 1.20 | .55 |
| 46 | 46 | 1.15 | .50 | -.65 |
| 47 | 34 | .95 | .80 | -.15 |
| 48 | 31 | .90 | .62 | -.28 |
| 49 | 25 | .80 | 1.40 | .60 |
| 50 | 22 | .75 | .80 | .05 |
| 51 | 27 | .83 | .40 | -.43 |
| 52 | 21 | .73 | .60 | -.13 |
| 53 | 31 | .90 | .60 | -.30 |
| 54 | 38 | 1.01 | 1.21 | .20 |
| 55 | 68 | 1.51 | .79 | -.72 |
| 56 | 43 | 1.10 | 1.50 | .40 |
| 57 | 33 | .93 | 1.80 | .87 |
| 58 | 41 | 1.06 | 1.80 | .74 |
| 59 | 23 | .77 | .40 | -.37 |
| 60 | 27 | .83 | .80 | -.03 |
| 61 | 44 | 1.11 | 1.38 | .27 |
| 62 | 10 | .55 | .40 | -.15 |
| 63 | 64 | 1.45 | 1.94 | .49 |
| 64 | 58 | 1.35 | 1.19 | -.16 |
| 65 | 28 | .85 | .60 | -.15 |
| 66 | 23 | .77 | .20 | -.57 |
| 67 | 24 | .78 | .93 | .15 |
| 68 | 72 | 1.58 | 1.40 | -.18 |
| 69 | 34 | .95 | 1.50 | .55 |
| 70 | 78 | 1.68 | 1.13 | -.55 |
| 71 | 36 | .98 | .60 | -.38 |
| 72 | 27 | .83 | 1.00 | .17 |
| 73 | 40 | 1.05 | .00 | -1.05 |
| 74 | 35 | .96 | .80 | -.16 |
| 75 | 28 | .85 | .75 | -.10 |
| 76 | 45 | 1.13 | .87 | -.26 |
| 77 | 23 | .77 | 1.00 | .23 |
| 78 | 36 | .98 | .80 | -.18 |
| 79 | 20 | .72 | .80 | .08 |
| 80 | 43 | 1.10 | 1.60 | .50 |
| 81 | 44 | 1.11 | 1.80 | .69 |
| 82 | 42 | 1.08 | .40 | -.68 |

| Student | A.C.E. Total Score | Predicted Univ. Grade Index | Actual Univ. Grade Index | Difference |
|---------|-----------------------|--------------------------------|-----------------------------|------------|
| 83 | 42 | 1.08 | .20 | -.88 |
| 84 | 34 | .95 | 2.80 | 1.85 |
| 85 | 40 | 1.05 | 1.29 | .24 |
| 86 | 34 | .95 | .60 | -.35 |
| 87 | 69 | 1.53 | 1.50 | .03 |
| 88 | 47 | 1.16 | 2.20 | 1.04 |
| 89 | 26 | .82 | .00 | -.82 |
| 90 | 50 | 1.21 | 1.80 | .59 |
| 91 | 24 | .78 | 1.19 | .41 |
| 92 | 63 | 1.43 | 1.00 | -.43 |
| 93 | 34 | .95 | 1.20 | .25 |
| 94 | 32 | .91 | .60 | -.31 |
| 95 | 72 | 1.58 | 1.43 | -.15 |
| 96 | 33 | .93 | .80 | -.13 |
| 97 | 46 | 1.15 | .40 | -.75 |
| 98 | 20 | .72 | .60 | -.12 |
| 99 | 49 | 1.20 | .91 | -.29 |
| 100 | 63 | 1.43 | 1.00 | -.43 |
| 101 | 94 | 1.94 | 1.40 | -.54 |
| 102 | 47 | 1.16 | .60 | -.56 |
| 103 | 55 | 1.30 | .80 | -.50 |
| 104 | 73 | 1.60 | 1.50 | -.10 |
| 105 | 53 | 1.26 | 1.36 | .10 |
| 106 | 42 | 1.08 | .80 | -.28 |
| 107 | 44 | 1.11 | 1.40 | .29 |
| 108 | 52 | 1.25 | 2.00 | .75 |
| 109 | 18 | .68 | .20 | -.48 |
| 110 | 47 | 1.16 | 2.00 | .84 |
| 111 | 32 | .91 | 1.41 | .50 |
| 112 | 46 | 1.15 | 1.64 | .49 |
| 113 | 79 | 1.70 | 2.18 | .48 |
| 114 | 33 | .93 | 2.20 | 1.27 |
| 115 | 43 | 1.10 | 2.00 | .90 |
| 116 | 25 | .80 | 1.80 | 1.00 |
| 117 | 65 | 1.46 | 1.40 | -.06 |
| 118 | 69 | 1.53 | 1.40 | -.13 |
| 119 | 36 | .98 | 1.20 | .22 |
| 120 | 82 | 1.74 | 2.30 | .56 |
| 121 | 40 | 1.05 | 2.60 | 1.55 |
| 122 | 77 | 1.66 | 2.00 | .34 |
| 123 | 48 | 1.18 | 2.33 | 1.55 |
| 124 | 52 | 1.25 | 2.60 | 1.35 |
| 125 | 75 | 1.63 | 2.20 | .57 |
| 126 | 47 | 1.16 | .80 | -.36 |

| Student | A.C.E. Total Score | Predicted Univ. Grade Index | Actual Univ. Grade Univ. | Difference |
|---------|-----------------------|--------------------------------|-----------------------------|------------|
| 127 | 89 | 1.86 | 2.40 | .54 |
| 128 | 58 | 1.25 | 1.20 | -.15 |
| 129 | 68 | 1.35 | 1.20 | -.15 |
| 130 | 35 | .96 | .80 | -.16 |
| 131 | 46 | 1.15 | 1.80 | .85 |
| 132 | 66 | 1.48 | 2.00 | .52 |
| 133 | 69 | 1.53 | 2.81 | 1.28 |
| 134 | 64 | 1.45 | 2.80 | 1.35 |
| 135 | 91 | 1.89 | 2.00 | .11 |
| 136 | 82 | 1.74 | 2.60 | .86 |
| 137 | 84 | 1.78 | 2.20 | .42 |

the 137 students in Group II. Again, for some students the difference between actual and predicted university indices is great.

The Psychological Examination total scores were correlated with the high school grade indices and the obtained coefficient of correlation was $.36 \pm .05$. This coefficient is low but statistically significant, and it may be said that there is only a slight tendency for those students who made the highest high school grades also to make the highest total score on the Psychological Examination, and for those students who earned the lowest high school averages to score the lowest on the examination. This relatively low coefficient may indicate that high school indices and A.C.E. test scores in combination would provide a more reliable basis for prediction than does either when used alone.

For the students in Group II, there seems to be less positive correlation between their performances in high school and their college grades and aptitude test scores. One possible explanation for this difference in relationship between scholastic aptitude test scores and the two respective academic levels is that success in college work is more dependent upon the factors measured by the test than is the case for success in high school work.

The quantitative scores of this group of students were then correlated with their college grade averages and the obtained coefficient was $.35 \pm .05$. This obtained coefficient of correlation is the lowest of those calculated for this group between the four variables and college performance, but it is also statistically significant. It is lower than that obtained between the Linguistic Scores and college grades, which was $.47 \pm .05$. The

difference in value of these two coefficients may mean that college success is somewhat more closely related to performance on the linguistic section of the psychological examination than it is to performance on the quantitative section. However, this closer degree of relationship may possibly be explained by the fact that a majority of the university courses taken by the students included in this study were in English and social sciences rather than in mathematics and the natural sciences. In fact, every student had a grade in an English course.

The high school grade indices of the 103 graduates of Houston high schools were correlated with their college grades and the obtained coefficient was $.68 \pm .04$. This coefficient of correlation is statistically significant and is indicative of a fairly strong tendency for Houston high school graduates with the highest high school averages to be those with the highest college averages, and for those with the lowest high school indices to have the lowest college grades. This coefficient was slightly higher than that obtained for Group I, of which Group III was the major sub-group, and this slightly larger degree of positive relationship may indicate that factors necessary for college success are also more necessary for high school progress in the Houston schools than in the other school systems from which students had come.

CHAPTER IV

SUMMARY AND CONCLUSIONS

I. SUMMARY

The general purpose of this investigation was to evaluate high school grade indices and American Council on Education Psychological Examination scores as means of predicting success or failure for Negro freshmen in their first semester of work at the Texas State University for Negroes. A total sample of 180 freshmen was gathered and two smaller samples derived from the original group. Data were collected for each student and coefficients of correlation computed between the variables in an effort to determine the relationship between any two of them. The high school grade indices and the Psychological Examination total scores were compared for relative value in predicting academic success in the University.

II. CONCLUSIONS

The following conclusions are based on the findings of this study:

1. Neither the high school grade indices nor the scholastic aptitude test scores were very reliable as predictive measures of individual grade averages of those students included in the study at the Texas State University for Negroes. Both may be useful, however, in predicting the performance of the group as a whole.

2. The obtained coefficients of correlation indicated that, for the same group of students, the high school grade index was more closely

related to the college index than were the scholastic examination scores, though the difference was not great.

3. The scores on the linguistic section of the Psychological Examination were more closely related to college grade indices than either the total scores or the quantitative scores. This closer degree of relationship may possibly be explained by the fact that a majority of the university courses taken by the students included in this study, were in English and social sciences rather than in mathematics and the natural sciences.

4. College grade indices had a higher degree of correlation with the Psychological Examination total scores than did the high school grade indices for the same group. This would seem to indicate that the scholastic aptitude examination perhaps measures more of those factors necessary for academic success in college than are necessary for success on the high school level.

5. There was a slightly higher correlation between high school grades earned by large city school system graduates and their college grades than was the case for high school graduates regardless of size of school system.

6. Though the mean score obtained by this group of Negro college students on the Psychological Examination was considerably lower than the mean for entering college freshmen throughout the country, the obtained coefficients of correlation for the group under investigation were such as to warrant the conclusion that the examination is of some value for predicting college grades for Negro students. Other studies have shown that the test may be used for this purpose on the white population.

III. RECOMMENDATIONS

On the basis of the findings in this study the investigator believes that certain recommendations are warranted. The first of these pertains to the student guidance program at the Texas State University for Negroes. It would seem that the high school records and the Psychological Examination Score of the entering freshmen might best be used as two components of a general predictive criterion. Other components of this criterion might well include measures of achievement in the subject matter fields of English, mathematics, social science, and natural sciences. Measures of reading ability and study habits might also provide information of value to the student counselor. The degree of relationship between these measures and academic success in that University would have to be determined by future studies involving freshmen entering that institution.

Secondly, it is recommended that investigations be initiated to determine the relationship between the factors of (1) college English grades and Psychological Examination linguistic section scores; (2) college mathematics grades and quantitative scores on that examination; and (3) high school grades in the areas of English and mathematics and the corresponding areas in college. Such investigations should prove valuable in student guidance in these subject matter fields.

The third recommendation concerns the problem of differences in test scores of racial groups. Although much work has been done in this area, particularly in the field of intelligence testing, investigations are

needed to determine the causes of such differences. For example, as was the case in this study, Negroes tend to score lower, as a group, on such measures of scholastic aptitude as the American Council on Education Psychological Examination than do white groups.

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