AN ANALYSIS OF CERTAIN PERSONALITY FACTORS AND ACADEMIC SUCCESS IN THE STATE UNIVERSITY COLLEGE, GENESEO, NEW YORK

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ABSTRACT

AN ANALYSIS OF CERTAIN PERSONALITY FACTORS AND ACADEMIC SUCCESS IN THE STATE UNIVERSITY COLLEGE, GENESEO, NEW YORK

by Roy Edward McTarnaghan

THE PROBLEM. It was the primary purpose of this study to investigate the relationship of two personality scales to academic success among freshmen at the State University College, Geneseo, New York. The two scales used were: The Rokeach Dogmatism Scale and the Index of Adjustment and Values developed by Robert Bills.

Academic pre-admissions data such as high school average, and entrance examination scores have been used to predict college achievement with general success, However, the variation of individuals from expected patterns of achievement has been often linked to personality factors and adjustment to the new environment.

In this study it was hypothesized that adjustment to the initial collegiate experience would be influenced to a significant degree by the factors of an individual's self-perception, his perception of others and his dogmatic set toward problems of values.

<u>METHODOLOGY</u>. The Geneseo State freshman class during the 1960-61 academic year was used to build a predicted college average. The individual predictors were high school average, School and College Abilities Test scores, and Cooperative English Test scores. The criterion measure was obtained college average.

From the data collected for the 1960-61 freshmen, predicted averages were computed for all entering freshmen to Geneseo State in September 1961. 2

During the fall semester 1961, the two personality scales of dogmatism and perception were administered to all freshmen. The scales were identified as a "Freshman Questionnaire," with no implication of threat to the respondents. After these test results were analyzed, they were combined with the pre-admissions factors of high school average and entrance examination scores in order that analyses could be made to evaluate predictive characteristics of the personality factors under consideration as well as shed light upon the variation between predicted and achieved grades in college.

The statistical methods used to test the experimental null hypotheses were the F-test, to examine the significance of individual predictors in a multiple regression equation, and the X^2 test, to examine the significance of discrepancy between expected college averages and observed college averages. Because this study was considered exploratory in nature, the null hypotheses were all tested at the .05 level of significance.

RESULTS.

1- Intercorrelations among all factors indicated that high school average was the best single predictor of academic success in college with a correlation of +.575. When the entrance examination scores were also included, the multiple correlation rose to +.61.

2- Individually, the personality traits of dogmatism and perception did not correlate highly with either the academic predictors or obtained grades in college when analyzed by raw score.

3- In testing the significance of individual predictors relating to obtained average in college, <u>high school average</u>, <u>Cooperative English Test scores</u>, <u>School and College Abilities Test scores</u> and <u>Perceptual Category</u> all were significant beyond the five percent level of confidence. 3

4- Those students identified as (-) in perceptual traits significantly fall below predicted college average.

5- Those students who were both self-accepting and low in dogmatism significantly exceeded predicted college average.

CONCLUSIONS.

1- Perceptual traits, as measured by the Index of Adjustment and Values,
do aid in the prediction of academic success among freshmen at the
State University College, Geneseo, New York.

2- When subgroups of the freshman population were separated by personality traits, statistically significant variations were observed between predicted and obtained college average.

3- Students identified as likely to fall below expected college achievement can become candidates for counseling services at the college in order that they can make as satisfactory an adjustment as possible to their new experiences.

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By

Roy Edward McTarnaghan

A THESIS

Submitted to Michigan State University in partial fulfillment of the requirements for the degree of

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> The writer is indebted to many individuals whose encouragement and cooperation with this study has made its completion become a reality.

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TABLE OF CONTENTS

CHAPTER	Page
I. INTRODUCTION	1
The Problem	1
Statement of the Problem	1
Purpose of the Study	2
Importance of the Study	3
Rationale of the Study	3
Definition of Terms	4
$Population \ldots \ldots$	4
Pre-Admissions Data	4
Rokeach Dogmatism Scale	4
Index of Adjustment and Values	4
Predicted College Average	5
Basic Hypotheses to Be Tested	5
Organization of the Remainder of the Thesis	6
II. REVIEW OF THE LITERATURE	7
Introduction \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots	7
Academic Factors and Success in College	8
Personality Factors and College Success	12
Personality Factors Tending to Influence Adjust-	
ment to College	18
III. METHODS OF PROCEDURE	25
Descriptions of the Instruments UsedIncluding	
Reliability and Validity	25
Rokeach Dogmatism Scale	25
Index of Adjustment and Values	27
Selecting the Groups for the Study	28
Collection of the Data	29
Treatment of the Data	30

TABLE OF CONTENTS - Continued

CHAPTER	Page
IV. ANALYSIS OF THE DATA	34
Constructing a Predicted College Average	34
Predictability of Personality Characteristics	. 36
Analysis of Prediction Equations When Separate	
Characteristics are Identified	42
Analysis of Differences Between Predicted and	
Achieved College Grades	45
Summary of Tests of Hypotheses	53
V. SUMMARY AND CONCLUSIONS	56
Summary	56
Conclusions	60
BIBLIOGRAPHY	62
APPENDICES	70

LIST OF TABLES

TABLE		Page
I.	Relationships Between Dogmatism and Academic PerformanceMichigan State University	17
ш.	Pre-Admissions Data and Obtained College Average for Geneseo State Freshmen During the 1960-1961 Academic Year	35
111.	Intercorrelations Among Pre-Admissions Data and Obtained College Average for Geneseo State Fresh- men During the 1960-1961 Year	35
IV.	Means and Standard Deviations for the Geneseo State Freshmen During the 1961-1962 Academic Year, Consisting of Pre-Admissions Data, Obtained College Average and Personality Scales	37
v.	Intercorrelations Among Pre-Admissions Data and Test Data for Geneseo State Freshmen During the 1961-1962 Academic Year	38
VI.	Multiple Regression Analysis Involving Personality Factors and Academic Factors for the Geneseo State Freshmen During the 1961-1962 Academic Year	39
VII.	Multiple Regression Analysis for Those Geneseo State Freshmen During 1961-1962 Who Scored in the Upper Quartile on the Rokeach Dogmatism Scale	43
VIII.	Multiple Regression Analysis for Those Geneseo State Freshmen During 1961-1962 Who Scored in the Lower Quartile on the Rokeach Dogmatism Scale	43
IX.	Multiple Regression Analysis for Those Geneseo State Freshmen During 1961-1962 Who Were Identified As (++)in Perceptual Characteristics	44

TABLE	1	Page
х.	Multiple Regression Analysis for Those Geneseo State Freshmen During 1961-1962 Who Were Identified as (+-) in Perceptual Characteristics	44
XI.	Chi Square Test of Discrepancy of the Number of Students Achieving Above or Below Predicted Average Related to(++)in Perceptual Characteristics	46
XII.	Chi Square Test of Discrepancy of the Number of Students Achieving Above or Below Predicted Average Related to (+-) in Perceptual Characteristics	46
хш.	Chi Square Test of Discrepancy of the Number of Students Achieving Above or Below Predicted Average Related to (-+) in Perceptual Characteristics	47
XIV.	Chi Square Test of Significance of Discrepancy of the Number of Students Achieving Above or Below Pre- dicted Average Related to()in Perceptual Character- istics	47
xv.	Chi Square Test of Significance of Discrepancy of the Number of Students Achieving Above or Below Pre- dicted Average Related to Self-Acceptance and High in Dogmatism.	48
XVI.	Chi Square Test of Significance of Discrepancy of the Number of Students Achieving Above or Below Pre- dicted Average Related to Self-Acceptance and Low in Dogmatism.	49
XVII.	Chi Square Test of Significance of Discrepancy of the Number of Students Achieving Above or Below Pre- dicted Average Related to Self-Rejection and Low in Dogmatism	49
хүш.	Chi Square Test of Significance of Discrepancy of the Number of Students Achieving Above or Below Pre- dicted Average Related to Self-Rejection and High in Dogmatism	50

TABLE		Page
XIX.	Chi Square Test of Significance of Discrepancy of the Number of Students Achieving Above or Below Pre- dicted Average Related to High Scorers in Dogmatism.	51
XX.	Chi Square Test of Significance of Discrepancy of the Number of Students Achieving Above or Below Pre- dicted Average Related to Low Scorers in Dogmatism.	51
XXI.	Chi Square Test of Significance of Discrepancy of the Number of Students Achieving Above or Below Pre- dicted Average Related to Self-Acceptance, Whose Predicted Average Was Below 2.0	52
XXII.	Chi Square Test of Significance of Discrepancy of the Number of Students Achieving Above or Below Pre- dicted Average Related to Self-Rejection, Whose Predicted Average Was Below 2.0	53
	Frencieu Average was Delow 6.0	55

LIST OF APPENDICES

APPENDIX	Page
A. Freshman Questionnaire	71
B. Personal Characteristics Check-List	75
Characteristics of Others Check-List	79

CHAPTER I

INTRODUCTION

The principal purpose of this investigation is to determine what relationship can be found between certain aspects of a student's personality and his academic success during the first year in college. It is during the first year in college that the attrition rate is at its highest even in those institutions where all admitted students have the potential to do very successful college work. At the college under consideration in this investigation, the State University College, Geneseo, New York, twenty-five percent of the enrolled freshmen do not return for the second year. Of this number, approximately ten percent are dismissed for academic reasons. These are all students for whom scholastic success was predicted at least at a "C" level when they were admitted as freshmen. Certainly, there are many factors other than scholastic ability which contribute toward academic success. This study is an attempt to explore some of those factors.

I. THE PROBLEM

Statement of the problem. Because of the rapid rise in numbers of students aspiring toward a college education, coupled with the relatively slow rate of growth of State Colleges and Universities within New York State, admission officers in that State have been striving to find some equitable process of selecting from among large numbers of applicants those students in whom the best prediction of academic success seems evident.

Prediction of college success based on a weighting of academic variables (high school average, I.Q., rank in class, test scores, etc.), is perhaps one of the best present day methods.^{1,2} Although this method is good for group data, a great deal is to be desired in discriminatory powers of prediction for those individual students on a "borderline" admissions category.

From time to time, non-cognitive factors, including personality characteristics, have been used to help understand some areas of college achievement. The California Psychological Inventory,³ the Rorschach,⁴ the Strong Vocational Interest Blank,⁵ the F Scale of authoritarianism,⁶ and some other variables have been used with some success in examining this area.

<u>Purpose of the study</u>. It was the purpose of this study to investigate the relationship of two personality scales--the Rokeach Dogmatism Scale,⁷

³John Holland, "The Prediction of College Grades from the California Psychological Inventory and Scholastic Aptitude Test," Journal of Educational Psychology, August 1959, pp. 135-42.

⁴Ralph M. Rust and F. J. Ryan, "The Relationship of Some Rorschach Variables to Academic Behavior," <u>Journal of Personality</u>, Vol. 2, No. 4, June 1953, pp. 441-56.

⁵Ralph M. Rust and F. J. Ryan, "The Strong Vocational Interest Blank and College Achievement," <u>Journal of Applied Psychology</u>, Vol. 3, No. 5, 1954, pp. 341-5.

⁶Ann F. Neel, "The Relationship of Authoritarian Personality to Learning; F. Scale Scores Compared to Classroom Performance," Journal of Educational Psychology, October 1959, pp. 195-199.

⁷Milton Rokeach, <u>The Open and Closed Mind</u>, New York, Basic Books, 1960.

¹J. Spencer Carlson and Victor Milstein, "The Relation of Certain Aspects of High School Performance to Academic Success in College," College and University, 33:185-192, No. 2, Winter 1958.

²H. F. Garrett, "General Review of Factors Influencing College Grades," Journal of Experimental Education, 18:91-138, 1949.

and the Index of Adjustment and Values developed by Robert Bills⁸-with academic success among freshmen during the 1961-62 school year at the State University College, Geneseo, New York. It was hoped that these personality scales would aid in predicting collegiate success as well as give indications of which students were likely to deviate most from expected academic achievement.

Importance of the study. Studies of academic predictors for college success have been under way for years. High school average, rank in class and aptitude tests have usually proven to "weight" the best in predictability. Although the intercorrelations among these data are at a fairly high level, and an individual variable shows considerable weight in predicting obtained college average, a combination of these variables does not generally increase overall predictability to a significant degree. The reason for the high intercorrelations and the corresponding <u>slight</u> increase in predictability, is because the measures have much in common. They tend to measure along the same dimension. That is, high school average and entrance examination scores are both measures of academic ability and may both give the same kind of information.

It may well be that certain personality characteristics, because they are measuring a different dimension than academic potential, will aid in the predictive process as well as shed some light on the variability between predicted and achieved grades in college.

Rationale of the study. The following three statements are theoretical assumptions upon which the hypotheses in this study are based.

1. Affective or non-cognitive variables influence academic behavior and achievement as well as cognitive variables.

⁸Robert E. Bills, <u>Index of Adjustment and Values--Manual</u> Adult and High School Senior Form, Auburn, Alabama Polytechnic Institute, (Unpublished).

- 2. Perceptual theory holds that behavior can be modified by concept of self and concept of others.
- 3. Authoritarian or dogmatic personality characteristics influence achievement in college.

II. DEFINITION OF TERMS

<u>Population</u>. The Geneseo State graduating class of 1964 served as the "study sample." For this group, a predicted college average, based on a weighting of academic variables, was computed using the obtained grade point average after one semester. These predictions were then applied to the Geneseo State class of 1965 which served as the "check sample." The class of 1965 was then used exclusively during the study. In each sample, only high school graduates coming directly into college were used, eliminating transfer students and older students. The number of cases used in the Geneseo State class of 1965 was 466.

<u>Pre-admissions data</u>. For each student in the study a high school average (consisting of mathematics, science, English, social studies and language) was computed. Also, scores on the Cooperative English Test (Form T) and the School and College Abilities Test were used.

<u>Rokeach Dogmatism Scale</u>. This scale is a measure of general authoritarianism which does not attempt to tie in ethnocentrism or political conservatism. High scorers are considered dogmatic. There are forty items in this scale.

Index of Adjustment and Values (perceptual characteristics). The "Adult and High School Senior Form" of this scale (49 items) was used. Scores on this scale indicate how a person views himself and how he views other people. An individual is placed in one of four categories as a result of his scores on this test: (++);(-+);or(--). The (++) individual

is one who scores above the mean in terms of self-concept and equal to that or greater in terms of concept of others. The (+-) individual is above the mean in self-concept but scores lower in terms of concept of others. The (- +) individual is below the mean in self-concept and has a concept of others score equal to or greater than the self score. The fourth category, (--), identifies the below the mean self score with a concept of others score lower than the self score.

<u>Predicted college average</u>. For each student in the sample, a predicted average was computed in terms of a college grade point average using the scale C = 2.0. The variables of high school average, entrance examination scores and obtained college average as the criterion were entered in regression to obtain maximum weights for the predictor variables.

III. BASIC HYPOTHESES TO BE TESTED

 Personality variables will contribute significantly to an increase in predictability of academic success in college, based on the scale A = 4.0.

2. Personality characteristics of dogmatism and perception, combined with academic predictors, will be significant predictors in the multiple regression technique using obtained college average as the criterion.

3. Significant differences will be observed in predicting academic success when the population is separated into subgroups representing both high and low scorers in dogmatism and the four perceptual categories as defined.

4. Differences between predicted and achieved college average can be measured by personality characteristics.

These basic hypotheses will be tested as experimental hypotheses in the Analysis of Data in Chapter IV.

IV. ORGANIZATION OF THE REMAINDER OF THE THESIS

Chapter II deals entirely with a review of the literature pertinent to the study. The first section contains a review of important studies during the last thirty years involving academic factors and success in college, while the second section reviews personality factors as they relate to collegiate success. It is hoped that through this review of previous studies in the area of predicting academic success in college, a framework can be established for understanding the relationship of the two personality scales to this particular study.

Chapter III sets forth the methods of procedure for the study. The instruments used are described along with their reliabilities and validities. In this chapter the methodology will be described for selecting the groups for the study. The collection of the data and the treatment of the data are also described.

The analysis of the data is covered in Chapter IV. The basic hypotheses stated in Chapter I are expressed as experimental hypotheses in this chapter and tested for significance at the 5 percent level, since this study is considered exploratory in nature.

Chapter V contains the summary and conclusions. From the preceding chapters, the influences of the two personality scales under study are evaluated. Implications for a longitudinal study involving teaching performance as a criterion measure are discussed. This final chapter summarizes the experimental hypotheses tested and presents suggestions for further study in the area of personality tests.

CHAPTER II

REVIEW OF THE LITERATURE

I. INTRODUCTION

Our society is deeply interested in higher education. The efforts to understand the transition from secondary school to college as well as adjustment to the academic phase of college have come under close examination for a long period of years.

Particularly in this period of the 1960's, the fact of expanded enrollments in the elementary and secondary schools is being brought to attention at all levels of higher education with the admonition that the "crest" will reach college age by 1970. Because the pressures at the doors of the colleges are being felt even now, an increasing awareness on the part of educators has been directed toward the problem of predicting academic success at the college level.

Because there is such a demand for higher education in our society with respect to both job preparation as well as status level, the level of aspiration on the part of high school students toward college increases with each passing year. Just as it is important to encourage deserving and intelligent youngsters into collegiate programs, so is it important to counsel students into areas of study commensurate with their interests and abilities. The effectiveness of predicting success in a college or in a particular program has an important role in the transition period from high school to college.

II. ACADEMIC PREDICTORS AND SUCCESS IN COLLEGE

In 1934, Segel¹ reviewed the findings of twenty-three studies relating high school average to general college performance. The coefficients of correlation ranged from +.29 to +.69, with a median correlation value of +.55.

Fishman² has recently cited fifteen studies which correlate high school average with average freshman grades. These correlations range from +.30 to +.59, with a median value of +.41.

Academic predictors have typically included more than just high school average. Rank in class, aptitude tests, and achievement tests have all been used with regularity in looking at the relationship between high school and college adjustment in the academic area. Garrett³ has indicated, however, that in analyzing research studies in this area over a period of thirty years, high school average has held up as the best single predictor of success at the college level. In his review of the literature, the median r between high school average and general college average is +.56. In descending order, rank in class has a median r of +.55, general achievement test scores +.49, intelligence test scores +.47, general college aptitude test scores +.43 and special aptitude test scores +.41. It is interesting to note that when some of the most promising of these variables are combined using the multiple regression technique, the correlations can generally be raised slightly. In reviewing seven

¹D. Segel, Prediction of Success in College, Bulletin No. 15, U. S. Office of Education, Washington: U. S. Government Printing Office, 1934.

²J. A. Fishman, <u>1957 Supplement to College Board Scores No. 2</u>, New York: College Entrance Examination Board, 1957.

³Harley F. Garrett, "A Review and Interpretation of Investigations of Factors Related to Scholastic Success in Colleges of Arts and Science and Teachers Colleges," Journal of Experimental Education, 18:91-138, December 1949.

studies reported by Garrett using this technique, the median r was +.648 using obtained grade average as the criterion after one semester.

One must constantly be aware of the several generalizations used in reviewing any such studies. What does the term "high school average" mean? Some researchers have included all marks taken in grades 9-12, others only grades 10-12, still others use only specific subjects such as language, mathematics, English, social studies and science. The very definition of what is an average can have a profound effect upon resulting coefficients of correlation with obtained college grades. The level of difficulty of the curriculum program in which the student is enrolled, the degree of competition he faces because homogeneous grouping or the lack of it, all influence this loosely defined "high school average."

In an attempt to compensate for some of this variability, Chauncey and Frederiksen⁴ have described a technique for weighting the scores of college applicants by the particular high school from which they applied. When a large enough group from one high school has completed at least one year of study at a given college, a better prediction can be obtained between that school's graduates and their success in the college program. Such a technique, however, can work only when a college consistently draws a steady flow of students from the same high school. This method has shown itself to be time-consuming and costly.

A study by Travers,⁵ reviewing somewhat more than 200 prediction studies, resulted in the conclusion that the high school grade average is generally a better predictor of college grades than subject matter tests

⁴H. Chauncey and N. Frederiksen, "The Functions of Measurement in Educational Placement," in Lindquist, E. F. (Editor), <u>Educational</u> Measurement, Washington: American Council on Education, 85-116, 1951.

⁵R. M. W. Travers, "Significant Research on the Prediction of Academic Success," in Donohue, W. T., C. H. Coomb and R. M. W. Travers, <u>The Measurement of Student Adjustment and Achievement</u>, Ann Arbor: University of Michigan Press, 1949, 147-190.

or psychological tests. Bloom and Peters⁶ in surveying many of the recent studies have reported that such correlations are relatively low, but stable, and perhaps one of the most promising approaches using available data is adjusting high school grades to reflect the quality of the high school program. This can be accomplished using the techniques set forth in the study by Chauncey and Frederiksen.⁷

As one considers other factors which influence the high school average, Lins and Pitt⁸ have described the influence of the curriculum content in the students' academic background as influencing college performance. Lins has also separated college freshmen by the size of the high school graduating class, and found significant differences in the mean grade point average between students from small high schools and students from large high schools. His study indicates that students from large high schools are likely to perform at a higher level of achievement (in terms of equating students on the basis of the high school average) in college because of a wider range of curriculum offerings and a higher degree of competition in the larger schools.⁹

The experience at the Air Force Academy has been somewhat different. Because the clientele is drawn from such a wide geographical distribution, recent studies have indicated that achievement test scores have held a higher weight than the high school average.¹⁰ This can be

⁶Benjamin Bloom and F. R. Peters, <u>The Use of Academic</u> Prediction Scales, Glencoe, Illinois, The Free Press, 1961.

⁷Chauncey and Frederiksen, op. cit.

⁸L. J. Lins and H. Pitt, "The 'Staying Power' and Rate of Progress of University of Wisconsin Freshmen," <u>College and University</u>, 29: 86-99, 1954.

⁹L. J. Lins, "Pre-University Background and Effect of Various Factors on University Success," <u>Personnel and Guidance Journal</u>, No. 3, 157-158, November 1954.

¹⁰Virgil J. O'Connor, "Selective Admission of Air Force Academy Cadets," College and University, 33:163-171, No. 2, Winter 1958.

understood better when one realizes that the extreme variability in types of high school records from different parts of the country makes any evaluation of grades subject to subjective comparisons between grading systems and types of programs.

During the past two years several studies have been completed within the various colleges of the State University of New York. These have been done as part of an evaluation of the State University Admissions Examination program.¹¹ Of 41 studies done at 12 of the State Colleges, the coefficients of correlation between the School and College Abilities Test and college grade point average ranged from -.09 to +.58, with a median r of +.36. Reviewing the Cooperative English Test (Form T), 43 studies at 13 of the units showed a range between -.09 and +.56, with the median r again at +.36.

There have been 17 studies carried out within the State University of New York in which high school average is correlated with obtained college average.¹² Five colleges involved in these studies have shown a range of correlation coefficients between +. 14 and +.68 with a median r of +.47.

These research studies have indicated, as have others before them, that high school average is the best single predictor of college success. Even so, there has been a very wide range in the correlations, with few ranging higher than +.55.

Multiple correlations using the most promising selection variables and obtained college average as the criterion have been tested for the last ten years at the State University College, Geneseo, New York.¹³

¹¹"Summary of Validity Studies, " Office of Admissions Program, State University of New York, March 5, 1962.

¹²Ibid.

¹³Wilbur H. Wright, "A Validation Study of Selective Admission Examination Procedures," (Unpublished Study), State University of New York, August, 1960.

When failing college students are not used as part of the criterion group, the multiple correlation ranges around +.70.

By eliminating those students from the sample who failed, one's predictive correlation should rise. And yet, this may not be very realistic. A college needs to understand the factors which contribute toward a student's failure as well as those which aid him in academic performance. The level of the correlation has no meaning unless one is able to comprehend the many sub-factors which influenced the analysis of the data.

There has been no shortage of research in the area of academic predictors and success at the college level. High school grades certainly measure performance and entrance examinations certainly measure academic potential. But the fact remains that after many years of experimentation and exhaustive study, it has been very difficult to improve the effectiveness of academic predictors over what they were in the 1930's.

III. PERSONALITY FACTORS AND COLLEGE SUCCESS

Henry Borow has posed the question when he summed up some of the unknown factors connected with success at college. What is the reason for the student to be at college; does he adjust well to academic life; does he have worries about family or finances; is the extracurricular load too heavy; how does he feel about student life? He also observes:

What a candidate for college is intellectually capable of accomplishing is hardly synonomous with what he later actually achieves.¹⁴

¹⁴Henry Borow, "Current Problems in the Prediction of College Performance," <u>American Association of College Registrars</u>, 22:18, October 1946.

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¹⁴Henry Borow, "Current Problems in the Prediction of College Performance," <u>American Association of College Registrars</u>, 22:18, October 1946.

These factors are certainly concerned with the degree of success at college but are difficult to **d**efine and measure. There is an appreciation among college faculty and administration that attitudes, values, and personality characteristics do influence achievement, but no clear-cut understanding has yet been evident.

Stagner¹⁵ has reviewed some of the earlier studies on this subject and has reported that:

- Linear correlations of intelligence, achievement and personality measures are low. Probably the very nature of the relationship accounts for this.
- Extreme personality characteristics tend to counterbalance advantages in aptitude, allowing equal achievement in opposed groups.
- 3. Personality factors have marked influence on the correlation of aptitude and achievement.

In a study conducted at the University of Nebraska, where grades in English and Military Science only were used, the conclusion was reached that there was little significance between grades earned and personality scores.¹⁶ In some situations personality scales used to predict success have run into negative selection factors, where candidates dropping out of teacher training had more desirable characteristics than those who remained.¹⁷

One review of several studies involving personality and academic achievement concluded:

¹⁵Ross Stagner, "The Relation of Personality to Academic Aptitude and Achievement," Journal of Educational Research, 26:648-660, May 1933.

¹⁶W. R. Zalmon, "Relationship of Traits of the Bernreuter Personality Inventory to Academic Success," <u>American Association of</u> College Registrars, 21:81-84, October 1945.

¹⁷John C. Gowan, "Self-Report Tests in the Prediction of Teaching Effectiveness," School Review, 68:409-419, No. 4, Winter 1960.

Attempts to improve prediction by using non-intellective factors, such as interest and personality traits, have yielded quite discouraging results. The principle sources of difficulty appear to lie in the heterogeniety of the criterion and the nonsummative and nonlinear properties of many promising predictors. . . Averaging grades frequently entails averaging uncorrelated values. One behavior pattern such as conformity, may be rewarded in one course and another of independence in a different course.¹⁸

However, other studies have tended to suggest that certain characteristics improve the predication of academic performance. One study suggests that a combination of ability and motivation measures improves the prediction.¹⁹ Morgan found in examining achieving and non-achieving college students of high ability that several variables appeared which related positively to academic achievement . . . maturity and seriousness of interests, awareness of and a concern for other people, a sense of responsibility dominance and self confidence, and the need for achievement. The same study using the MMPI scales noted that more non-achievers than achievers are self-centered and socially insensitive.²⁰

Recently, it has been pointed out that the factor of freedom from neurotic behavior patterns has aided in the predictive process.²¹

Many existing personality scales have been put to the test to observe their relationship to academic success in college. A study by

¹⁹P. Weiss, M. Wertheimer and B. Groesbeck, "Achievement-Motivation, Academic Aptitude and College Grades," <u>Educational and</u> Psychological Measurement, 19 No. 4:665, Winter 1959.

²⁰H. H. Morgan, "A Psychometric Comparison of Achieving and Non-achieving College Students of High Ability," <u>Journal of Consulting</u> Psychology, 16:292-298, 1952.

¹⁸George Middleton and George Guthrie, "Personality Syndromes and Academic Achievement," Journal of Educational Psychology, 50 No. 2:66 April 1959.

²¹W. B. Michael and others, "Factored Dimensions of a Measure of Motivation for College Students," <u>Educational and Psychological Measure-</u> ment, 19 No. 4:667-671, Winter 1959.

Holland²² using the Sixteen Factor Personality Questionnaire, the National Merit Student Survey and the Vocational Preference Inventory, observed from a study of 277 colleges that colleges with different atmospheres reward different kinds of students. Holland also used the California Psychological Inventory and concluded that this instrument has some value in aiding the process of academic prediction.²³ Centi, in experimenting with the Minnesota Multiphasic Personality Inventory concluded that:

. . . personality factors are related to the level of adjustment of college students. $^{\rm 24}$

Rust and Ryan²⁵ have suggested that level of achievement may be better understood in relation to particular interest patterns of the students as measured by the Strong Vocational Interest Blank. The same authors have demonstrated that the Rorschach has value in observing the variance between high school and college performance.²⁶

A study recently completed at Michigan State has indicated a rather consistent pattern of a negative relationship between dogmatism and term

²²John L. Holland, "The Prediction of College Grades From Personality and Aptitude Variables," <u>Journal of Educational Psychology</u>, 51 No. 5:245-254, October 1960.

²³John L. Holland, "The Prediction of College Grades From the California Psychological Inventory and the Scholastic Aptitude Test," Journal of Educational Psychology, 50 No. 4:135-142, August 1959.

²⁴P. Centi, "Personality Factors Related to College Success," Journal of Educational Research, 55:187-8, December 1961.

²⁵Ralph M. Rust and F. J. Ryan, "The Strong Vocational Interest Blank and College Achievement," Journal of Applied Psychology, 3:341-5, No. 5, 1954.

²⁶Ralph M. Rust and F. J. Ryan, "The Relationship of Some Rorschach Variables to Academic Behavior," <u>Journal of Personality</u>, 21:441-56, No. 4, June 1953. end examinations in Natural Science and Communication Skills.²⁷ The results may be observed in Table I. Here the implicit suggestion is that as one becomes more closed minded or dogmatic, the more difficult will be the task of answering questions which have multiple choice answers. The study also suggests that as students become less dogmatic, critical thinking improves. In viewing the question of the relationship between goal setting behavior and over and under-achievers, Mitchell found that the factor of self-acceptance was significantly related.²⁸

These studies all are seeking the relationship between personality variables and academic success in college. It would appear that any such variable has only a remote possibility of being positively correlated at a significant level with academic success. And yet, when various sub-groups are identified within the framework of the particular personality characteristic, the chances are enhanced for observing variability between prediction and achievement. Saunders has observed:

. . . a logical procedure would first require the isolation of the simple psychological functions that may underlie the best prediction; then suppressor effects and their associated testing time could be minimized.²⁹

This kind of a suggestion has further substantiation found in the research of Frederiksen and Melville³⁰ who have demonstrated that by

²⁷Irvin Lehmann, S. Ikenberry and Paul Dressel, <u>Critical Thinking</u>, <u>Attitudes, and Values in Higher Education</u>, (A Preliminary Report), East Lansing, Michigan State University, 1959, pp. 59.

²⁸James V. Mitchell, "Goal Setting Behavior as a Function of Self-Acceptance, Over- and Underachievement, and Related Personality Variables, "Journal of Educational Psychology, 50:92-103, June 1959.

²⁹D. R. Saunders, "Moderator Variables in Prediction," <u>Educational</u> and Psychological Measurement, 16:222, 1956.

³⁰N. Frederiksen, and S. D. Melville, "Differential Predictability in the Use of Test Scores," <u>Educational and Psychological Measurement</u>, 14:647-656, 1954.

Michigan State	lales (N=198)	Winter Spring
formance -	Fen	Fall
ademic Per	202)	· Spring
ism and Ac	Males (N=	ll Winter
en Dogmat		Fal
ships Betwe ty		
Relations Universit		
Table I.		

	Fall 1958	Winter 1959	Spring 1959	Fall 1958	Winter 1959	Spring 1959
Communication Skills						
Instructor grade	07	09	03	07	05	05
Exam grade	23	27	20	20	15	08
Total course	19	22	15	17	13	08
Natural Science						
Instructor grade	17	21	21	05	00	11
Exam grade	16	29	13	14	07	22
Total course	18	28	16	09	04	19
Term G.P.A.	15	22	16	15	05	12

Note: For N=200, a correlation of \pm .14 is significant at the .05 level, of \pm .18 at the .01 level. .01 level.

taking out compulsive subjects the predictions of the other subjects would improve, even though compulsiveness is not correlated with either the predictor or the criterion. One should note here that personality factors may be associated with achievement but not necessarily in a linear or curvilinear relationship. This factor is one which seems to be overlooked all too often in research as such factors are dropped from consideration because no initial linear relationship appears in experimentation.

IV. PERSONALITY FACTORS TENDING TO INFLUENCE ADJUSTMENT TO COLLEGE

In addition to the many studies relating personality characteristics to academic success, there have been numerous studies done which have examined the question of adjustment to college or a new environment. There may well be factors which could aid in the predictive process that have never been examined in such a manner.

Very often the experimental hypothesis used in a research study involving personality characteristics and academic success in college has been stated because it has been felt that adjustment to a new living-learning situation would influence achievement. These factors need consistent exploration.

Webster has pointed out that students do not tend to become more alike as the college years pass, rather, personality tests show increasing complexity and diversity.³¹ Another study involving attitudes and rigidity³² concluded that persons who hold extreme attitudes are more intolerant of ambiguity than those holding less extreme attitudes. One might

³¹Harold Webster, "Changes in Attitudes During College," The Journal of Educational Psychology, 49:109-117, June 1958.

³²L. D. Goodstein, "Intellectual Rigidity and Social Attitudes," Journal of Abnormal and Social Psychology, 48:345-353, 1953. hypothesize here that as the college environment became more ambiguous or filled with alternative choices, the more psychological difficulty a rigid individual may experience. This is the kind of atmosphere which might be perceived by a student just because he is away from the home and family situation for the first time.

Some research has indicated that persons who are authoritarian change their attitudes less frequently than persons who are antiauthoritarian.³³ Similar findings were reported by Schaie using the Test of Behavioral Rigidity.³⁴

Rokeach has shown through research that in distinguishing the difference between dogmatism and rigidity, high and low rigid individuals differ primarily in their ability to think analytically, while open and closed individuals (in terms of dogmatism) differ primarily in their ability to think synthetically.³⁵ This kind of information suggests that such measures may be helpful in understanding college achievement as well as adjustment.

Another study indicated that authoritarian individuals tended to be rejected more often by their peers than non-authoritarians. They were also perceived as being less desirable companions.³⁶ Certainly, here is evidence to suggest further research in the area involving academic success in college.

³³K. R. Hardy, "Determinants of Conformity and Attitude Change," Journal of Abnormal and Social Psychology, 54:289-294, 1957.

³⁴K. Warner Schaie, "Differences in Some Personal Characteristics of Rigid and Flexible Individuals," Journal of Clinical Psychology, 14: 11-14, January 1958.

³⁵Milton Rokeach, <u>The Open and Closed Mind</u>, New York: Basic Books, 1960, p. 194.

³⁶J. R. Frymier, "The Relationship of Authoritarianism to Rejection," <u>Journal of Educational Research</u>, 53 No. 1:33-34, September 1959. One may say that the individual who is defined as having an authoritarian personality is slow to change, if he does so at all, after having organized his perceptions. Subjectively, we would imagine this individual would have difficulty in a new environment, and, research has seemed to indicate that this is true.

As Neel has pointed out:

A person who cannot understand or tolerate others would find it hard to achieve the attitudes of humanitarian instructors. Learning in this area would be complicated by the lack of definitive structure and established fact.³⁷

There must be caution in interpreting any scales of personal adjustment. It has been pointed out by Nelson that:

. . . the expression of attitudes depends upon both situational and personal factors which must be evaluated simultaneously in order to predict individual behavior.³⁸

A further word of caution has been given by Attender, who reminds us that psychological tests should be used on a qualitative rather than a quantitative basis--the values from test scores may mean quite different things depending on the individual concerned.³⁹

Koenig and McKeachie have pointed out that any teaching method is effective only for certain types of students. When one compares teaching methods with group measures, there is a strong possibility that the effects upon different kinds of students will nullify each other.⁴⁰

³⁷Ann Neel, "The Relationship of Authoritarian Personality to Learning: F Scale Scores Combined to Classroom Performance," Journal of Educational Psychology, 50 No. 5:195, October 1959.

³⁸Harry Nelson and others, "Attitudes as Adjustments to Stimulus, Background, and Residual Factors," Journal of Abnormal and Social Psychology, 52:321, May 1956.

³⁹Louise E. Attender, "The Value of Interest, Personality, and Vocational Interest Tests in the Guidance Program," <u>Journal of Edu</u>cational Psychology, 31:449-452, September 1940.

⁴⁰Kathryn Koenig and W. J. McKeachie, "Personality and Independent Study," Journal of Educational Psychology, 50 No. 3:132-134, June 1959.

A further statement of caution has come from Heist:

. . . most inventories and tests were not constructed for the purpose of discriminating among groups of people, especially those classified as normal.⁴¹

Another area of personality characteristics which seem to hold fruitful possibilities for research in adjustment is the area of selfconcept. Robert Bills has described an instrument for measurement of the self-concept as well as concept-of-others.⁴²

In testing this scale in experimental conditions, he has shown that the index scores were to a low degree, related to the level of aspiration. The measure of acceptance of self as shown by this index was significantly related to attitude toward performance.⁴³

Bills has also found that Rorschach signs of depression are related to the discrepancy between the concept of self and the concept of the ideal self⁴⁴ as well as:

. . . distinct Rorschach personality characteristics distinguish subjects who are high in acceptance of self from those who are low in acceptance of self.⁴⁵

Brownfain⁴⁶ has reported that the self-concept measure was a

⁴¹Paul Heist, "Diversity in College Student Characteristics," Journal of Educational Sociology, 33:286, February 1960.

⁴²R. E. Bills, <u>Index of Adjustment and Values--Manual</u>, Adult and High School Senior Form, Auburn: Alabama Polytechnic Institute, (Unpublished).

⁴³R. E. Bills, "A Comparison of Scores on the Index of Adjustment and Values With Behavior in Level of Aspiration Tasks," Journal of Consulting Psychology, 17:206-212, 1953.

⁴⁴R. E. Bills, "Self-Concept and Rorschach Signs of Depression," Journal of Consulting Psychology, 18:135-137, 1954.

⁴⁵R. E. Bills, "Rorschach Characteristics of Persons Scoring High and Low in Acceptance of Self," <u>Journal of Consulting Psychology</u>, 17:38, 1953.

⁴⁶J. J. Brownfain, "Stability of the Self-Concept as a Dimension of **Personality**," Journal of Abnormal and Social Psychology, 47:597-606, 1952.
stable index of adjustment. His studies have correlated well with the Bills measures of high and low self-concept. Omwake has shown that this dimension of self-concept has shown a close relationship on three separate tests, those of Bills, Berger, and Phillips.⁴⁷ The Bills index was also used in experimental studies by Fey to observe the relationship between "self" score and the "other" score.⁴⁸

A recent suggestion has been made by Murphy that research on the "self-concept" had unlimited possibilities and that such measures may be able to examine an individual's variation from an expected pattern of behavior.⁴⁹ Here the implication is clear that we may be able to determine or measure the differences between predicted patterns of adjustment and observed patterns by such an index. It may also follow that differences between predicted and achieved college grade averages can be measured by this index.

Relating these concepts to collegiate programs preparing teachers, some experimental data has shown interesting results. Cook suggests a discrepancy between idealized and observed personality characteristics of teachers.⁵⁰ A study of a similar nature by Ryans concludes:

From the practical standpoint of teacher recruitment and selection this fact that teachers who are high, or low, with respect to one facet of observable teacher behavior tend to be similarly high, or

⁴⁷Katherine T. Omwake, "The Relation Between Acceptance of Self and Acceptance of Others Shown By Three Personality Inventories," Journal of Consulting Psychology, 18:443-446, 1954.

⁴⁸William F. Fey, "Correlates of Certain Subjective Attitudes Toward Self and Others," <u>Journal of Clinical Psychology</u>, 13:44-49, January 1957.

⁴⁹G. Murphy, "New Vistas in Personality Research," <u>Personnel</u> and Guidance Journal, 40:114-22, October 1961.

⁵⁰D. L. Cook and others, "Factor Analysis of Teacher Trainee Responses to Selected Personality Inventories," <u>Educational and Psycho-</u> logical Measurement, 21 No. 4:865-72, Winter 1961.

low, with regard to other aspects of observable classroom behavior is very significant.⁵¹

Because teachers should be well-adjusted in order to deal most effectively in the teaching-learning situation, colleges of education need to be aware of personality characteristics which may suggest difficulty in teaching as well as difficulty in the college learning experience. Symonds⁵² has outlined some of the observable traits which distinguish superior and inferior teachers, and information such as this can be of benefit in evaluating college performance.

From this review of the literature, the evidence points to academic predictors such as high school average, rank in class, and entrance examination scores as being the most reliable measures of future success in a college program. Because of the difficulty of stabilizing high school records from a wide variety of schools, as well as the variable kinds of curricular backgrounds of the students under study, correlation coefficients between high school and college performance seldom exceed +.60.

Understanding this limitation, many colleges still recognize that a correlation coefficient around +.60 is generally a maximum level in predicting collegiate success. The State University College, Geneseo, New York, is no exception.

Evidence gained from tests of adjustment, motivation, and personality, as well as an increasing awareness of perceptual psychology as an area of understanding learning, has led many investigators to hypothesize about personality factors and success in college. Although limited success has been achieved in experimental studies of this kind,

⁵¹D. G. Ryans, "A Study of Criterion Data," <u>Educational and Psycho-</u>logical Measurement, 12:344, Autumn 1952.

⁵²P. M. Symonds, "Characteristics of the Effective Teacher Based on Pupil Evaluations," Journal of Experimental Education, 23:289-310, June 1955.

many of the difficulties may have arisen because of ambiguity in the measuring instruments and the instability of the criterion measure. The theoretical bases of perceptual psychology appear well-founded and research in this area must be pursued in a variety of ways.

Even more important than academic success may be the influence of personality in the teaching situation. An institution such as Geneseo would be very interested to examine the relationships between personality types or perceptual types and the effectiveness and efficiency of classroom teaching. Before such evaluations are made, longitudinal studies will be needed to evaluate the stability of perception during the collegiate experience, particularly with reference to developing an open-minded student, capable of making choices and judgments free from bias.

CHAPTER III

METHODS OF PROCEDURE

I. DESCRIPTIONS OF THE INSTRUMENTS USED--INCLUDING RELIABILITY AND VALIDITY

There were two specific instruments used to measure personality traits in this study, the Rokeach Dogmatism Scale and the Index of Adjustment and Values by Robert Bills.

<u>Rokeach Dogmatism Scale</u>. The form of this scale used in the study is form E, which contains forty items. The Dogmatism Scale went through five revisions with the original total of eighty-nine items reduced to 40 in order to refine theoretical formulations as well as to increase reliability.

The items on the scale are designed to give a measure of general authoritarianism which does not attempt to tie in ethnocentrism or political conservatism. Unlike other measures of authoritarianism, this scale of dogmatism:

. . . involves the convergence of three highly interrelated sets of variables: closed cognitive systems, authoritarianism and intolerance.¹

Dogmatism has been defined as (a) a relatively closed cognitive system of beliefs and disbeliefs about reality, (b) organized around a central set of beliefs about absolute authority which, in turn (c) provides a framework for patterns of intolerance and qualified tolerance toward others.²

²Ibid., p. 203.

¹Milton Rokeach, "The Nature and Meaning of Dogmatism," Psychological Review, 61, 3:194, 1954.

For each of the 40 items on the scale, each in the form of a declarative statement, the respondent is asked to show agreement or disagreement by marking from +3 to -3 depending upon amount of agreement or disagreement. There is no zero point for a response in order to force a choice toward agreement or disagreement. This scale can be seen in Appendix A.³

Certain items test dogmatic concepts accentuating differences between systems, coexistence of contradictions, relative amount of knowledge possessed, beliefs regarding the isolation or helplessness of man, beliefs regarding the uncertainty of the future, beliefs about adequacy and inadequacy, self-aggrandizement, authoritarianism, belief in the cause, intolerance, feelings toward the disbeliever, tendency to make a party-line change, avoidance of facts incongruent with one's belief-disbelief system, attitude toward the past, present and future, and knowing the future.⁴

A study at Michigan State University concerning the relationship between dogmatism and academic performance was completed in 1959. Here one may observe that the relationship between examination grades and dogmatism is significant, indicating that the less dogmatic individuals tend to make higher examination grades.⁵

The reliabilities reported for Form E of the Dogmatism Scale range from .68 to .93, with the median reliability of .78. Ten sample groups were used in testing the reliability and the odd-even technique was employed.⁶

³Appendix A.

⁴Rokeach, The Open and Closed Mind, op. cit., pp. 73-80.

⁵Lehman, op. cit., p. 59.

⁶Rokeach, op. cit., p. 90.

Two separate validity studies were conducted using in one case professors as judges of dogmatic characteristics in students and another using graduate psychology students as judges. The students selected as "high" and "low" in dogmatism by the judges were given the Rokeach Dogmatism Scale. In the study where the graduate students were the judges, the observed highly dogmatic group scored approximately 55 points higher on the scale than the low dogmatic group. This difference was significant at the .01 level.⁷

Index of Adjustment and Values. The IAV was designed to measure certain personality variables. Viewed from the framework of perceptual theory, which holds that a person's behavior is consistent with his perceptions about the world in which he lives, this perception will be influenced by: needs and values, presence or absence of threat, the person's physiological state, and his beliefs about himself and other people.⁸

The two scales used in this experiment are for determining "Self" perception and perception of "Others". These are alike in that they consist of 49 trait words describing first the "Self" then feelings about "Others". The respondent is asked to give a numerical value to each trait depending upon how much of the time this trait adequately describes him. The scale ranges from 1 (Seldom) to 5 (Most of the time).⁹

Because the scoring is based on a continuum, some individuals may tend to mark most traits high or low. A system of scoring has been developed where an individual is placed in one of four catetories depending upon the relationship between Self score and Other score.

⁷Ibid., pp. 101-103.

⁸R. E. Bills, <u>Index of Adjustment and Values--Manual</u>, Adult and High School Senior Form, Auburn: Alabama Polytechnic Institute, (Unpublished), p. 5.

⁹Appendix B.

Split-half reliability coefficients for college students have ranged from .53 to .91 for <u>Self</u> scores and from .73 to .94 for <u>Other</u> scores. Test-retest reliability coefficients for college students have ranged from .52 to .79 for <u>Self</u> scores and from .65 to .84 for <u>Other</u> scores. The sixteen weeks period used in the test-retest corresponds closely to the length of the average college semester.¹⁰

Validity studies have been reported by Roberts at the University of Kentucky¹¹ and by Bills¹² who demonstrated that the scale was a valid instrument for changes in emotionality.

II. SELECTING THE GROUPS FOR THE STUDY

In order to evaluate the influence of personality factors as they relate to academic achievement of the Geneseo State class of 1965, a study sample of the most equivalent class was selected. The class of 1964, freshmen of the preceding year, were chosen because data from that class would be most closely representative of the class to follow.

The Geneseo State class of 1964, entering college in September 1960, had an enrollment of 492. Some of this number were older students, some had been in attendance at other colleges and some had been readmitted to Geneseo after a period of absence. It was felt that in order to have as homogeneous a group as possible to insure maximum predictability, only those students who had graduated from high school in

¹⁰Bills, op. cit., p. 54.

¹¹G. E. Roberts, "A Study of the Validity of the Index of Adjustment and Values," Journal of Consulting Psychology, 16:302-304, 1952.

¹²R. E. Bills, "A Validation of Changes in Scores on the Index of Adjustment and Values as a Measure of Changes in Emotionality," Journal of Consulting Psychology, 17:135-138, 1953. June 1960, and entered Geneseo in September 1960, as their first college experience would be included in the study sample. This process of definition resulted in a sample size of 444, eliminating 48 students.

Although various curriculum areas are represented in this group of 444 freshmen, the college is primarily an institution of teacher education and first year curriculum programs are markedly similar. It was felt unnecessary to separate the sample group into sub-groups representing separate curriculum fields within the area of teacher education.

In the same manner, the Geneseo State Class of 1965 was selected for the experiment. From a total enrollment of 581 freshmen in September 1961, 466 were chosen who had graduated from high school in June 1961, and entered college the following fall for the first time.

III. COLLECTION OF THE DATA

For each group, the classes of 1964 and 1965, it was necessary to gain the following information for every student: high school average, the entrance examination score on the School and College Abilities Test, the entrance examination score on the Cooperative English Test (Form T), and the obtained grade point average at the end of the first semester.

Because the first year college program at Geneseo is basically a general education program, it was felt that the high school subjects of mathematics, English, science, social studies and language should be used in computing the high school average since these preparatory courses bore the closest resemblance to the freshman college program. New York State has an examination program called the Regents Examinations given at the conclusion of these academic courses, and the forms used in reporting high school grades indicate both the class average and the Regents grade. Using the formula approved by the Association of Secondary Schools Principals and the American Association of Collegiate Registrars and Admissions Officers, two-thirds weight was given to the class average in each subject and one-third weight to the final examination. In this manner, the high school average was felt to be a fairly stable factor in the evaluation of records from the various high schools throughout the State.

Each freshman had on file scores on the School and College Abilities Test and the Cooperative English Test (Form T) which together were named the State University Admissions Examination. This examination was completed by the students during their senior year in high school and provides information in both the quantitative and verbal areas.

After one semester attendance, the obtained college average was computed for each student. This was a general college average using all sixteen semester hours of credit taken during the first semester. The method used was the weighting of letter grades with semester hours of credit taken during the first semester. The method used was the weighting of letter grades with semester hours of credit on the 4.0 = A scale.

During the Fall Semester 1961, the two personality scales previously described were administered to the Geneseo State class of 1965. The scales were identified as a "Freshman Questionnaire," with no implication of threat to the respondents.

IV. TREATMENT OF THE DATA

The high school average was recorded for each student in the two sample groups according to the procedure described in the definition of terms given in Chapter I. Likewise, the two entrance examination scores and the obtained college average after one semester were also recorded.

Using the class of 1964 as the study sample, means, standard deviations and intercorrelations were computed for the variables of high school average, School and College Abilities Test, Cooperative English Test and obtained college average. From these intercorrelations, a multiple regression equation was employed to determine maximum weights for each predictor variable, with the obtained college average as the criterion. This analysis will be presented in Chapter IV, Analysis of the Data.

From the weights derived through this analysis, a predicted college average was computed for each student in the Geneseo State Class of 1965. The data collected for the class of 1965 included all the same variables as the class of 1964, as well as the predicted college average, dogmatism score and "self" and "other" perception scores.

In order to use the <u>Rokeach Dogmatism Scale</u> in statistical analysis, it was necessary to convert the scores on each item to a new scale. Respondents had been asked to indicate agreement or disagreement with each declarative statement on the Scale with responses ranging from +3 to -3, helping to emphasize the degree of agreement or disagreement. By adding a +4 to each item, the scale would be mathematically equivalent while the range would be from 1 to 7, using all positive numbers. The sum of all the responses, using the 1 to 7 scale, is the total score on the Dogmatism Scale. To further identify the range of the scores on this scale, the scores were separated by quartiles, in order to identify those scoring high in dogmatism (upper quartile) and those scoring low in dogmatism (lower quartile).

The <u>Index of Adjustment and Values</u> contains 49 trait words on each scale. The scoring by the respondent is on a 1 to 5 scale with the 5 score being the highest amount of agreement with the trait. Before scoring, certain negative trait scores must be reversed so that they have meanings comparable to the ratings on the positive traits. Items 5 (annoying),

13 (cruel), 18 (fearful), 25 (meddlesome), 28 (nervous), 34 (reckless), 36 (sarcastic), 41 (stubborn), and 49 (faultfinding) are negative traits and their scores should be reversed before scoring. In doing this, a 1 becomes a 5, a 2 becomes a 4, a 3 stays the same, a 4 becomes a 2, and a 5 becomes a 1.

In treatment of the total scores for the "Self" and "Others" on the IVA, identification can be made among four personality patterns which then will be subject to further investigation. When the "Self" score is above the mean for the group and the "Others" score exceeds it, the subject is identified as (++). When the "Self" score is above the mean and the "Others" is below it, the subject is identified as (+-). Now, when the "Self" score is below the mean and the "Others" score exceeds it, then the (-+) identification is made. The (--) group are those whose "Self" score is below the mean and whose score for "Others" falls below the "Self" score.

Once the information had been collected for the class of 1965, all pertinent information was punched on IBM cards for analysis. The total N for the group was 466, and each card contained data for one student. Each card contained the following items of information: identification number for each student, sex, high school average carried to two decimal places, School and College Abilities Test score, Cooperative English Test score, predicted college average, obtained college average, Dogmatism score, "Self" score, "Others" score, perceptual category where a 1 punch represented the (++)... a 2 punch the (+-)... a 3 punch the (-+)... and a 4 punch the (--), and a Dogmatism category score where a 1 punch represented the upper quartile ... a 2 punch the second quartile, a 3 punch the third quartile ... and a 4 punch the lower quartile.

The information for this experimental group was then computed with the means and standard deviations for each variable. Intercorrelations were computed among all variables. Following this procedure, separate

sortings were made in order to observe the means, standard deviations and intercorrelations when considering separate personality characteristics, combinations of personality characteristics, and subgroups within each personality grouping.

Multiple correlations and regression equations were computed along the same format in order to observe the influence of the separate and combined personality characteristics with respect to predicting academic achievement during the first semester at Geneseo State. The personality variables were tested for significance of predictability by the analysis of variance technique. Chi-Square tests were employed to observe the differences between predicted and obtained college grades with respect to the various factors being studied. Using this methodology as a basis for evaluation, the following chapter will analyze the data and test the experimental hypotheses.

CHAPTER IV

ANALYSIS OF DATA

This chapter reviews the analysis of the "study sample," which was the Geneseo State freshman class during the 1960-1961 academic year. It was from this particular sample that the basic data was gathered in order to predict academic success for Geneseo freshmen as well as to make reasonable tests of hypotheses on the freshman class of the following year. The remainder of the chapter deals with the data involving the Geneseo State freshmen during the 1961-1962 academic year.

I. CONSTRUCTING A PREDICTED COLLEGE AVERAGE

The data shown in Table II was collected from a sample of 444 freshmen who had completed the first semester at Geneseo during the 1960-1961 academic year. These results were then intercorrelated in order to observe the relationships between all the variables. Table III shows the intercorrelation matrix:

The multiple correlation, using the two parts of the entrance examination and high school average as the independent variables, was +.61. It should be noted here that high school average alone correlated at +.575 with obtained college average, so the addition of the two entrance examination scores added very little to the multiple correlation. This fact is noteworthy because independently, the School and College Abilities Test and the Cooperative English Test each correlated better than +.41 with obtained college average. High school average, as demonstrated here,

	Mean Score	Standard Deviation
School and College Abilities Test	303.32	9.12
Cooperative English Test	56.79	6.68
High School Average	83.85	4.98
Obtained College Average	2.46 (2.0 = C)	.60
	,	

Table II.Pre-admissions Data and Obtained College Average forGeneseo State Freshmen During the 1960-1961 Academic Year

Table III. Intercorrelations Among Pre-admissions Data and Obtained College Average for Geneseo State Freshmen During the 1960-1961 Year

	1	2	3	4	
1. School and College Abilities Test					
2. Cooperative English Test	+.719				
3. High School Average	+.459	+.465			
4. Obtained College Average	+.419	+.429	+.575		

is the most comprehensive single predictor of college academic success at Geneseo, and must measure some of the same academic potential as the entrance examination.

Based on that data, the following weights were derived for each of the predictor variables:

School and College Abilities Test	.0072
Cooperative English Test	.0122
High School Average	.057

A correction factor was also needed in this prediction scale in order to bring the results within the range under study. For Geneseo, with a 4.0 = A scale being used, the correction factor was -5.1963. Therefore, the following formula expressed the most efficient prediction for entering freshmen:

> PCA (Predicted College Average) = .0072(SCAT)+.0122 (CO-OP English)+.057(HSA)-5.1963

Using this on a hypothetical case:

PCA = .0072(300) + .0122(60) + .057(85) - 5.1963

PCA = 2.54

This prediction scale was then used at the State University College, Geneseo, New York, for all students entering as freshmen in September, 1961.

II. PREDICTABILITY OF PERSONALITY CHARACTERISTICS

Complete data was gathered for the Geneseo State class of 1965, those freshmen who entered college in September, 1961. In addition to the information concerning high school average, School and College Abilities Test scores, and Cooperative English Test scores, which were found for the previous class, the additional information included: Dogmatism Score, Self-Perception Score, Other-Perception Score, and predicted college average. At the end of the first semester, the obtained college average was also included. Table IV on the following page shows the mean score and standard deviation for each of these factors.

Intercorrelations were computed for each of these factors and the results can be observed in Table V on page 38. The intercorrelations among the academic variables appeared quite similar to the data for the freshmen class during the 1960-1961 academic year. The intercorrelations involving the personality factors (identified by name and by 6, 7 and 8 on Table V), were all clustered around zero, with the exception that Self and Other perception scores correlated at +.58.

Table IV. Means and Standard Deviations for the Geneseo State Freshman Class During the 1961-1962 Academic Year, Consisting of Pre-admissions Data, Obtained College Average and Personality Scales.

	Mean	Standard
	Score	Deviation
High School Average	83.37	4.77
School and College Abilities Test	303.87	9.99
Cooperative English Test	56.49	7.02
Pre dicted College Average	2.44	.41
Obtained College Average	2.32	.62
Dogmatism Score	151.95	22.34
Self-Perception Score	190.70	16.62
Other-Perception Score	199.46	17.29

Again, high school average appeared as the best single predictor of academic success in college with a correlation of +.62 when compared with obtained college average. The inclusion of the other variables of School and College Abilities Test and Cooperative English Test raised this multiple correlation to +.64.

Using this data, and adding rank in class, Dogmatism category (quartile rank), and perceptual category (++, +-, -+, --), a multiple regression analysis was computed using obtained college average as the criterion measure. These nine variables were entered in regression in order to observe the predictability of each with respect to obtained college average as well as combined predictability.

The multiple regression analysis involving the personality variables showed a correlation of +.65. The weights and F-ratios can be observed in Table VI.

he 1961-1962 Academic Year
the 19
Freshmen During t

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	1	2	3	4	5	9	2	8
l. High School Average	1	, 40	.46	.84	.62	07	.06	- , 04
2. School and College Abilities Test		I	.59	.52	.37	- , 06	05	- [,] 09
3. Cooperative English Test			ı	.70	.41	12	00.	-,05
4. Predicted College Average				ı	.55	10	.04	05
5. Obtained College Average					ł	07	.01	04
6. Dogmatism Scor e						ı	06	06
7. Self-Perception Score							ı	. 58
8. Other-Perception Score								I

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		- 10/4 0112 9111			
Variable	BETA	SE BETA	Ð	SE B	Ĺч
High School Average	.5578	.0827	.7222	.1071	45.47
Rank in Class	0680	.0554	0433	.0353	1,51
School and College Abilities Test	.0895	.0460	.0544	.0284	3.79
Cooperative English Test	.1547	.0585	.1360	.0515	6.98
Dogmatism Score	.0648	.0996	.0179	.0275	.42
Self-Perception Score	0430	.0513	0160	.0191	.70
Other-Perception Score	0101	.0520	0036	.0186	.04
Dogmatism Category	0833	.0997	-。0467	.0559	.70
Perceptual Category	0941	.0537	0567	.0324	3.07

Table VI. Multiple Regression Analysis Involving Personality Factors and Academic Factors for the Geneseo State Freshmen During the 1961-1962 Academic Year

39

This analysis was then tested by the following null hypotheses: H1: THERE WILL BE NO SIGNIFICANT DEGREE OF PREDICTABILITY GAINED FROM INCLUDING THE ROKEACH DOGMATISM SCORE IN MULTIPLE REGRESSION, USING OBTAINED COLLEGE AVERAGE AS THE CRITERION.

In order to show significance at the five percent level, the F-ratio for any independent variable in this analysis would have to equal or exceed 1.90. The F-ratio for the Dogmatism Score was .42 which indicated non-significance at the five percent level as well as little predictability for this characteristic.

H2: THERE WILL BE NO SIGNIFICANT DEGREE OF PREDICTABILITY GAINED FROM INCLUDING THE ROKEACH DOGMATISM CATEGORY SCORE (QUARTILE IDENTIFICATION) IN MULTIPLE REGRESSION USING OBTAINED COLLEGE AVERAGE AS THE CRITERION.

F(Dogmatism Category) = .70 $F(9, 457)_{.95} = 1.90$ H₀: Accepted

Although the Dogmatism Category showed a larger F-ratio than the Dogmatism raw score, it was not large enough to be a significant predictor of academic success.

H3: THERE WILL BE NO SIGNIFICANT DEGREE OF PREDICTABILITY GAINED FROM INCLUDING THE SELF-PERCEPTION SCORE IN MULTIPLE REGRESSION USING OBTAINED COLLEGE AVERAGE AS THE CRITERION.

F(Self-Perception) = .70 $F(9, 457)_{.95} = 1.90$ H₀: Accepted

Acceptance of the null hypothesis indicated that Self-Perception raw score was not a significant predictor of academic success in college.

H4: THERE WILL BE NO SIGNIFICANT DEGREE OF PREDICTABILITY GAINED FROM INCLUDING THE OTHER PERCEPTION SCORE IN MULTIPLE REGRESSION USING OBTAINED COLLEGE AVERAGE AS THE CRITERION.

F(Other-Perception) = .04	$F(9, 457)_{.95} = 1.90$	H ₀ : Accepted
- (- - - - - - - - -	- () / . 95 / -	

Acceptance of the null hypothesis indicated that Other-Perception raw score was not a significant predictor of academic success in college. H5: THERE WILL BE NO SIGNIFICANT DEGREE OF PREDICTABILITY GAINED FROM INCLUDING THE PERCEPTUAL CATEGORY SCORE IN MULTIPLE REGRESSION USING OBTAINED COLLEGE AVERAGE AS THE CRITERION.

F(Perceptual Category) = 3.07	$F(9, 457)_{95} = 1.90$	H ₀ : Rejected
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Here, the null hypothesis was rejected. The F-ratio of 3.07, which exceeded the five percent significance limits, indicated that the perceptual category (++, +-, -+, --) was a significant predictor of academic success for freshmen at Geneseo State during the 1961-1962 academic year.

It should be noted that the most desirable perceptual characteristic (++), is represented by a <u>1</u> score while the least desirable perceptual characteristic (--), is represented by a <u>4</u> score. In observing this significant trait, the negative B weight shown in Table VI on page 39 can be **explained because** the most desirable trait has been **expressed** as the lowest absolute value in the scale used.

The academic variables of high school average, Cooperative English Test and School and College Abilities Test each proved to be a significant predictor of academic success as their independent F-ratios exceeded 1.90. Rank in class, with an F-ratio of 1.51, was not a significant predictor of academic success.

III. ANALYSIS OF PREDICTION EQUATIONS WHEN SEPARATE PERSONALITY CHARACTERISTICS ARE IDENTIFIED

The multiple correlation for predicting obtained college average for Geneseo State freshmen during 1961-1962, using only the three academic variables of high school average, Cooperative English Test, and School and College Abilities Test, was +.64. Prior to testing hypotheses relating to the difference between predicted and obtained college average, it was felt that separate multiple regression equations using the above-mentioned three variables, but computed for <u>specific</u> personality types, would shed some light on the consistency with which specific personality types could be predicted to succeed at the State University College, Geneseo, New York.

Table VII shows the multiple regression analysis for those students scoring in the upper quartile on the Rokeach Dogmatism Scale.

The F-ratio of 31.76 is significant well beyond the five percent level. The multiple correlation is at +.69 which is higher then for the total class of students. This phenomenon indicates there is slightly better consistency in predicting achievement for upper quartile Dogmatism scorers than for the class as a whole.

Table VIII gives data for the students scoring in the lower quartile on the Dogmatism Scale. The results can be observed on page 43. As can be observed in Table VIII, the lower quartile scores on the Dogmatism Scale, like the upper quartile scores, had a multiple correlation higher than the +.64 when all students were included.

Table VII. Multiple Regression Analysis for Those Geneseo State Freshmen During 1961-1962 Who Scored in the Upper Quartile on the Rokeach Dogmatism Scale

Multiple R = .6932	Degrees of F	reedom = 103	3 F = 3	1.76 F.	₉₅ = 2.46
Variable	BETA	SE BETA	В	SE B	F
High School Average	.5194	.0881	.0775	.0131	34.75
School and College Abilities Test	. 3233	.1147	. 2288	.0812	7.95
Cooperative English Te	st0897	. 1113	0095	.0118	.65

Table VIII. Multiple Regression Analysis for Those Geneseo State Freshmen During 1961-1962 Who Scored in the Lower Quartile on the Rokeach Dogmatism Scale

Multiple R = .6600	Degrees of Fi	reedom = 113	F = 2	$F = 29.07 F_{.95} = 2.45$			
Variable	BETA	SE BETA	В	SE B	F		
High School Average	. 4630	.0805	.0601	.0104	33.08		
School and College Abilities Test	.1794	.1046	.1157	.0674	2.94		
Cooperative English Te	est .1417	.1051	.0120	.0089	1.82		

The +.66 correlation indicates slightly better consistency in the predictability for the lower quartile Dogmatism scorers than for the class as a whole. The F-ratio of 29.07 is significant beyond the five percent level.

Table IX shows data for the predictability of the (++) students on the Bill's Scale.

Table IX. Multiple Regression Analysis for Those Geneseo State Freshmen During 1961-1962 Who Were Identified as (++) in Perceptual Characteristics

Multiple R = .6360	Degrees of Fr	eedom = 167	F = 37	7.82 F.	₉₅ = 2.43
Variable	BETA	SE BETA	В	SE B	F
High School Average	.4416	.0697	.5622	.0887	40.17
School and College Abilities Test	.0233	.0703	.0136	.0410	.11
Cooperative English Te	est .2742	.0748	.2806	.0765	13.44

Again, the multiple correlation was significant beyond the five percent level as demonstrated by the F-ratio of 37.82. The correlation of +.636 is approximately the same as for the total class of students.

Table X identifies the (--) group and shows the multiple regression analysis used in predictability of college achievement.

Table X. Multiple Regression Analysis for Those Geneseo State Freshmen During 1961-1962 Who Were Identified as (-)in Perceptual Characteristics

Multiple R = .8230 I	Degr ees of F	reedom = 4	4 F = 25	.19 F.	₉₅ = 2.58
Variable	BETA	SE BEI	CA B	SE B	F
High School Average	.6596	. 1222	.0968	.0179	29.14
School and College Abilities Test	.2178	.1362	.1650	. 1032	2.56
Cooperative English T	est .0427	. 1510	.0042	.0152	.08

The F-ratio of 25.19 is again significant beyond the five percent level. Although the sample size here is relatively small (48), the multiple correlation of +.823 is very high when compared with the multiple correlation for all freshmen at +.64. As a group, those students identified as (--) in perceptual characteristics, appear to be more homogeneous in the way they react to expected academic success than any other subgroup of the population.

These multiple correlation samples have all demonstrated ability to predict academic success at least as well for subgroups representing personality types as for the total freshmen population. If real differences do exist, they must be tested experimentally. The following section identifies the hypotheses and tests used to measure differences between predicted and achieved grades in college.

IV. ANALYSIS OF THE DIFFERENCES BETWEEN PREDICTED AND ACHIEVED COLLEGE GRADES

Of the 466 freshmen in the Geneseo State sample during the 1961-1962 academic year, 196 or 42% equalled or exceeded their predicted college average. The remaining 270 (58%), fell below their predicted college average. On the basis of this fact, the Chi Square tests used in this analysis do not test a 50:50 hypothesis in relation to exceeding or falling below predicted average. Each test relating to those students exhibiting one of the personality traits under consideration, with reference to above or below predicted average, will use the 42:58 hypothesis for expected frequency.

H6: THERE WILL BE NO SIGNIFICANT DIFFERENCE OBSERVED IN RELATION TO EXCEEDING OR FALLING BELOW PREDICTED AVERAGE WHEN THOSE STUDENTS DEFINED AS (++) ARE CONSIDERED AS A GROUP.

Students	Above PCA	Below PCA	Total
Expected	(71.82)	(99.18)	(171)
Observed	78	93	171
df = 1	$x^2 = 0.92$	$x_{.05}^2 = 3.84$	H ₀ : Accepted

Table XI. Chi Square Test of Significance of Discrepancy of the Number of Students Achieving Above or Below Predicted Average Related to (++) in Perceptual Characteristics

The null hypothesis was accepted that there was no significance difference. It can be noted, however, that there was a slight tendency for the (++) students to score above predicted average compared with the general freshman population.

H7: THERE WILL BE NO SIGNIFICANT DIFFERENCE OBSERVED IN RELATION TO EXCEEDING OR FALLING BELOW PREDICTED AVERAGE WHEN THOSE STUDENTS DEFINED AS (+-) ARE CONSIDERED AS A GROUP.

Table XII. Chi Square Test of Significance of Discrepancy of the Numberof Students Achieving Above or Below Predicted AverageRelated to (++) in Perceptual Characteristics

Students	Above PCA	Below PCA	Total
Expected	(34.44)	(47.56)	(82)
Observed	37	45	82
df = 1	$x^2 = 0.33$	$x^{2}_{.05} = 3.84$	H ₀ : Accepted

The null hypothesis was again accepted that the (+-) group did not differ significantly from the total population. Although not to a significant degree, the(+-) group exhibited a tendency to achieve above average more than for the total group.

H8: THERE WILL BE NO SIGNIFICANT DIFFERENCE OBSERVED IN RELATION TO EXCEEDING OR FALLING BELOW PREDICTED AVERAGE WHEN THOSE STUDENTS DEFINED AS(-+) ARE CONSIDERED AS A GROUP.

Table XIII. Chi Square Test of Significance of Discrepancy of the Number of Students Achieving Above or Below Predicted Average Related to (+) in Perceptual Characteristics

Students	Above PCA	Below PCA	Total
Expected	(72.66)	(100.34)	(173)
Observed	71	102	173
df = 1	$x^2 = 0.06$	$x^{2}_{.05} = 3.84$	H ₀ : Accepted

The null hypothesis was accepted that there was no statistically significant difference between the (-+) group and the total group.

H9: THERE WILL BE NO SIGNIFICANT DIFFERENCE OBSERVED IN RELATION TO EXCEEDING OR FALLING BELOW PREDICTED AVERAGE WHEN THOSE STUDENTS DEFINED AS (--) ARE CONSIDERED AS A GROUP.

Table XIV. Chi Square Test of Significance of Discrepancy of the Number of Students Achieving Above or Below Predicted Average Related to (--) in Perceptual Characteristics

Students	Above PCA	Below PCA	Total
Expected	(16.8)	(23.2)	(40)
Observed	10	30	40
df = 1	$x^2 = 4.74$	$x^{2}_{.05} = 3.84$	H ₀ : Rejected

Here, the null hypothesis was rejected. It was demonstrated that the group defined as (--) in perceptual characteristics was more likely to fall below predicted average by a statistically significant degree. The rejection of the hypothesis means that the probability of this occurring by chance is only five in one-hundred.

H10: THERE WILL BE NO SIGNIFICANT DIFFERENCE OBSERVED IN RELATION TO EXCEEDING OR FALLING BELOW PREDICTED AVERAGE WHEN THOSE STUDENTS DEFINED AS SELF ACCEPTING AND HIGH IN DOGMATISM ARE CONSIDERED AS A GROUP.

Table XV.Chi Square Test of Significance of Discrepancy of the Number
of Students Achieving Above or Below Predicted Average
Related to Self Acceptance and High in Dogmatism

Students	Above PCA	Below PCA	Total
Expected	(52.5)	(72.5)	(125)
Observed	55	70	125
df = 1	$x^2 = 0.21$	$x^{2}.05 = 3.84$	H ₀ : Accepted

No significant difference was observed relating to this hypothesis. At the .05 level, the null hypothesis was accepted.

H11: THERE WILL BE NO SIGNIFICANT DIFFERENCE OBSERVED IN RELATION TO EXCEEDING OR FALLING BELOW PREDICTED AVERAGE WHEN THOSE STUDENTS DEFINED AS SELF ACCEPTING AND LOW IN DOGMATISM ARE CONSIDERED AS A GROUP.

Students	Above PCA	Below PCA	Total
Expected	(55.86)	(77.14)	(133)
Observed	69	64	133
df = 1	$x^2 = 5.31$	$x^{2}_{.05} = 3.84$	H ₀ : Rejected

Table XVI.Chi Square Test of Significance of Discrepancy of the Number
of Students Achieving Above and Below Predicted Average
Related to Self Acceptance and Low in Dogmatism

Here, the null hypothesis was rejected at the .05 level. Those students defined as self accepting who also scored low in dogmatism differed significantly from the total population. Observing Table XVI, those students did much better than the total group, with a much larger number of students exceeding predicted average than expected.

H12: THERE WILL BE NO SIGNIFICANT DIFFERENCE OBSERVED IN RELATION TO EXCEEDING OR FALLING BELOW PREDICTED AVERAGE WHEN THOSE STUDENTS DEFINED AS SELF REJECTING AND LOW IN DOGMATISM ARE CONSIDERED AS A GROUP.

Table XVII. Chi Square Test of Significance of Discrepancy of the Numberof Students Achieving Above or Below Predicted AverageRelated to Self Rejection and Low in Dogmatism

Students	Above PCA	Below PCA	Total	
Expected	(41.58)	(57.42)	(99)	
Observed	32	67	99	
df = 1	$x^2 = 3.81$	x^2 . 05 = 3.84	H ₀ : Accepted	

The null hypothesis was accepted at the .05 level. However, the x^2 value of 3.81 was very close to the level where the hypothesis could be

rejected. The direction of near-significance was that students so defined tended to fall below expectancy more frequently than for the total group.

H13: THERE WILL BE NO SIGNIFICANT DIFFERENCE OBSERVED IN RELATION TO EXCEEDING OR FALLING BELOW PREDICTED AVERAGE WHEN THOSE STUDENTS DEFINED AS SELF REJECTING AND HIGH IN DOGMATISM ARE CONSIDERED AS A GROUP.

Table XVIII. Chi Square Test of Significance of Discrepancy of the Numberof Students Achieving Above or Below Predicted AverageRelated to Self Rejection and High in Dogmatism

Students	Above PCA	Below PCA	Total
Expected	(47.46)	(65.54)	(113)
Observed	42	71	113
df = 1	$x^2 = 1.08$	$x_{.05}^2 = 3.84$	H ₀ : Accepted

The null hypothesis was accepted at the .05 level. Although no significant differences were observed, the tendency was for this group to fall below predicted average more frequently than for the total group.

H14: THERE WILL BE NO SIGNIFICANT DIFFERENCE OBSERVED IN RELATION TO EXCEEDING OR FALLING BELOW PREDICTED AVERAGE WHEN THOSE STUDENTS DEFINED AS HIGH IN DOGMATISM ARE CON-SIDERED AS A GROUP.

Students	Above PCA	Below PCA	Total
Expected	(94.18)	(134.82)	(229)
Observed	100	129	229
df = 1	$x^2 = 0.70$	$x^{2}_{.05} = 3.84$	H ₀ : Accepted

Table XIX. Chi Square Test of Significance of Discrepancy of the Numberof Students Achieving Above or Below Predicted AverageRelated to High Scorers in Dogmatism

Here, high scorers in dogmatism were those above the mean in relation to the total group of freshmen. The null hypothesis was accepted at the .05 level that no significant difference was to be found between this group and the total population.

H15: THERE WILL BE NO SIGNIFICANT DIFFERENCE OBSERVED IN RELATION TO EXCEEDING OR FALLING BELOW PREDICTED AVERAGE WHEN THOSE STUDENTS DEFINED AS LOW IN DOGMATISM ARE CONSIDERED AS A GROUP.

Table XX. Chi Square Test of Significance of Discrepancy of the Numberof Students Achieving Above or Below Predicted AverageRelated to Low Scorers in Dogmatism

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	Students	Above PCA	Below PCA	Total
	Expected	(99.54)	(137.46)	(237)
	Observed	96	141	237
	df = 1	$x^2 = 0.22$	$x^{2}_{.05} = 3.84$	H ₀ : Accepted

The null hypothesis was again accepted that this group did not differ significantly from the expected pattern of the total population.

H16: THERE WILL BE NO SIGNIFICANT DIFFERENCE OBSERVED IN RELATION TO EXCEEDING OR FALLING BELOW PREDICTED AVERAGE WHEN THOSE STUDENTS ADMITTED BELOW 2.0 IN PREDICTION ARE GROUPED BY SELF ACCEPTANCE.

Table XXI. Chi Square Test of Significance of Discrepancy of the Numberof Students Achieving Above or Below Predicted AverageRelated to Self Acceptance, Whose Predicted Average WasBelow 2.0

Students	Above PCA	Below PCA	Total
Expected	(10.08)	(13.92)	(24)
Observed	14	10	24
df = 1	$x^2 = 2.62$	$x^{2}_{.05} = 3.84$	H ₀ : Accepted

The null hypothesis was accepted at the .05 level. It can be observed from Table XXI that those students admitted below a predicted average of 2.0 who were self-accepting, obviously borderline admission cases, did exceed prediction more often than they fell below prediction, although not to a statistically significant degree.

H17: THERE WILL BE NO SIGNIFICANT DIFFERENCE OBSERVED IN RELATION TO EXCEEDING OR FALLING BELOW PREDICTED AVERAGE WHEN THOSE STUDENTS ADMITTED BELOW 2.0 IN PRE-DICTION ARE GROUPED BY SELF REJECTION.

Table XXII. Chi Square Test of Significance of Discrepancy of the Numberof Students Achieving Above or Below Predicted AverageRelated to Self Rejection, Whose Predicted Average WasBelow 2.0

Students	Above PCA	Below PCA	Total
Expected	(11.34)	(15.66)	(27)
Observed	7	20	27
df = 1	$x^2 = 2.86$	$x^{2}_{.05} = 3.84$	H ₀ : Accepted

The null hypothesis was accepted at the .05 level. Here, the tendency was exhibited for the self-rejecting group to fall below expectancy more than for the total group, although this discrepancy was not statistically significant.

V. SUMMARY OF TESTS OF HYPOTHESES

The first five hypotheses in Chapter IV were related to direct predictability of personality traits in multiple regression. These were tested by the F-ratio at the .05 level. Hypotheses 6 through 17 all tested the difference between predicted and achieved grades in college and employed the X^2 test at the .05 level with the expected frequency of above to below predicted average at 42:58. This frequency ratio was based on the known distribution of the sample under study.

Null Hypotheses	Subject	Test	Level	Conclusion
Hl	Dogmatism Score- Prediction	F	.05	Accepted
H2	Dogmatism Category Prediction	F	.05	Accepted
Н3	Self-Perception Prediction	F	.05	Accepted
H4	Other Perception- Prediction	F	.05	Accepted
H5	Perceptual Category Prediction	F	.05	Rejected
Н6	(++) related to achievement	X²	.05	Accepted
H7	(+-) related to achievement	X²	.05	Accepted
H8	(-+) related to achievement	X 2	.05	Accepted
Н9	() related to achievement	X²	.05	Rejected
H10	Self Acceptance High in Dogmatism	X²	.05	Accepted
H11	Self Acceptance Low in Dogmatism	X ²	.05	Rejected
H12	Self Rejection Low in Dogmatism	X 2	.05	Accepted
H13	Self Rejection High in Dogmatism	X ²	.05	Accepted
H14	High in Dogmatism	X²	.05	Accepted
H15	Low in Dogmatism	X²	.05	Accepted
H16	Self Acceptance Below 2.0	X²	.05	Accepted
H17	Self Rejection Below 2.0	X²	.05	Accepted

The implications of the seventeen hypotheses will be discussed in Chapter V. There were fourteen null hypotheses accepted and three rejected. The rejected hypotheses included the perceptual category score as providing some predictability for college grades; the (-) perceptual category showing those students falling below predicted average more frequently than the total group; and, those students who were self-accepting and low in dogmatism who exceeded predicted average more frequently than did the total group.

CHAPTER V

SUMMARY AND CONCLUSIONS

I. SUMMARY

<u>The Problem</u>. It was the primary purpose of this study to investigate the relationship of two personality scales with academic success **among** freshmen at the State University College, Geneseo, New York. The two scales used were: The Rokeach Dogmatism Scale and the Index of Adjustment and Values.

Prediction of academic success at the college level has long been the subject of intensive investigation. When students drop out of college for academic reasons, perhaps many did have the potential to do successful work but other factors were influential in contributing to their poor progress. The pre-admissions factors of high school average, rank in class, and entrance examination scores have proven to be fairly good predictors of college success; however, certain personality traits have usually been linked with "not living up to expectation."

This study had as its basic hypotheses that personality variables would contribute significantly to an increase in predictability of academic success in college; that personality characteristics of dogmatism and perception combined with academic predictors would increase predictability of academic success in college; that significant differences would be observed in predicting academic success when the population was separated into subgroups representing the various levels of dogmatism and the various categories of perceptual traits; and that differences between predicted and achieved college average could be measured by personality characteristics.

These hypotheses had, as a basis, the theoretical concepts of perceptual psychology. It was hypothesized that adjustment to the initial collegiate experience would be influenced to a significant degree by the factors of an individual's self-perception, his perception of others, and his dogmatic set toward problems of values. Theoretically, these personality traits would influence behavior, and specifically, such an influence on behavior during the freshman year in college could influence a student's academic success.

<u>Review of the Literature</u>. Evidence gathered from research studies during the last thirty years indicated rather clearly that high school average, rank in class and entrance examination scores are the most reliable predictors of academic success in college. Using these factors in combination, it is still difficult to raise the correlation between predicted and achieved grades in college above +.60.

Many different personality scales have been used in evaluating and predicting achievement in college, but for the most part, little statistical significance had been established. In testing with personality scales, much of the difficulty in predictability may have arisen because of ambiguity in the measuring instruments and the instability of the criterion measure, achievement itself.

<u>Methodology</u>. The Geneseo State freshman class during the 1960-1961 academic year was used to build a predicted college average. The individual predictors were high school average, School and College Abilities Test scores, and Cooperative English Test scores. The criterion measure was obtained college average. The number of students in this sample group was 444, with only those students who had graduated from high school in June, 1960, used in computing the data.

From the data collected for the 1960-1961 freshmen, predicted averages were computed for all entering freshmen to Geneseo State in
September, 1961. This sample group, eliminating those students who had not graduated from high school in June, 1961, was 466.

During the fall semester 1961, the two personality scales of dogmatism and perception were administered to all freshmen. The scales were identified as a "Freshman Questionnaire," with no implication of threat to the respondents. After these test results were analyzed, they were combined with the pre-admission factors of high school average and entrance examination scores in order that analyses could be made to evaluate predictive characteristics of the personality factors under consideration as well as shed light upon the variation between predicted and achieved grades in college.

The statistical methods used to test the experimental null hypotheses were the F-test, to examine the significance of individual predictors in a multiple regression equation, and the x^2 test, to examine the significance of discrepancy between expected college averages and observed college averages. Because this study was considered exploratory in nature, the null hypotheses were all tested at the .05 level of significance.

<u>Analysis of Data</u>. The analysis of data revealed the mean and standard deviation for each factor in the pre-admissions data. Intercorrelations among these factors indicated that high school average was the best single predictor of academic success in college with a correlation of +.575. When the entrance examination scores were also included, the multiple correlation rose to +.61.

Individually, the personality traits of dogmatism and perception did not correlate highly with either the academic predictors or obtained grades in college when analyzed by raw score. The correlations among perception and all other factors were generally around zero, while dogmatism score correlated negatively, but lowly, with all other factors.

In testing the significance of individual predictors relating to obtained average in college, high school average, Cooperative English Test score, School and College Abilities Test score and Perceptual

Category all were significant beyond the five percent level of confidence. Of the two personality traits studied, the perceptual category consisting of (++), (+-), (-+), and (--), proved to be significant in predicting college grade point average.

When specific subgroups were examined, by analyzing academic prediction equations for the various categories of dogmatism and perception, the multiple correlations ranged from +.63 to +.82, indicating that students in such subgroups appear to be more homogeneous in the way they react to expected academic success than the entire class of freshman students. The group exhibiting the +.82 were those defined as (-)in perceptual traits.

Because forty-two percent of the Geneseo State freshmen equalled or exceeded predicted average, the Chi-Square test was employed at that expected frequency in comparing the various personality traits under study. Of the twelve hypotheses related to the differences between predicted and achieved averages, only two were rejected at the .05 level. Those individuals identified as (-) in perceptual traits significantly fell below expectancy and those who were both self-accepting and low in dogmatism significantly exceeded predicted average.

There appeared to be a rather consistent pattern among the other tests even though they were not significant at the .05 level. Those individuals identified as self-accepting (having the + trait for self) generally exceeded predicted average more often than those with the self trait. This factor was particularly noticeable among borderline students who were admitted with a predicted average of below 2.0.

II. CONCLUSIONS

The results of this study indicate that perceptual traits, as measured by the Index of Adjustment and Values, do aid in the prediction of academic success among freshmen at the State University College, Geneseo, New York. It is only when these perceptual traits are identified by category (++, +-, -+, and --), and not when they are identified by raw score, that statistically significant results can be obtained in prediction of academic success.

When subgroups of the freshman population at Geneseo are separated by personality traits as identified by the Index of Adjustment and Values and the Rokeach Dogmatism Scale, statistically significant variations can be observed between a student's predicted average and his obtained average. Those students identified as (--) or self-rejecting with a low valuation of others, significantly fell below expected achievement. At the same time, those students who were low in dogmatism and were also selfaccepting, significantly exceeded predicted average in college. These quantitative results are very much in agreement with the philosophical and psychological concepts that well-adjusted students are likely to perform at a satisfactory level, while those less well-adjusted are likely to experience difficulty and frustration, particularly in a new environment such as the first year of college.

The important factor here is that beginning students at Geneseo (who are most likely to experience difficulty in adjusting to their new environment), can be identified on a quantitative scale early in the college experience. With such information, these students may become candidates for counseling services at the college in order that they can make as satisfactory an adjustment as possible to their new experiences. Counseling services could be oriented toward assisting these students to become more open minded (less dogmatic) and more accepting and understanding of self.

Because of the exploratory nature of the study with the significance set at the .05 level, no safe judgment can be made in using these personality scales as a basis for admission or rejection of the candidate. It would seem apparent that positive indications exist suggesting the improvement of current academic prediction techniques by including such personality variables. This experiment should be repeated at another State University College in New York before further implications can be drawn regarding prediction of collegiate success from personality traits.

Further investigation is also suggested in the area of the amount of change occurring in perceptual or dogmatic traits during the college experience. Do these traits remain fairly stable? If significant change occurs in college students, is it related to the kind of instruction? Is it related to the type of instructors? Perhaps a given personality type may be rewarded by one instructor and yet criticized by another instructor. Those kinds of experiences and instruction which tend to increase open-mindedness and self-acceptance should be identified and put into practice on the basis of quantifiable data as well as philosophical belief.

Important as academic success may be, follow-up studies should be conducted at Geneseo in order to understand the relationship of these personality traits and success in the student-teaching situation. It should be the function of an institution primarily engaged in teacher education to be as concerned with the personality development of prospective teachers as with success or failure in course work.

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APPENDICES

APPENDIX A

FRESHMAN QUESTIONNAIRE

The following is a study of what the general public thinks and feels about a number of important social and personal questions. The best answer to each statement below is your <u>personal opinion</u>. We have tried to cover many different and opposing points of view; you may find yourself agreeing strongly with some of the statements, disagreeing just as strongly with others, and perhaps uncertain about others; whether you agree or disagree with any statement, you can be sure that many people feel the same as you do.

Mark each statement in the left margin according to how much you agree or disagree with it. Please mark every one.

Write +1, +2, +3, or -1, -2, -3, depending on how you feel in each case.

+1:	I AGREE A LITTLE	-1:	I DISAGREE A LITTLE
+2:	I AGREE ON THE WHOLE	-2:	I DISAGREE ON THE WHOLE
+3:	I AGREE VERY MUCH	- 3:	I DISAGREE VERY MUCH

- 1. The United States and Russia have just about nothing in common.
- 2. The highest form of government is a democracy and the highest form of democracy is a government run by those who are most intelligent.
- 3. Even though freedom of speech for all groups is a worthwhile goal, it is unfortunately necessary to restrict the freedom of certain political groups.
- 4. It is only natural that a person would have a much better acquaintance with ideas he believes in than with ideas he opposes.
- 5. Man on his own is a helpless and miserable creature.
- 6. Fundamentally, the world we live in is a pretty lonesome place.
- 7. Most people just don't give a "damn" for others.
- 8. I'd like it if I could find someone who would tell me how to solve my personal problems.
- 9. It is only natural for a person to be rather fearful of the future.
- 10. There is so much to be done and so little time to do it in.
- 11. Once I get wound up in a heated discussion I just can't stop.
- 12. In a discussion I often find it necessary to repeat myself several times to make sure I am being understood.
- 13. In a heated discussion I generally become so absorbed in what I am going to say that I forget to listen to what the others are saying.
- 14. It is better to be a dead hero than a live coward.
- 15. While I don't like to admit this even to myself, my secret ambition is to become a great man like Einstein, or Beethoven, or Shakespeare.
 - ____16. The main thing in life is for a person to want to do something important.

- 17. If given the chance I would do something of great benefit to the world.
- 18. In the history of mankind there have probably been just a handful of really great thinkers.
- 19. There are a number of people I have come to hate because of the things they stand for.
 - 20. A man who does not believe in some great cause has not really lived.
- 21. It is only when a person devotes himself to an ideal or cause that life becomes meaningful.
- 22. Of all the different philosophies which exist in this world there is probably only one which is correct.
- 23. A person who gets enthusiastic about too many causes is likely to be a pretty "wishy-washy" sort of person.
- 24. To compromise with our political opponents is dangerous because it usually leads to the betrayal of our own side.
 - 25. When it comes to differences of opinion in religion we must be careful not to compromise with those who believe differently from the way we do.
- 26. In times like these, a person must be pretty selfish if he considers primarily his own happiness.
 - 27. The worst crime a person could commit is to attack publicly the people who believe in the same thing he does.
 - 28. In times like these it is often necessary to be more on guard against ideas put out by people or groups in one's own camp than by those in the opposing camp.
 - ____29. A group which tolerates too much differences of opinion among its own members cannot exist for long.
 - ____30. There are two kinds of people in this world: those who are for the truth and those who are against the truth.

- 31. My blood boils whenever a person stubbornly refuses to admit he's wrong.
- 32. A person who thinks primarily of his own happiness is beneath contempt.
- 33. Most of the ideas which get printed nowadays aren't worth the paper they are printed on.
- 34. In this complicated world of ours the only way we can know what's going on is to rely on leaders or experts who can be trusted.
 - 35. It is often desirable to reserve judgment about what's going on until one has had a chance to hear the opinions of those one respects.
- 36. In the long run the best way to live is to pick friends and associates whose tastes and beliefs are the same as one's own.
 - 37. The present is all too often full of unhappiness. It is only the future that counts.
- 38. If a man is to accomplish his mission in life it is sometimes necessary to gamble "all or nothing at all."
- 39. Unfortunately, a good many people with whom I have discussed important social and moral problems don't really understand what's going on.
 - 40. Most people just don't know what's good for them.

APPENDIX B

PERSONAL CHARACTERISTICS CHECK-LIST

Teachers and students have many different personal traits. It will help us develop a better understanding of this college, if you would describe yourself as you believe you really are. Please remember that all of your responses are kept in strictest confidence. Following are 49 words which are commonly used to describe people. Try to describe yourself as accurately as possible by completing the column.

Please write by each word how much of the time you believe that you are this kind of person. Choose the one response (1 through 5) which best describes your belief about yourself.

In the example, the person responding has said in effect: I am an academic kind of person a good deal of the time (4).

Please proceed to complete the column.

TRAIT:	How much of the time am I this kind of person?		
RESPONSES:	 Seldom Occasionally About half the time Good deal of the time Most of the time 		
EXAMPLE:	Academic		
	l. Acceptable		
	2. Accurate		
	3. Alert		
	4. Ambitious		
	5. Annoying		
	6. Busy		
	7. Calm		
	8. Charming		
	9. Clever		
	10. Competent		
	11. Confident	·	
	12. Considerate		
	13. Cruel		
	14. Democratic		
	15. Dependable		

16.	Economic	
17.	Efficient	
18.	Fearful	
19.	Friendly	
20.	Fashionable	
21.	Helpful	. <u></u>
22.	Intellectual	
23.	Kind	
24.	Logical	
25.	Meddlesome	
26.	Merry	
27.	Mature	
28.	Nervous	
29.	Normal	
30.	Optimistic	
31.	Poised	
32.	Purposeful	
33.	Reasonable	
34.	Reckless	
35.	Responsible	
36.	Sarcastic	
37.	Sincere	
38.	Stable	

39. Studious 40. Successful 41. Stubborn 42. Tactful ____ 43. Teachable 44. Useful _____ 45. Worthy _____ 46. Broad-minded ____ 47. Businesslike ____ 48. Competitive _____ 49. Faultfinding

CHARACTERISTICS OF OTHERS CHECK-LIST

Please think about the persons whom you feel are your friends. Although your friends may be somewhat different in many ways, try to think of the "average person" among your friends; or think of "your friends in general." Then try to put yourself in the place of this "average friend" and fill out the same check-list that you completed for yourself.

TRAIT:	AIT: How much of the time do your "friend in general" believe themselves to be this kind of person?	
RESPONSES:	 Seldom Occasionally About half the time Good deal of the time Most of the time 	
	l. Acceptable	
	2. Accurate	
	3. Alert	
	4. Ambitious	
	5. Annoying	
	6. Busy	
	7. Calm	
	8. Charming	
	9. Clever	

10. Competent	
11. Confident	
12. Considerate	
13. Cruel	
14. Democratic	
15. Dependable	
16. Economical	
17. Efficient	
18. Fearful	
19. Friendly	
20. Fashionable	
21. Helpful	
22. Intellectual	
23. Kind	
24. Logical	
25. Meddlesome	
26. Merry	
27. Mature	
28. Nervous	
29. Normal	
30. Optimistic	
31. Poised	
32. Purposeful	

33. Reasonable	
34. Reckless	. <u></u>
35. Responsible	. <u> </u>
36. Sarcastic	·
37. Sincere	
38. Stable	
39. Studious	
40. Successful	·
41. Stubborn	
42. Tactful	
43. Teachable	
44. Useful	
45. Worthy	
46. Broad-minded	
47. Businesslike	
48. Competitive	
49. Faultfinding	

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