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Achievement Need & Academic Success of Marginal College Students

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ACHIEVEMENT NEED AND ACADEMIC SUCCESS OF MARGINAL COLLEGE STUDENTS

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OF MARGINAL COLLEGE STUDENTS

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ACHIEVEMENT NEED AND ACADEMIC SUCCESS OF MARGINAL COLLEGE STUDENTS

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This study was undertaken in an effort to identify the marginal students at Western Kentucky University who will succeed academically only if they receive special help. Thirty-four male and eleven female marginal freshmen (ACT scores 13 to 17; GPAs 1.9 to 2.2) were tested with the Edwards Personal Preference Schedule (EPPS) to explore the possible relationship of the EPPS need for achievement (n Ach) to the academic success of the marginal freshmen. A secondary purpose was to determine if the need for achievement had a significant relationship to the number of hours for which the students initially registered and the number of hours carried to the end of the semester. The subjects were divided into three n Ach groups based on the scores obtained: Low (1-10), Medium (11-16), and high (17-23). Data on college GPAs and beginning and ending hours attempted were analyzed statistically across the n Ach groups. The three groups did not differ significantly on college GPA. The beginning and ending hours of males in the low and medium n Ach groups differed significantly; no significant difference was found for males in the high n Ach group or for the females. Additional explorations were made into the relationship between other factors (personality needs, high school class size, sex) and

academic achievement. Nothing of significance was found.

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CHAPTER I

INTRODUCTION

This study focuses upon the need for achievement, as measured by the Edwards Personal Preference Schedule (EPPS),[1] and its possible relationship to academic success at Western Kentucky University. If a positive relationship exists, the EPPS need for achievement (n Ach) variable could be used to identify students who will need special help in order to succeed at this university.

Background and Rationale

Due to the recent open admissions policy in most public educational institutions, many universities are admitting an increasingly large number of students who can be classified as marginal students in terms of potential for academic success. Of these students, some will succeed with at least a 2.0 grade point average (GPA) and some will fail. Since these marginal students are now being encouraged to go to college, an important question should be considered: "How can the marginal students who are apt to fail be identified so that special help can be given them?"

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[1]The Edwards Personal Preference Schedule is a personality inventory which consists of 225 forced choice items. It measures fifteen personality needs based on the needs theory of H. A. Murray.

Some educators question why such students even attempt college work. An answer to that question may be found in a study of the determinants of post high school plans by Berdie and Hood in 1964.[2] They found that attitudes and values have a significant relationship to the student's decision to attend or not to attend college. That finding is supported by a 1971 study by Rickey George and Jon Marshall of the personality traits of college versus non-college students. George and Marshall found that the college-prone students in their study manifested needs in the areas of influence, prestige, and self-accomplishment.[3] Along these same lines, Reed Merrill and Daniel Murphy (1959) concluded that those students who conform to the values of our society hope to solve their problems by further education even though their potential for college success is small.[4] So in working with the academically marginal student, educators must realize that variables other than academic aptitude are important factors in determining whether or not a student decides to enter college and whether or not he succeeds once he matriculates.

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[2]R. F. Berdie and A. B. Hood, "Personal Values and Attitudes as Determinants of Post High School Plans," Personnel and Guidance Journal 42 (1964): 759.

[3]Rickey L. George and Jon C. Marshall, "Personality of Young Adults: College Versus Noncollege," Journal of College Student Personnel 12 (1971): 443.

[4]Reed M. Merrill and Daniel T. Murphy, "Personality Factors and Academic Achievement in College," Journal of Counseling Psychology 6 (1959): 209.

Although open admissions is a relatively new trend, the prediction of academic success and failure of college students has interested researchers for many years. In 1949, Travers reviewed more than two hundred studies on academic prediction. He concluded that, of all the predictors, high school grades surpassed either subject matter tests or psychological tests as predictors of college grades.[5]

Much of the early literature on prediction of academic achievement was concerned with intellective and ability factors as predictors. Some of the predictors studied since 1970 are Scholastic Aptitude Tests and high school GPA; motivation, ability and likability; high school grades and College Entrance Examination Board Test scores; American College Test; and General Educational Development Test.[6]

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[5]Benjamin S. Bloom and Frank R. Peters, The Use of Academic Prediction Scales for Counseling and Selecting College Entrants (New York: Free Press of Glencoe, 1961), p.9.

[6]Marvin Siegelman, "SAT and High School Average Predictions of Four Year College Achievement," Educational and Psychological Measurement 31 (1971); J. R. Williams, Willard R. DeWitt, and Robert W. Hurt, "Ability, Likability, and Motivation of Students as They Relate to Prediction of Achievement," The Journal of Educational Research 65 (December 1971); Paul S. Burnham and Benjamin A. Hewitt, "Secondary School Grades and Other Data as Predictors of Academic Achievement in College," College and University 48 (Fall 1972); Ray Merritt, "The Predictive Validity of the American College Test for Students from Low Socioeconomic Levels," Educational and Psychological Measurement 32 (1972); and Amiel T. Sharon, "Predicting the College Success of Non High School Graduates with the Tests of General Educational Development," Educational and Psychological Measurement 32 (1972).

Although the prediction of success or failure is important, prediction should not be the sole purpose of research on marginal and average ability students. Research serves no real purpose if it does not lead to some constructive suggestions to help the students once they are admitted to college.

In recent years Western Kentucky University, as well as many other institutions of higher learning, has recognized the need to help marginal students and has answered that need to some extent by offering some "extras." The "extras" at Western include conditional admission, academic and personal counseling in the Office of Undergraduate Advisement, free tutoring for veterans, free and fee tutoring for all students in almost all courses, increased leniency in policy concerning hours which can be repeated,[7] and an extension of the time period during which students may drop courses without penalty (students may now drop with a W or WP through the fourteenth week of a sixteen-week semester).[8]

One reason for trying to help marginal students to the fullest extent is the potential indirect effect on enrollment of a student's academic failure. One university recruiter feels that the students who drop out of school as a result of academic difficulties may influence their peers in their

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[7]Western Kentucky University Bulletin (Bowling Green, Kentucky, Spring 1974: 27.

[8]Ibid., p. 30.

hometown to go elsewhere to college.[9] In this sense, identifying and aiding the marginal students becomes doubly important.

In regard to this problem of "academic wash-out," Merrill and Murphy asked: "Can certain nonintellectual factors be identified which will point to the students of poor achievement who have a better chance for success?"[10] However, it is the opinion of this writer that research should not be biased toward the student with the best chance for success. The student who enters college with little chance of success has greater need for attention. The question should be amended to read as follows: "Can certain nonintellectual factors be identified which will point to the marginal students with the least chance for success so that efforts can be made to help them achieve at least minimal success?" That is the general question to be considered in this study.

Objectives of the Study

Primarily, this study is designed to answer the question: "Can the need for achievement as measured by the EPPS be used to distinguish between the marginal students who will achieve at least a 2.0 GPA and those who will fail to achieve a 2.0 GPA during their first semester at Western?" If the need to accomplish tasks of personal and social significance (n Ach) proves to be a valid predictor of academic achievement,

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[9]Interview with Mr. David Mefford, Recruiter, Western Kentucky University, Bowling Green, Kentucky, 3 April, 1974.

[10]Merrill and Murphy, "Personality Factors and Academic Achievement," p. 207.

it could be used to determine which of the marginal students will succeed without help and which ones will succeed only with special help.

Although students entering college for the first time may not realize it, the normal freshman load of sixteen to eighteen hours may be more hours than most marginal students are capable of handling. Some of these students will realize that and drop some of their courses when they begin to feel overloaded. However, the marginal students with a high need for achievement may be reluctant to drop courses and may experience serious academic difficulty as a result. Consequently, this study attempts to answer a second question: "Does the need for achievement have a significant relationship to the hours for which the marginal students originally registered and to the number of hours carried to the end of the semester?"

If the answer to both questions is "Yes," the marginal students admitted to Western could be given the EPPS during summer orientation and the results could be interpreted to their advisors. The advisors would then be in a better position to advise the students as to the type of courses and the number of hours appropriate to their ability. In addition, arrangements could be made to give special assistance to those students identified as likely to fail. For example, the results could be used to recommend students to the College Reading Improvement course which is designed to improve basic vocabulary, comprehension skills, and study skills. Research

by Dr. Eugene Rich has indicated that students who take the course have a higher mean GPA at the end of the first semester than a matched group of students who did not take the course.[11] Identifying and assisting marginal students who are likely to fail is important to the students and to the University. This study attempts to facilitate the task.

Definition of Terms

The following definitions of terms are used for the purposes of this study:

1. Marginal student is the student who has a composite ACT score of at least thirteen but not more than seventeen, and a high school GPA of at least 1.9 but not more than 2.2.

2. High school GPA is the grade point average computed by the Office of Admissions from the high school English, math, social science, and science grades.

3. College GPA is the grade point average which the student achieves during the first semester of the freshman year.

4. Beginning hours refers to the number of hours for which the student initially registered, before any drops or adds.

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[11]From 1969 to 1971, Dr. Eugene Rich of the Department of Reading and Special Education at Western Kentucky University compared the mean GPA of the freshmen in the Reading 090 course to the mean GPA of a control group of freshmen matched on age, sex, ACT, and high school GPA. He found the control group GPA to be 1.67 and the Reading group GPA to be 1.89 in 1969; in 1970, the control group GPA was 1.79 and the Reading group GPA was 2.04; and in 1971, the control group GPA was 1.62 and the Reading group GPA was 2.06.

5. Ending hours refers to the number of hours for which the student was still registered at the end of the semester, whether or not passing grades were obtained.

6. Need for Achievement (n Ach) is the personality variable defined by Allen Edwards as:

> The need to do one's best, to be successful, to accomplish tasks requiring skill and effort, to be a recognized authority, to accomplish something of great significance, to do a difficult job well, to solve difficult problems and puzzles, to be able to do things better than others, to write a great novel or play.[12]

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[12]Allen L. Edwards, Edwards Personal Preference Schedule Manual, Revised 1959, (New York: The Psychological Corporation, 1959): 11.

CHAPTER II

REVIEW OF THE LITERATURE

Although scholastic aptitude tests and past performance have proven to be the most accurate predictors of academic success to date, Leonard Goodstein and Alfred Heilbrun (1962) felt that they account for less than half the variance in academic performance.[1] In recent years, many researchers have attempted to find personality traits which would account for the other half of the variance in the prediction of academic success. A frequently used design in the search for nonintellectual predictors of college achievement involves correlating scores on the various scales of a personality inventory with an index of college achievement.[2] The Edwards Personal Preference Schedule (EPPS) has been used in several such studies.

Since this study is primarily concerned with the need for achievement as measured by the n Ach scale of the EPPS, the results of the studies cited here will be limited to the

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[1]Leonard D. Goodstein and Alfred B. Heilbrun, Jr., "Prediction of College Achievement from the Edwards Personal Preference Schedule at Three Levels of Intellectual Ability," Journal of Applied Psychology 46 (1962): 317.

[2]Milton D. Hakel, "Prediction of College Achievement from the Edwards Personal Preference Schedule Using Intellectual Ability as a Moderator," Journal of Applied Psychology 50 (1966): 336.

findings on the EPPS n Ach scale. The earliest studies using the EPPS were designed to determine if personality variables could discriminate between over-achieving and under-achieving students. The major purposes of the 1958 study by Gary Gebhart and Donald Hoyt were to determine if male students at different ability levels had different personality needs and to determine whether or not the personality correlates of over-achievement and under-achievement were the same at various ability levels. Seven hundred forty students at Kansas State College were subdivided into low ability (below .70 GPA), average ability (at least .70 but below 1.30 GPA), and high ability (above 1.30 GPA). They were then divided into under-achievers (those who made lower than predicted) and over-achievers (those who made higher than predicted). Gebhart and Hoyt found that the over-achievers and the high ability students scored significantly higher on the EPPS n Ach scale than did the under-achievers or the low ability students. These researchers concluded that several scales of the EPPS do discriminate between over-achievers and under-achievers.[3]

Robert Krug replicated the Gebhart and Hoyt study in 1959. His results correlated significantly with theirs in that over-achievers scored higher on n Ach than did under-achievers. Krug concluded that if the prediction is based on aptitude measures, the EPPS makes a significant contribution toward reducing the residual variance. However, if the

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[3]G. Gary Gebhart and Donald P. Hoyt, "Personality Needs of Under- and Overachieving Freshmen," Journal of Applied Psychology 42 (1958): 128.

prediction is based on past performance, that contribution tends to disappear.[4]

Other studies using the EPPS n Ach scale have had less positive results. In a 1959 study similar to the proposed study, Reed Merrill and Daniel Murphy studied the low achieving (marginal) students in an attempt to find personality factors which would discriminate between the low achieving students who succeed and the low achieving students who fail. After one semester of college work, they selected forty-nine freshmen who were over-achieving (GPA higher than the predicted 1.50) and fifty-two freshmen who were achieving-as-expected (GPA 1.00 or less when they were expected to make 1.50 or less). The researchers compared the two groups on the EPPS variables and found that the achievement variable did not differentiate between the two groups in their sample.[5]

In a similar study, Jerald Bachman (1964) looked at only the n Ach scale of the EPPS to determine its ability to supplement standard tests of academic aptitude in predicting achievement and to discriminate between over-achievers and under-achievers. He limited his study to the n Ach scale because that scale had had the most consistent positive results at that time. Since achievement motivation would presumably have a positive influence upon academic accomplishment,

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[4]Robert E. Krug, "Over- and Underachievement and the Edwards Personal Preference Schedule," Journal of Applied Psychology 43 (1959): 128.

[5]Merrill and Murphy, "Personality Factors and Academic Achievement," p. 210.

Bachman hypothesized that a valid measure of n Ach would be expected to correlate positively with over-achievement and negatively with under-achievement. The correlation between n Ach and Bachman's criteria for achievement (GPA, psychology grade, and SAT) was positive. However, the n Ach scale reached the .05 level of significance only in correlation with the psychology grade, not with the GPA or the SAT score. Bachman concluded that his results offered little support for the use of the EPPS n Ach scale as a supplementary predictor of academic achievement. He also found it to be of little value in differentiating over-achievers and under-achievers.[6]

While most of the early researchers using the EPPS studied only males, the researchers of the 1960's studied both male and female groups. Leonard Goodstein and Alfred Heilbrun (1962) examined the contribution of the EPPS to the prediction of academic achievement over the entire range of scholastic ability in both male and female groups of undergraduate students. They divided the two groups of students into subgroups of low ability, middle ability, and high ability, based on the scores of a sixty-item vocabulary test. They found achievement to be positively correlated with GPA for the total group of males but not for the females. While some of the earlier studies found n Ach to be a significant factor in predicting over-achievement and under-achievement in males, Goodstein and Heilbrun found n Ach to have a significant correlation with

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[6]Jerald G. Bachman, "Prediction of Academic Achievement Using the Edwards Need Achievement Scale," Journal of Applied Psychology 48 (1964): 18.

GPA only in middle ability males.[7]

In 1966 Milton Hakel replicated Goodstein and Heilbrun's study using one hundred two males in an introductory psychology class. He used the EPPS and the Minnesota Scholastic Aptitude Test (MSAT) as predictors, core GPA and quarter GPA as criteria. Core GPA refers to grades obtained in liberal arts core subjects and was chosen to provide a sample of scholastic behavior approximately comparable for all subjects. Quarter GPA was used to give data comparable to that of Goodstein and Heilbrun. All variables were intercorrelated and partial correlations were computed for each of the EPPS scales and the two grade point indices with MSAT scores held constant. Hakel concluded that Goodstein and Heilbrun's results were of limited generality.[8]

In 1962 Lang, Sferra, and Seymour attempted to relate the psychological needs of students, as measured by the EPPS, to their academic achievement.[9] They found the n Ach scale to be positively correlated ($p < .01$) with academic achievement for females but not for males. They concluded that with further research the EPPS, in conjunction with other nonintellectual measures, could be used to identify potential

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[7]Goodstein and Heilbrun, "Prediction of College Achievement from the EPPS at Three Levels," p. 320.

[8]Hakel, "Prediction of College Achievement from the EPPS Using Intellectual Ability," p. 339.

[9]Gerhard Lang, Amedeo G. Sferra and Marjorie Seymour, "Psychological Needs of College Freshmen and Their Academic Achievement," Personnel and Guidance Journal 41 (December 1962): 360.

under-achievers early in their freshman year.

In 1963 Alfred Heilbrun investigated both single and configural scoring of the EPPS for male and female achievers and non-achievers. Students whose grade averages were higher than expected were classified as achievers; students whose grade averages were lower than expected were classified as non-achievers. Heilbrun used the academic records and the EPPS scores of 549 males and 428 females for his study. His data suggested that male achievers were more likely than non-achievers to show a peak EPPS score on Achievement, a high score on Endurance, and a low score on Change. Female achievers were more likely to have a high score on Nurturance than were non-achievers. Heilbrun concluded that multiple-scale interpretation of the EPPS in predicting college achievement holds limited promise. However, he suggested that personality attributes relevant to college achievement differ qualitatively for the male and the female student.[10]

Three other studies of the difference in scores or patterns of scores on the EPPS between male and female counselees were conducted by Clifford Lunneborg and Patricia Lunneborg in 1966, 1967 and 1970. In the 1966 study, the researchers concluded that for college counselees, at least, EPPS scores taken singly are of no predictive value where the

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[10]Alfred B. Heilbrun, Jr., "Configural Interpretation of the Edwards Personal Preference Schedule and the Prediction of Academic Performance," Personnel and Guidance Journal 42 (November 1963): 268.

criterion is cumulative GPA.[11]

After discounting the validity of single EPPS scales as predictors, the 1967 study investigated patterns of EPPS needs that could be associated with academic performance. Lunneborg and Lunneborg found that for males, the highest correlation involving n Ach was High Achievement-High Intraception; for females, High Achievement-Low Abasement and High Achievement-Medium Abasement (negative). Their results indicated that academic achievement appeared to be associated with high needs for Achievement and Intraception and low need for Abasement.[12]

The third study by Patricia Lunneborg in 1970 found twenty-nine two-need patterns occurring frequently in the sample with thirteen of them involving high need for achievement. However, there were no significant findings in regard to the sex of the students. She concluded that personality patterns did not improve prediction from aptitude and achievement variables.[13]

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[11]Patricia W. Lunneborg and Clifford E. Lunneborg, "The Utility of EPPS Scores for Prediction of Academic Achievement among Counseling Clients," Journal of Counseling Psychology 13 (1966): 241.

[12]Clifford E. Lunneborg and Patricia W. Lunneborg, "EPPS Patterns in the Prediction of Academic Achievement," Journal of Counseling Psychology 14 (1967): 390.

[13]Patricia W. Lunneborg, "EPPS Patterns and Academic Achievement in Counseling Clients," Educational and Psychological Measurement 30 (1970): 398.

As a result of the studies cited, the overall predictive validity of the EPPS was denied or questioned by Lunneborg (1970); Lunneborg and Lunneborg (1966 and 1967); Hakel (1966); and Bachman (1964). On the more positive side, the EPPS was supported to some extent by the research of Heilbrun (1963); Goodstein and Heilbrun (1962); Lang, Sferra and Seymour (1962); Merrill and Murphy (1959); Krug (1959); and Gebhart and Hoyt (1958).

The relationships found between personality and academic achievement have varied greatly from one study to the next and even within the same study as a function of sex or of ability levels. These findings suggest that an institution considering the use of a personality measure to predict academic success in college should conduct research on the population of students at that institution to test the validity of the proposed plan.

CHAPTER III

METHODS AND PROCEDURES

This chapter presents the methodological outline for the study. The description of the total population, the criteria used to select the sample, and the procedures for data collection and data analysis are included.

Population

The 1974 fall semester freshman class at Western Kentucky University consisted of 2311 students with an average composite ACT score of 18.4 and an average high school GPA of 2.93. Approximately 250 of these freshmen enrolled in the 090 College Reading Improvement course which is designed to help marginal students improve their vocabularies, literal and interpretive comprehension skills, reading-study skills, study habits, and to develop rate flexibility to handle various types of reading tasks. This course was required for students with a high school GPA of 2.0 or less and a composite ACT score of seventeen or less. The average high school GPA of the students in the Reading classes was 1.9; the average composite ACT score was 12.3. The students used for this study were selected from the Reading classes. Since the Reading course was designed to help marginal students and this study was designed to look at the need achievement scores of

marginal students, the classes provided a source of subjects.

Selection of Sample

The students in the 090 College Reading Improvement course filled out a short questionnaire which asked for their age, sex, marital status, approximate size of their high school and of their graduating class, the number of hours for which the students registered at the beginning of the semester, and their classification (See Appendix A). The Registrar's Office provided a computer print-out of the high school GPA and the composite ACT scores for all freshmen. Each subject selected for this study met the following criteria:

1. Entered Western Kentucky University in the 1974 fall semester as a first semester freshman
2. Registered for twelve or more semester hours
3. Had a composite ACT score of at least thirteen but no more than seventeen
4. Had a high school GPA of at least 1.9 but no more than 2.2

Of the total population, only thirty-four males and eleven females met all the established criteria. The mean age of the subjects was 18.5; the mean composite ACT score was 14.5; the mean high school GPA was 2.06; and the mean number of beginning hours was 15.9. (Appendix B contains a complete profile of the subjects.)

Data Collection

The Edwards Personal Preference Schedule was administered to the students in the Reading classes under standard conditions. In order to get the students to answer the

questions as honestly as possible, they were not told in advance that they were to be part of a research study. Instead, the researcher explained that a thorough knowledge and understanding of their personality needs could be helpful to them in adjusting to their new life at college. The students were told in advance that the results would be interpreted to them. Any student who did not want to take the EPPS was not forced to do so. The inventories were hand-scored by the researcher and group interpretations were held for each of the ten Reading classes.

At the end of the fall semester, the first semester GPAs and quality points for the subjects were obtained from the Registrar's Office. The GPA was recalculated to find the students' actual GPA excluding the Reading grades, which were predominantly high. However, the two hours earned in the College Reading Improvement course were not omitted from the beginning and ending hours.

Null Hypotheses

The null hypotheses to be tested in this study were as follows:

1. Marginal students who have a high n Ach score will not attain significantly higher GPAs on their first semester of college work than marginal students who have a low n Ach score.

2. The beginning hours of marginal students will not differ significantly from their ending hours regardless of their n Ach scores.

Data Analysis

To test the first hypothesis, the subjects were divided into three n Ach groups. Group 1 consisted of those students whose n Ach scores were ten or less; Group 2 consisted of those students whose n Ach scores were at least ten but less than seventeen; and Group 3 consisted of those students whose n Ach scores were seventeen and above. Analyses of variance were computed to analyze the differences between the GPAs of the three n Ach groups of the total sample, the three n Ach groups of males, and the three n Ach groups of females.

To test the second hypothesis, the mean beginning hours and ending hours were computed for the total sample and for both the males and the females in the three n Ach groups. A correlated t-test was used to determine whether or not a significant difference existed between beginning and ending hours within each of the three n Ach groups.

In order to explore other variables which may be related to the academic success of marginal college students, additional analyses were made. To examine the possible relationship between high school class size and n Ach scores and between high school class size and college GPA, the subjects were divided into four groups according to class size. Group 1 consisted of those students whose class size was unknown; Group 2 consisted of those students whose class size was less than one hundred; Group 3 consisted of those students whose class size was at least one hundred but no more than three hundred; and Group 4 consisted of those

students whose class size was over three hundred. Analyses of variance were used to analyze the differences among the four groups on n Ach scores and on GPAs.

To explore possible relationships between college GPA and other EPPS variables, subjects were regrouped according to GPA. Group 1 consisted of students who achieved less than 2.00; Group 2 consisted of students who achieved at least 2.00 but no more than 2.50; and Group 3 consisted of students who achieved above 2.50. Analyses of variance were used to explore for differences among the GPA groups on the scores of each of the fifteen EPPS variables.

As a matter of interest, the total sample was regrouped according to sex and analyses of variance were again used to examine differences between the sex groups on each of the EPPS variables and on GPAs. A percentile comparison of these groups with the college norms provided by Edwards[1] was made.

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[1]Allen L. Edwards, Edwards Personal Preference Schedule Manual, Revised 1959, (New York: The Psychological Corporation, 1959): 14.

CHAPTER IV

RESULTS AND INTERPRETATION OF DATA

The first hypothesis was concerned with possible differences in the first semester GPAs of students who score at different levels on the n Ach scale of the Edwards Personal Preference Schedule. Mean GPAs of the low, medium, and high n Ach groups were 1.94, 2.29 and 2.65, respectively. The analysis of variance used to analyze differences among the three groups on mean GPA revealed no significant difference. Although the thirteen students in the low n Ach group achieved GPAs below 2.0 and the students in the medium and high n Ach groups achieved GPAs above 2.0, the F-ratio between the three groups was 3.06, falling short of the 3.23 required for significance at the .05 level. On the basis of these findings, the first null hypothesis was not rejected (Table 1).

TABLE 1

ANALYSIS OF VARIANCE OF GPA ACROSS n ACH GROUPS

Source of Variance	df	SS	MS	F
Between Groups	2	2.87	1.43	3.06
Within Groups	42	19.64	0.47	
Total	44	22.51		

Using the males only from each n Ach group, an analysis of variance was also computed on the mean GPA of these three subgroups (Table 2). Group 1 (low n Ach) contained nine males with a mean GPA of 1.87; Group 2 (medium n Ach) contained fifteen males with a mean GPA of 2.16; and Group 3 (high n Ach) contained ten males with a mean GPA of 2.65. Like the three n Ach groups containing male and female subjects, the males in the low n Ach group achieved a GPA below 2.0 and the males in the other two groups achieved a GPA above 2.0. Again, the F (2.80) fell short of the 3.31 required for significance at the .05 level (Table 2).

TABLE 2

ANALYSIS OF VARIANCE OF GPA ACROSS MALE n ACH GROUPS

Source of Variance	df	SS	MS	F
Between Groups	2	3.01	1.50	2.80
Within Groups	31	16.62	0.54	
Total	33	19.63		

A t-test was used to examine differences on GPA between low n Ach females and medium n Ach females (no females appeared in the high n Ach group). Group 1 contained four females with a mean GPA of 2.10; Group 2 contained seven females with a mean GPA of 2.58. The t-test revealed no significant difference between the two groups. In contrast to the findings from the n Ach groups of the total sample and of the male sample, the females in both the low and the

medium n Ach groups achieved GPAs above 2.0 (Table 3).

TABLE 3

T-TEST OF GPA BETWEEN FEMALE n ACH GROUPS

Group	N	M	SD	t
Low n Ach	4	2.10	.50	1.62
Medium n Ach	7	2.58	.38	

Although the difference in GPA among any of the n Ach groups is not significant at the .05 level, the results of these analyses suggest that n Ach is a somewhat better predictor for males than for females. Males in this study who scored high on n Ach achieved higher GPAs than males who scored low on the scale. The females, however, tended to achieve satisfactory GPAs even though they scored generally low on n Ach.

In order to test the second hypothesis, the mean beginning hours and mean ending hours for the students in each n Ach group were computed and compared. A correlated t-test was employed to make the comparison, and results indicate that the difference between the beginning hours and ending hours of the low and medium n Ach groups is significant at the .05 level. The difference between the beginning and ending hours of the high n Ach group just missed significance at the .05 level. The second null hypothesis was rejected on the basis of these findings (Table 4).

TABLE 4

CORRELATED T-TEST ON BEGINNING AND ENDING HOURS WITHIN n ACH GROUPS

	M	SD	t
Group 1 (Ach 1-10)			
Beginning Hours	15.85	1.52	2.33*
Ending Hours	14.08	2.66	
Group 2 (Ach 11-16)			
Beginning Hours	15.86	1.42	3.43**
Ending Hours	14.50	1.85	
Group 3 (Ach 17-23)			
Beginning Hours	16.00	1.16	2.18
Ending Hours	14.90	1.66	

*$p < .05$ **$p < .01$

The correlated t-test was again used to analyze differences in the beginning and ending hours of the males in each of the three n Ach groups. The results for the male groups show basically the same trend as for the total sample--the difference between the beginning and ending hours of the low n Ach group is significant at the .05 level. The difference between the beginning hours and ending hours of the medium n Ach group was significant at the .01 level (Table 5).

The correlated t-test was also used to compare for differences in the beginning and ending hours of the females in the n Ach groups. Results for the females in the low and medium n Ach groups (there were no females in the high n Ach group) reveal no significant differences between the beginning and ending hours of either group (Table 6).

Results of the analyses of differences between beginning hours and ending hours indicate that male marginal students at Western Kentucky University whose n Ach score is between one and sixteen tend to drop more hours than male marginal students with n Ach scores of seventeen or more. This relationship between n Ach scores and hours retained was not found for females, however. Again, n Ach scores seem to be more accurate predictors for males than for females.

TABLE 5

CORRELATED T-TEST ON BEGINNING AND ENDING HOURS WITHIN MALE n ACH GROUPS

	M	SD	t
Group 1 (Ach 1-10)			
Beginning Hours	16.11	1.17	2.92
Ending Hours	13.89	1.97	
Group 2 (Ach 11-16)			
Beginning Hours	15.53	1.51	4.00**
Ending Hours	13.93	1.67	
Group 3 (Ach 17-23)			
Beginning Hours	16.00	1.16	2.18
Ending Hours	14.90	1.66	

*$p < .05$ **$p < .01$

TABLE 6

CORRELATED T-TEST ON BEGINNING AND ENDING HOURS WITHIN FEMALE n ACH GROUPS

	M	SD	t
Group 1 (Ach 1-10)			
Beginning Hours	15.25	2.22	.40
Ending Hours	14.50	4.20	
Group 2 (Ach 11-16)			
Beginning Hours	16.57	0.98	.91
Ending Hours	15.71	1.70	

When the subjects were divided into four groups according to high school class size, Group 1 consisted of two students who did not know their class size; Group 2 consisted of four students whose class size was less than one hundred; Group 3 consisted of twenty-two students whose class size was greater than one hundred but less than three hundred; and Group 4 consisted of seventeen students whose class size was over three hundred. Analyses of variance were computed to explore for differences among the groups in GPA and in n Ach scores. No significant difference was found among the groups on either of these two variables. Class size seems to be totally unrelated to scores on n Ach or to first semester GPAs (Table 7).

TABLE 7

ANALYSIS OF VARIANCE OF GPA AND n ACH ACROSS CLASS SIZE GROUPS

	Group 1 Unknown	Group 2 < 100	Group 3 100-300	Group 4 > 300	F-Ratio
GPA	2.57	1.76	2.43	2.14	1.38
n Ach	10.50	12.50	14.32	13.29	0.64

To determine if any of the other fourteen EPPS personality variables (See Appendix A for definitions of the variables) were significantly related to college GPA, the subjects were divided into three groups according to GPA and analyses of variance were computed to examine differences

among the EPPS variable scores. Group 1 consisted of twelve students with GPAs of less than 2.00; Group 2 consisted of fifteen students with GPAs of at least 2.00 but no more than 2.50; and Group 3 consisted of eighteen students with GPAs of 2.51 or above. No significant differences were found among the groups on any of the personality variables. However, some scoring trends seem to be indicated. The students in the lowest GPA group had lower mean scores than the other two groups on six of the fifteen variables: Achievement, Deference, Intraception, Succorance, Abasement, and Endurance. Students in the highest GPA group had a higher mean score than the other groups on the Endurance scale (Table 8).

TABLE 8

ANALYSIS OF VARIANCE OF EPPS VARIABLES
ACROSS GPA GROUPS

	Group 1 0.30-1.99 N=12	Group 2 2.00-2.50 N=15	Group 3 2.51-3.54 N=18	F-Ratio
Ach	11.42	14.13	14.61	2.23
Def	10.42	11.07	10.61	0.21
Ord	10.17	9.93	9.11	0.35
Exh	14.66	14.33	13.89	0.12
Aut	13.75	12.73	11.50	1.25
Aff	16.17	15.93	16.11	0.01
Int	15.25	16.47	16.17	0.31
Suc	10.83	12.87	11.00	1.00
Dom	13.92	10.07	13.61	2.88
Aba	14.33	17.00	17.83	2.93
Nur	16.50	16.93	16.67	0.03
Chg	17.25	17.60	17.33	0.03
End	12.17	12.73	14.56	0.88
Het	19.67	16.47	15.72	1.81
Agg	12.67	11.07	11.28	0.56

Analyses of variance were computed to determine if there was a significant difference between the EPPS variable scores for the males and females used in this study. The mean scores were then compared to the EPPS college norms (1959). Although the mean n Ach score for the male subjects was higher than the mean n Ach score for the female subjects, the percentiles would seem to indicate that this trend is not atypical of college males and females. Of the fifteen manifest personality needs, a significant difference ($p < .05$) was found between the groups on Intraception, Succorance, Dominance, Nurturance, Change, and Heterosexuality. The males differed significantly (at least one standard deviation from the mean) from the norm group on Autonomy, Dominance, Abasement, Nurturance, and Endurance. The females differed significantly from the norm group on Exhibition, Intraception, Succorance, Dominance, Abasement and Nurturance (Table 9).

TABLE 9

ANALYSIS OF VARIANCE OF EPPS VARIABLES
ACROSS SEX GROUPS

	Male N=34	%ile	Female N=11	%ile	F-Ratio
Ach	14.26	40	11.55	42	3.4259
Def	10.56	43	11.18	41	0.4503
Ord	9.79	46	9.28	46	0.1642
Exh	14.68	49	12.91	30	1.4759
Aut	12.53	34	12.45	56	0.0030
Aff	15.53	54	17.73	56	2.5068
Int	15.15	45	18.73	64	7.4550*
Suc	10.62	55	14.55	71	7.8904*
Dom	13.50	24	9.45	17	5.9485*
Aba	16.09	79	18.28	74	2.4124
Nur	15.94	63	19.09	74	4.2167
Chg	16.71	60	19.55	70	4.0943*
End	13.65	61	12.27	51	0.5682
Het	18.74	57	11.73	35	16.0317**
Agg	11.97	46	10.36	53	1.2479

*$p < .05$

An analysis of variance was also used to determine if there was a significant difference between the mean GPA of the males and the mean GPA of the females (Table 10). No significance was found, but it should be noted that while the males had a higher mean n Ach score than the females (see Table 9), their mean GPA was lower than the females' mean GPA.

TABLE 10

ANALYSIS OF VARIANCE OF COLLEGE GPA ACROSS SEX GROUPS

	Male	Female	F-Ratio
College GPA	2.22	2.40	0.5231

CHAPTER V

SUMMARY AND CONCLUSIONS

The primary purpose of this study was to determine the predictive validity of the n Ach scale of the Edwards Personal Preference Schedule for marginal students at Western Kentucky University. Since no significant difference was found between mean GPAs of the three n Ach groups, results of this study do not support the use of the EPPS n Ach scale as a predictor of the marginal student's first semester college GPA. This finding tends to support Merrill and Murphy's study in 1959 and Bachman's study in 1964 that the achievement variable did not differentiate between over-achieving and under-achieving students. The fact that the F was more nearly significant for males than for females in this study seems to support Goodstein and Heilbrun's finding that n Ach is positively correlated with GPA for males but not for females.

The secondary purpose of this study was to determine if the n Ach scale has a significant relationship to the number of hours carried during the marginal student's first semester in college. Results seem to indicate that there is a relationship. For the males in the high n Ach group (there were no females in this group), the difference between the beginning hours and ending hours was insignificant. For the

low and medium n Ach groups, a significant difference was found between beginning hours and ending hours: these students dropped more hours than did the high n Ach group. This finding indicates a positive relationship between hours retained and n Ach. Perhaps worthy of note also is the fact that although students in the high n Ach group carried more hours than the other students, they managed also to achieve a higher mean GPA (although not significantly higher) than the other two groups (Table 11).

TABLE 11

GPA, BEGINNING HOURS AND ENDING HOURS FOR THE THREE n ACH GROUPS

	Group 1 Ach 1-10 (N=13)	Group 2 Ach 11-16 (N=22)	Group 3 Ach 17-23 (N=10)
College GPA	1.94	2.29	2.65
Beginning Hours	15.85	15.86	16.00
Ending Hours	14.08	14.50	14.90

The additional analyses that were computed did not reveal any information of significance. No relationship between n Ach and high school class size was indicated. Also, no relationship was found between the other manifest needs which the EPPS measures and first semester GPA. However, it is interesting to note that the twelve students in the low GPA group had lower mean scores than the other two GPA groups on the Achievement, Deference, Intraception, Succorance,

Abasement and Endurance scales and a higher mean score than the other two groups on the Heterosexuality scale. This finding seems to indicate that the marginal students who failed to achieve a 2.00 GPA are low in some needs which might provide motivation for academic effort--the need to make good grades (Ach), to meet the expectations of others (Def), to analyze motives and feelings (Int), to seek help and encouragement from others (Suc), to complete a task (End), and to feel guilty (Aba). At the same time, their high need for interaction with the opposite sex (Het) suggests that the marginal students who failed to achieve a 2.00 GPA may have focused primarily on activities involving the opposite sex.

Other interesting hypotheses may be formulated from the analysis of the manifest needs and sex. The fact that the females had a rather high need for Succorance and a rather low need for Heterosexuality could help to explain their higher GPAs--they may have sought and received more help with their academic work than did the males and may have been less likely to spend valuable study hours with the opposite sex than the males. The Abasement score for both males and females was above average when compared to college student norms. However, if local EPPS norms were available, they might indicate that Western Kentucky University students tend to score high on the Abasement scale. The EPPS Abasement norm at Western could conceivably be higher than the Abasement norm for all college students, since Western is in the Southern "Bible belt."

In summary, small sample size undoubtedly contributed to the failure to find significance in this study. The researcher's attempt to provide homogeneity in the sample by placing both upper and lower limits on the composite ACT and the high school GPA perhaps unnecessarily limited the size of the sample.

Suggestions for Further Research

Although the results of this study were inconclusive, further research should be conducted on personality variables of marginal students at Western Kentucky University--a need to provide assistance to these students still exists. In addition to testing the relationship between n Ach and GPA, a study such as this should probably focus also on the relationship between need for endurance (n End) and academic success since the highest GPA group had a higher mean score on n End (although not significantly higher, statistically) than the other two groups. The n End scale might provide some insight into the reasons for the difference in hours--the high GPA students carried more hours and also had higher n End scores than the other students.

Based on the findings concerning beginning and ending hours, a follow-up study should perhaps be conducted on the subjects used in this sample to determine if the students in the low and medium n Ach groups continue to have a significant difference in the beginning and ending hours and continue to experience academic difficulty. If so, these students are probably initially undertaking more hours than they are able

to successfully complete and thus waste valuable time on courses which are eventually dropped. If this hypothesis is supported by further research, such students should be advised to register for fewer hours.

As student bodies become increasingly heterogeneous, colleges and universities throughout the United States will need reliable predictors of academic success in order to give early assistance to academically marginal students. The findings of this study indicate that establishment of local norms for the instruments to be used in prediction research would be beneficial in interpreting results on a specific population. In addition to improving the interpretation of research findings, such norms would provide a valuable profile of the student body.

APPENDIX A

QUESTIONNAIRE

1. Name _____ Age _____
   Last First Middle

2. Sex: M F 3. Marital Status: S M D

4. Birthdate _____
   Month Day Year

5. Name of High School _____

6. Location of High School _____

7. Approximate size of your graduating class _____

8. Approximate size of your high school _____

9. Date of graduation from high school (year) _____

10. Classification (circle one):

1st Semester Freshman	1st Semester Junior
2nd Semester Freshman	2nd Semester Junior
1st Semester Sophomore	1st Semester Senior
2nd Semester Sophomore	2nd Semester Senior

11. No. of hours you registered for at registration _____

12. Major _____ Undecided _____

APPENDIX B

PROFILE OF SUBJECTS

TABLE 12

Age	Frequency
17	9
18	29
19	3
20	2
21	1
23	1

TABLE 13

Marital Status	Frequency
Single	43
Married	1
Divorced	1

TABLE 14

Class Size	Frequency
Unknown	2
< 100	4
100 to 300	22
> 300	17

TABLE 15

Composite ACT Score	Frequency
13	11
14	11
15	14
16	7
17	2

TABLE 16

High School GPA	Frequency
1.90	7
2.00	13
2.10	16
2.20	9

TABLE 17

Hours	Beginning Frequency	Ending Frequency
10	0	2
11	0	1
12	2	6
13	1	6
14	3	6
15	6	6
16	18	12
17	12	5
18	3	0
19	0	1

TABLE 18

College GPA	Frequency	College GPA	Frequency
0.30	1	2.30	2
0.64	1	2.33	1
0.75	1	2.42	2
1.19	1	2.50	2
1.30	1	2.54	1
1.45	1	2.58	1
1.50	1	2.60	1
1.54	1	2.61	1
1.66	1	2.64	1
1.86	1	2.70	1
1.88	1	2.71	2
1.90	1	2.75	1
2.00	1	2.85	1
2.08	1	2.92	2
2.12	1	2.93	1
2.14	1	3.07	1
2.18	1	3.30	1
2.20	1	3.33	1
2.25	1	3.42	1
2.28	1	3.50	1

TABLE 19

n Ach Scores*	Frequency
4	1
7	1
8	1
9	3
10	7
11	6
12	2
13	3
14	2
15	4
16	5
17	1
18	1
19	1
20	1
21	2
22	1
23	1

*Range of Possible Scores: 0 to 28

TABLE 20

Personality Variables	Mean Scores*
Achievement	13.60
Deference	10.71
Order	9.67
Exhibition	14.24
Autonomy	12.51
Affiliation	16.07
Intraception	16.02
Succorance	11.58
Dominance	12.51
Abasement	16.62
Nurturance	16.71
Change	17.40
Endurance	13.31
Heterosexuality	17.02
Aggression	11.58

*Range of Possible Scores: 0 to 28

APPENDIX C

MANIFEST NEEDS ASSOCIATED WITH THE FIFTEEN EPPS VARIABLES[1]

1. Achievement (Ach): To do one's best, to be successful, to accomplish tasks requiring skill and effort, to be a recognized authority, to accomplish something of great significance, to do a difficult job well, to solve difficult problems and puzzles, to be able to do things better than others, to write a great novel or play.

2. Deference (Def): To get suggestions from others, to find out what others think, to follow instructions and do what is expected, to praise others, to tell others that they have done a good job, to accept the leadership of others, to read about great men, to conform to custom and avoid the unconventional, to let others make decisions.

3. Order (Ord): To have written work neat and organized, to make plans before starting on a difficult task, to have things organized, to keep things neat and orderly, to make advance plans when taking a trip, to organize details of work, to keep letters and files according to a system, to have meals organized and a definite time for eating, to have things arranged so that they run smoothly without change.

4. Exhibition (Exh): To say witty and clever things, to tell amusing jokes and stories, to talk about personal adventures and experiences, to have others notice and comment upon one's appearance, to say things just to see what effect it will have on others, to talk about personal achievements, to be the center of attention, to use words that others do not know the meaning of, to ask questions others cannot answer.

5. Autonomy (Aut): To be able to come and go as desired, to say what one thinks about things, to be independent of others in making decisions, to feel free to do what one wants, to do things that are unconventional, to avoid situations where one is expected to conform, to do things without regard to what others may think, to criticize those in positions of authority, to avoid responsibilities and obligations.

6. Affiliation (Aff): To be loyal to friends, to participate in friendly groups, to do things for friends, to form new friendships, to make as many friends as possible, to share things with friends, to do things with friends rather than alone, to form strong attachments, to write letters to friends.

7. Intraception (Int): To analyze one's motives and feelings, to observe others, to understand how others feel about problems, to put one's self in another's place, to judge people by why they do things rather than by what they do, to analyze the behavior of others, to analyze the motives of others, to predict how others will act.

8. Succorance (Suc): To have others provide help when in trouble, to seek encouragement from others, to have others be kindly, to have others be sympathetic and understanding about personal problems, to receive a great deal of affection from others, to have others do favors cheerfully, to be helped by others when depressed, to have others feel sorry when one is sick, to have a fuss made over one when hurt.

9. Dominance (Dom): To argue for one's point of view, to be a leader in groups to which one belongs, to be regarded by others as a leader, to be elected or appointed chairman of committees, to make group decisions, to settle arguments and disputes between others, to persuade and influence others to do what one wants, to supervise and direct the actions of others, to tell others how to do their jobs.

10. Abasement (Aba): To feel guilty when one does something wrong, to accept blame when things do not go right, to feel that personal pain and misery suffered does more good than harm, to feel the need for punishment for wrong doing, to feel better when giving in and avoiding a fight than having one's own way, to feel the need for confession of errors, to feel depressed by inability to handle situations, to feel timid in the presence of superiors, to feel inferior to others in most respects.

11. Nurturance (Nur): To help friends when they are in trouble, to assist others less fortunate, to treat others with kindness and sympathy, to forgive others, to do small favors for others, to be generous with others, to sympathize with others who are hurt or sick, to show a great deal of affection toward others, to have others confide in one about personal problems.

12. Change (Chg): To do new and different things, to travel, to meet new people, to experience novelty and change in daily routine, to experiment and try new things, to eat in new and different places, to try new and different jobs, to move about the country and live in different places, to participate in new fads and fashions.

13. Endurance (End): To keep at a job until it is finished, to complete any job undertaken, to work hard at a task, to keep at a puzzle or problem until it is solved, to work at a single job before taking on others, to stay up late working in order to get a job done, to put in long hours of work without distraction, to stick to a problem even though it may seem as if no progress is being made, to avoid being interrupted while at work.

14. Heterosexuality (Het): To go out with members of the opposite sex, to engage in social activities with the opposite sex, to be in love with someone of the opposite sex, to kiss those of the opposite sex, to be regarded as physically attractive by those of the opposite sex, to participate in discussions about sex, to read books and plays involving sex, to listen to or to tell jokes about sex, to become sexually excited.

15. Aggression (Agg): To attack contrary points of view, to tell others what one thinks of them, to criticize others publicly, to make fun of others, to tell others off when disagreeing with them, to get revenge for insults, to become angry, to blame others when things go wrong, to read newspaper accounts of violence.

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[1]Allen L. Edwards, Edwards Personal Preference Schedule Manual, Revised 1959, (New York: The Psychological Corporation, 1959): 11.

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