VARIABLES RELATED TO ACADEMIC PERFORMANCE
OF MINORITY COLLEGE STUDENTS

DISSERTATION

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* * * * *

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This dissertation is dedicated to the memories of Dr. William H. Watson and my father, Joseph W. Clark I who both exemplified the high ideals of continued education and equal accessibility so that all individuals can achieve their highest potential.
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CHAPTER 1

INTRODUCTION

The Ohio State University has been actively involved in the recruitment and retention of minority group students, commencing with Project 100 in 1970. Programs of supportive services have been initiated to enhance the probability of academic success for low income and culturally different students. These groups of Blacks, Spanish surname, native Americans and Appalachian Whites have previously been disproportionately represented in the student bodies of many colleges and universities. Sedlacek, Brooks, and Horowitz (1972) surveyed the large predominantly white universities to determine if black-student admission policies and enrollment had changed since 1969. Many of these institutions are employing a variety of techniques to attract black students. During 1969, however, admissions procedures for entry into special programs for blacks remained traditional-standardized tests, high school grades, class rank. In their 1970 survey Sedlacek, Brooks, and Horowitz found that the median 3 percent of black freshman in 1969 had increased to 4 percent. The use of nontraditional admission criteria, extracurricular activities, interviews, and
recommendations, had increased from 6 percent in 1969 to 29 percent in 1970. The use of open admissions policies had only increased from 10 percent in 1969 to 12 percent in 1970.

In 1969, 48 percent of the schools reported having special programs for black students. In 1970, 52 percent of the schools reported having special programs. Although private schools tend to enroll more blacks, use different criteria to select blacks, and do more research on black admissions than do public institutions, public schools tend to have more special programs for blacks than do private schools. However, when the predominately black four-year colleges are not included, the percentage of blacks at four-year colleges was found to be only 2.6 percent in 1970.

Sedlacek, Brooks, and Mindus again surveyed the admission trends of black freshmen entering large universities in the fall of 1971. Although the questionnaire was similar to that used in the 1970 survey, an additional item dealt with the enrollment of American Indians and Spanish surname Americans. Again the median percentage of black freshmen was 4 percent in 1971. Only 13 percent of the 109 institutions had open admissions. Nearly 60 percent of the schools had special programs for blacks compared with 52 percent in 1970 and 48 percent in 1969.
The primary change in the 1971 survey was the increase of special programs in private schools from 45 percent in 1970 to 67 percent in 1971.

In April, 1973, Sedlacek, Lewis, and Brooks reported an increase to 5 percent of new black freshmen in the fall of 1972. The greatest increase was in the mid-western area from 6 percent in 1969 to 13 percent in 1972. Open admission for all students had increased to 16 percent of the schools. Special programs for blacks decreased from 60 percent in 1971 to 54 percent in 1972. However, special programs for American Indian and Spanish speaking students increased from 8 percent in 1971 to 14 percent in 1972. The researchers summarized their findings by stating that universities are making gradual rather than dramatic progress in admitting more black freshmen. They also recommended further efforts in searching for better methods of selection of black students and providing special assistance for continued progress of minorities.

The Ohio State University has continued to provide special help to minority students through the establishment of the Office of Minority Affairs and the Office of Developmental Education (formerly Special Services Program). Special emphasis in meeting the needs of black students is vital especially on large predominantly white university campuses. While not attempting to provide a
collection of stereotyped labels, the Special Services Program described the following attributes of minority students which require particular attention:

1. Academic potential can be realized only through special assistance.
2. Intensive personal support is needed to assist the student in moving from one social setting to another.
3. Financial assistance is needed to meet educational and living expenses.
4. The students' cultural heritage is inadequately reflected in the curriculum and/or enrollment at the university.
5. The student lives in an area of cultural or geographic isolation.

In order to address itself to these needs, the Office of Developmental Education, University College has provided assistance in areas of personal counseling and academic support. Personal counseling is available from adviser counselors who are professionally experienced graduate students working on terminal degrees in either guidance and counseling or higher education administration. Academic support is provided through a tutorial program, developmental courses, a center for increasing reading and study skills and referral to other cooperating campus agencies.

The supportive services available through the Office of Developmental Education are a major factor in assisting students who are unable to compete academically with
their classmates. Students enrolling in a class usually have a wide range of academic skills. Students who were not planning to go to college may lack the basic college preparatory experience needed for introductory college level coursework. Students, unfamiliar with the short time span in a ten week quarter, may need assistance in meeting the demands of a course syllables. Still other students differ in aptitude for some types of abstract thinking or understanding concepts. Some of these difficulties can be alleviated through the use of academic support services.

STATEMENT OF PROBLEM

To determine the extent to which a supportive program is fulfilling student needs, evaluation is a necessity. Effective program adjustment is possible only with an analysis of the factors related to students' academic performance. Reports on the performance of students enrolled in the Office of Developmental Education are submitted quarterly and summarized yearly. The effectiveness of all aspects of the program; adviser-counselors, peer counselors, tutorial services, and Reading Study Skills Center services; are included in these reports. However, an in-depth study of some of the variables affecting the students' academic performance has never been completed. This study is designed to determine the
relationship of certain variables to academic performance of a group of black first quarter freshmen enrolled at the Ohio State University through the Office of Developmental Education.

**Importance of the Study**

Of major importance is the information which this study will provide to colleges and universities attempting to implement supportive service programs to students on their campuses. With the philosophy of "open admissions" at state supported institutions, students are admitted to colleges and universities with their high school diploma or equivalent; regardless of their previous academic experience. Without some type of supportive help, many of these students will become frustrated in their attempts to complete coursework in which they lack the necessary high school background. To maintain the standards of the college classroom, students must make up this background on their own time. Many college departments provide some assistance through tutoring at additional expense to the student. The large scale availability of free tutoring assistance is rare. This study will provide information to other institutions exploring the feasibility of the supportive service concept. In addition, the results of this study will provide feedback to the Office of Developmental Education at the Ohio State
University for adjustments in the operation of supportive services in future quarters.

**Limitations of the Study**

One major limitation of this study is that the research was limited to Black freshmen students enrolled Autumn Quarter, 1975 at the Ohio State University in the Office of Developmental Education. Therefore, generalizations about the conclusions may not be applicable to all institutions of higher education.

A second limitation relates to the availability of research on the subject. Although recruitment of minority students has been implemented in many institutions of higher learning, studies of variables related to academic performance are limited in number.

A third limitation is the lack of control for possible unidentified intervening variables which could affect the academic performance of the students.

**Definition of Terms Used**

For clarity of discussion, the following terms used in this study will have these meanings:

a) **University College** - A non-degree granting enrollment unit of the Ohio State University for freshmen or transfer students with 45 or less credit hours.

b) **Office of Developmental Education** - A unit in
University College designed to provide supportive services to: 1) Students participating in the Freshmen Foundation Program, and 2) students requesting assistance.

c) Freshman Foundation Program - A special recruitment program sponsored by the Office of Minority Affairs providing financial assistance to qualified minority students. The students are Ohio residents and members of one of the following minority groups: Black, Appalachian White, Spanish surname, American Indian.

d) Project 100 - predecessor to the Freshman Foundation Program. One of the first recruitment programs at Ohio State University designed to give special attention to the needs of minority students.

e) Tutors - The upperclassmen or graduate students employed by the Office of Developmental Education to assist students in the Tutorial Center.

f) Tutorial Center - The method by which tutorial assistance is provided to students through the Office of Developmental Education. Academic assistance is available in the following areas: 1) Mathematics, 2) Natural Sciences, 3) Social Sciences, and 4) English.

**Hypotheses**

This following hypotheses, stated in the null form, were tested:

H₁ Students receiving higher ACT standard scores
will not perform higher academically in related areas than students receiving lower ACT standard scores.

H₂ Students scoring lower on the anxiety scale of the Multiple Affect Adjective Check List will not perform higher academically than students scoring higher on the anxiety scale.

H₃ Students scoring lower on the depression scale of the Multiple Affect Adjective Check List will not perform higher academically than students scoring higher on the depression scale.

H₄ Students scoring lower on the hostility scale of the Multiple Affect Adjective Check List will not perform higher academically than students scoring higher on the hostility scale.

H₅ The sex of the student will not affect academic performance.

H₆ The off campus or on campus residency of the student will not affect academic performance.

H₇ Students receiving tutorial assistance from the Office of Developmental Education will not perform higher academically than students not receiving tutorial assistance.

In addition to the stated hypotheses, the following areas were also investigated regarding the use of the
Developmental Education Tutorial Center:

1) The pattern of student use of the Tutorial Center.
2) The frequency of the students' attendance at the Tutorial Center.
3) The average length of the tutoring sessions.
4) The effect of reported non-tutored study sessions on academic performance.
5) The effect of class attendance on academic performance.
6) The students' use of additional assistance for academic coursework.
7) The students' perception of the Developmental Education Tutorial Center.
8) The students' persistence in seeking tutoring assistance from the Tutorial Center.

**Organization of Study**

The present chapter includes: 1) an introduction to the study, 2) a statement of the problem, 3) the importance of the study, 4) the limitations of the study, and 5) definition of the terms used, and 6) presentation of the research hypotheses.

Chapter II will review relevant literature to this study. For clarification of this presentation, the literature review has been subdivided into areas specifically applicable to this research: 1) special and compensatory
education programs, 2) previous efforts to predict academic performance, 3) the use of tutorial programs and additional research related to academic performance.

Chapter III contains a discussion of the research methodology. Included is a description of the research setting, the development and selection of instruments, the sample population, and the procedures used for data collection.

Chapter IV contains the statistical analysis of the data and a summary of the findings.

Chapter V presents the investigator's summary of the research, conclusions, and recommendations.

The final section of the dissertation contains the bibliography and the appendices exhibiting the instruments used in the study.
CHAPTER II

REVIEW OF RELATED LITERATURE

As stated in Chapter I, this study is concerned with variables affecting academic performance of minority students. This chapter examines the findings of other studies related to the current investigation. The following literature review is divided into three sections; these sections will deal with:

1. Special and Compensatory Education Programs
2. Predictors of Academic Performance
3. Tutorial Programs and Additional Factors Related to Academic Performance

Special and Compensatory Education Programs

Green (1969) reported on the effect of the increasing numbers of black students on major college campuses. In the past, the black students who were able to complete their education at predominantly white institutions were those who had experienced an "abundant" high school curriculum or had received an unusually effective educationally reinforcing home environment. However, due to the efforts by large universities to increase black student enrollees, the number of black students requiring academic assistance in completing their degrees has increased.
Although high school grade point average was determined to be the best predictor of college grade point average, Green states that additional predictive power is apparent in other variables. He maintains that additional variability may rest in characteristics such as motivation, persistence, and self-perception. He also reports that university support programs may also be related to success of minority students.

Green surveyed the previous studies regarding programs for high risk students and found that many of these programs are assisting students in their academic survival in college. He also states that proper tutorial and counseling services can assist disadvantaged students in overcoming their educational deficiencies. Green emphasizes that predictors other than aptitude tests are important because of the inadequate elementary and high school programs experienced by most disadvantaged students. He further states that admitting students who do not meet "normal" admission standards will not necessarily lower the standards of the university. He supports this contention by reporting the achievement and retention of high risk students in many special programs. He expresses hope that the continuation of supportive services will enable minority youth to assume greater leadership within our society.
Louis G. Heath has summarized the basic purpose of Educational Opportunity Program at the Berkely campus of the University of California. The program was initiated to recruit disadvantaged students. These students are provided with financial assistance, tutoring, and counseling. The purpose of E.O.P. is to motivate and assist culturally disadvantaged high school students who have demonstrated intellectual promise. Under the 1960 California Master Plan for Higher Education, 4 percent of students entering and transferring to the University of California are admissible by special provision. This 4 percent are high risk students who then participate in the Educational Opportunity Program. Admission standards are flexible to admit poor but promising students from a cross section of the disadvantaged. Sources of financial assistance include federal grants, loans, private gifts, and special Regents appropriations.

The program has been evaluated by an independent organization, the Southern Educational Foundation. Results have been successful with 70 percent of the participants in good academic standing (2.0 acum or better). The attrition rate is low. Nearly 90 percent of the students return. However, obtaining continued financial support and maintaining the tutorial program have been problematic.
Benjamin McKendall states that curricular changes at the university level to permit the educational dis-advantaged to attend college are useless if admission procedures continue to lack the flexibility to consider the effects of poor education on the lower grade levels. He further advocates that some colleges practice "reverse" discrimination and tokenism in accepting minority group students who are ill prepared to do college work. For disadvantaged students the problems of financial aid and college admission criteria prohibit accessibility to higher education. It has been the practice to give financial aid to the most academically talented not the average or below average student. He states that local compensatory and enrichment programs have been helpful. Most changes in college curricula are for the benefit of the able student. Yet this kind of curricula reform is but another barrier for the disadvantaged student.

In 1970, Astin examined the effects of the college environment on the aspirations, achievement, and attrition rates of freshmen students at the end of an academic year. She specifically investigated the following: 1) educational aspiration, 2) occupational aspiration, 3) academic aptitude and achievement, 4) self-ratings on academic and personality traits and, 5) life objectives. Of the 180 students sampled at the small non-black
liberal arts junior college, she reported the following results: 1) a greater proportion of blacks aspire to postgraduate education than non-blacks, 2) disadvantaged students rated themselves high on drive to achieve, 3) the best predictor of educational outcomes were early achievement and educational aspirations, and 4) cohesive and personal school environments have positive effects on most educational outcomes. Of the students in her random sample, the blacks had higher high school grades, lower SAT scores, and higher attrition rate after one year of college. Students moving from home to the college campus were less likely to return to campus the following year. She recommended programs for the disadvantaged which will enhance the students' self esteem while increasing educational and occupational aspirations.

At the 1971 American Personnel and Guidance Association Convention, Alan Lahn presented a paper describing the results of a college preparatory program implemented at Shippensburg State College. The sample included 40 black and 110 white high risk students admitted for the 1970 Autumn term. The students spent six weeks on campus prior to their college enrollment. Special classes were available in English, speech, humanities, science, and mathematics. The staff consisted of the director, assistant director, an instructional
staff and 10 undergraduate tutor-counselors. The purpose of the pre-college program was to help the students with personal, social and academic adjustment to college life. The Brown-Holtzman Survey of Study Habits and Attitudes was administered at the beginning and the end of the program. The survey indicated that participation in the program had a negative effect on study habits and attitudes. However, it was felt that the program did not result in an actual decline in study habits and attitudes but a more realistic self report of this characteristic.

Heussenstamm and Holpfner (1971) studied the demographic characteristics which differentiate among young people and correlate with their levels of alienation. The experimental scale, developed in a pilot study, reflected Suman's five dimensions of alienation: normlessness, meaninglessness, powerlessness, self-enstranglement, and social isolation. Adolescent groups from five ethnic backgrounds were studied by means of their responses to a demographic questionnaire and the revised experimental instrument. Variables identified as relevant were sex, age, number of hours weekly employment, grade point average, social economic status, transiency, stability of family, parental approval of friends, solidarity with peers, and marital status of parents. It was found that as a group, caucasian males were most
likely to experience alienation than any other ethnic group member; greater working hours resulted in more alienation as a result of rising occupational aspirations compared to work opportunities. In addition, higher grade point average was related to less alienation.

Dunkelberger, Stuart, and Sollie (1974) completed a longitudinal study on youth in six southern states. Data was collected in 1966 on tenth grade students and again in 1968. In 1972 a stratified random sample of the previously examined 1226 young adults was contacted. The study focused on change in educational aspirations from late adolescence to early adulthood. It was found that the selected sample was more strongly oriented toward college and graduate studies four years after high school graduation than prior to their graduation. Urban white women were more oriented toward these goals than were rural white females. Black males and black females from both rural and urban backgrounds were equal in their orientation toward college. In terms of actual attainment, the proportion of those having completed college degrees was very small relative to the proportions who aspired to complete college. Women especially were under attainers as were blacks.

Rempson (1972) described the four past efforts to reduce barriers to minority access to higher education
in New York City: 1) the 1949 National Scholarship Fund for Negro Students, 2) the 1958 National Defense Education Act, 3) the 1964 federal and state legislation to provide pre-college programs to assist blacks and Puerto Ricans prepare for college and 4) the Open Admissions Program in the City University. As a result of various programs instituted, black and Puerto Rican enrollment in city institutions has substantially increased within the past few years. Pre-college programs appear to be succeeding in that a higher percentage of students finish high school, enter and succeed in college. However, these pre-college efforts seem less effective when initiated in college programs. To accelerate progress in higher education for blacks and Puerto Ricans, Rempson suggests the following: 1) increased emphasis on educational and intellectual development during early childhood years, 2) improved counseling during high school for better selection of post secondary educational opportunities, 3) improved counseling and counseling assessment, 4) reduction in faculty-student ratio and faculty load for remedial classes, 5) systematic in service training for teachers and administrators, 6) use of trained tutors, and 7) more educationally and economically integrated student bodies.

Brody and Schenker (1972) reported on a five year
longitudinal study of The College Discovery and Development Program sponsored by the City University of New York. The program is designed to discover and develop the college potential of disadvantaged high school students who would be unlikely to enter college without intensive educational support. Open admissions at City University began in 1970. The College Discovery and Development Program is involved with the identification of ninth grade students to attend one of five centers. In 1969, the ethnic composition of students in the program was 64 percent black, 21 percent Puerto Rican and 15 percent white or oriental. As a result of the program, in 1969, 66 percent of the participants were graduated from high school, class attendance was on the increase, and many of the students were enrolling at City University and private schools.

Lee and West (1974) hypothesized that non-traditional students who take advantage of the Extended Opportunity Programs and Services (EOPS) will perform better academically than those who utilize only financial assistance. The grade point averages of fifty students on academic probation who received full services of EOPS were compared to fifty students on academic probation who received financial assistance but no peer counseling or tutorial services. Data were obtained from midterm and final grade reports for Autumn, 1973 and Spring, 1974.
The average GPA for EOPS participants improved significantly from 1.61 to 2.53. Those who did not have the services did not significantly improve their GPA.

Yates (1973) studied the activities of the Coalition for the Use of Learning Skills (CULS) at the University of Michigan. CULS is an academic support program designed to meet the needs of black and caucasian students. To meet the demands of quality education for black students, universities must be prepared to modify traditional approaches to higher education. The focus of the CULS is to provide unique approaches to solving problems on predominately white campuses. The program is implemented through group experiences in study skills, notetaking, math and science study groups, and career counseling. Study groups were found to be advantageous in that students assisting each other contribute to a cohesive atmosphere and develop a sense of responsibility to each other. However, Yates found that many disadvantaged students are content with "satisficing"; grades are not important since students feel that jobs don't reflect academic knowledge. In addition, disadvantaged students don't seek assistance until a crisis is present. Often, this is too late to provide the most effective assistance.

The objective of these programs is to find disadvantaged students who, with developmental assistance and financial support, can profit from additional education. The students are counseled to help them find academic admission and occupational placement. Hampton advocates an approach that is student-centered due to the different life style of the disadvantaged student. Their methods of valuing, behaving, establishing and working toward goals are different from those methods practiced by the dominant members of society. The obligation to these students should not end with counseling and training; it must also include placement and follow-up.

Hampton states that the identification of capable disadvantaged students is difficult. Students not hopeful of attending college do not perform in high school to their potential. Thus high school grades are not indicative of their capabilities. Additional selection criteria should include recommendations by community members, a behavioral rating approach and, a biographical inventory approach. Behavioral criteria to identify talented students include realism, communication, stubbornness, accessibility, humor, and industry. The self-administered biographical inventory, developed by the Institute for Behavioral Research in Creativity, consists of 300 multiple choice items.
In discussing programming for the disadvantaged student, Hampton stresses the need for appropriate counseling to assist students in discovering themselves before realizing their own potential. The most common approach taken by colleges and universities in providing subject matter remediation is through developmental course work and tutorial services. Tutoring, generally on a one-to-three basis, is devoted to helping students with their ongoing course work during their freshman year. Common deficiencies among the disadvantaged include: 1) deficiencies in language arts and communication skills, 2) poor motivation, 3) poor learning skills, 4) lack of exposure to traditional forms in the arts and humanities, and 5) lack of opportunity to demonstrate academic potential.

Williams (1975) examined the growth of compensatory education programs in a select group of public and private four-year institutions in Ohio during 1969-70 and 1973-74. An inventory was administered to representatives from eleven private and eleven public institutions. The inventory included questions concerning: program rationale and objectives, recruitment and selection of students, program implementation (instructional methods, academic assistance, financial aid, counseling services, and physical facilities), faculty, and evaluation. Williams
concluded that the most important objective of these institutions was to provide educational support for persons who were socially, economically, emotionally, and academically deficient. Additionally, efforts were reported in fostering positive attitudes within disadvantaged students about education, self, and their potentials for success. In general, private institutions in Ohio did not actively support recruitment of disadvantaged students or widespread use of special instructional methods.

Among his recommendations, Williams includes: 1) the continuous development of effective compensatory education programs in both public and private institutions, 2) comprehensive curriculum development, 3) instruction to accommodate individual differences, 4) more effective use of instructional resources, and 5) training to prepare instructors, counselors, and administrators to work with disadvantaged students.

**Predicting Academic Performance**

Berry (1972) analyzed selected characteristics of 3,385 high school graduates who submitted ACT profile reports to Grambling College, a black school in Grambling, Louisiana. A questionnaire was administered to 1,059 graduates who did not attend the school. The non-attend-dants were divided into four groups: 1) attendants at other black or white colleges, 2) vocational school
trainess, 3) non-college attendants and 4) non-respondents. He found that performance on the ACT subtests and composite were below the national average. Lowest performance was in the areas of natural science and mathematics. Although levels of aspiration were high, these black seniors were unrealistic in their educational major choice.

Pfeifer and Sedlacek (1970) studied the differential validity for black and white students of academic predictors used at the University of Maryland. High school grades, verbal and mathematics scores on the SAT, and the Predictive Index Equation were examined separately and collectively by multiple regression analysis and were categorized by race and sex. It was found that the Predictive Index Equation predicted as well for black students as for white. The SAT scores correlated with the end of the year grade point average as highly for whites as for blacks. High school grades were not a valid predictor of end of the year performance for black males.

Wilson (1970) reported on the effects of special tutoring and counseling on a group of students attending Southern State College in Magnolia, Arkansas. Eighty-nine black freshmen were randomly divided into an experimental or control group. The experimental group received special tutoring and counseling for the entire quarter. Measures used were: college grade point average, value
changes measured by pre-post scores on Allport, Vernon, and Lindsey "Study of Values," and the number of subjects who were dropouts or on academic probation at the end of the study. Wilson found no difference in grade point average, value changes, or student drop out rate or number of students on academic probation.

The tutors provided assistance in Math, English, Natural Sciences, and Social Sciences. Students sought assistance with little regard to who was tutoring. There was no obvious difference between the use of black or white tutors or male or female tutors.

Students with ACT composite scores of 14 or above seemed to benefit most from the program; students with composite scores of 11-13 seemed to receive negative results; those with composite scores of 1-10 received little if any benefit.

Hall (1971) tested three hypotheses concerning the discrepancy between high Negro aspiration and low Negro achievement. She investigated the academic aptitude, the motivation, and the social desirability of certain aspirations for 193 white and 66 Negro students enrolled at a Chicago junior college. She found that the Negro students scored significantly lower in aptitude and academic achievement than the white students. However, there was no significant racial or social class differences on any
of the motivational measures. In addition, there were no racial differences on the social desirability scale. She concluded that social desirability is not related to school interest or educational aspiration.

Spaights (1970) edited a group of symposium papers presented at the American Personnel and Guidance Association Convention. John F. Schesta, Assistant Director of Experimental Programs in Higher Education, University of Wisconsin, summarized the necessary institutional components for an Educational Opportunity Program. He advocated a structured learning experience. He also expressed the need for student assessment variables including: 1) past experience, 2) individual skill level, and 3) environmental influence. He also emphasized the need for supervision of learning and the availability of instructional materials. The instructional support unit should provide four activities: 1) tutoring - individual attention to supplement academic instruction, 2) curricular and instructional innovation, 3) research and evaluation, and 4) administration. Research should include evaluation of skill development, curricular innovation, and student, faculty, and tutor perceptions of the program.

Ikeda, Rich, and Wolfe (1971) studied the effects of racial status, socioeconomic status' and measured ability upon the academic performance of students in a
liberal arts college. Academic performance in terms of cumulative and semester grade point averages among 95 black and 263 white students were reported for entering classes of 1964, 1965, and 1966 at Oberlin College. It was found that grades among black students were not dependent on socioeconomic status or mental ability to a significant extent. However, there was some relationship between these two characteristics and grades for whites. When socioeconomic status and mental ability are controlled lower grades were reported for blacks than for whites. However, later semester grades for blacks began to reflect their tested potential.

DiCesare, Sedlacek, and Brooks (1972) explored the variables affecting black student attrition at the University of Maryland. Specifically, the purpose of the study was to explore the characteristics of black returning students compared to those not returning on demographic and attitudinal variables. The blacks who returned to their studies had more self-confidence and higher expectations, feel that the university should influence social conditions, and perceive more racism at the university. They are more likely to live on campus and make use of its facilities than do nonreturning blacks. It was suggested that blacks who stay in school have a strong self-concept and take a more realistic view of the
university and adapt to it to achieve their own goals. Self-concept was an important variable in the success of black students at the University of Maryland using grades as a criterion. Successful black students tend to have high aspirations and feel that they have control over their lives.

The direction of research has moved into the area of socioeconomic and nonintellectual variables as predictors of collegiate performance and attrition. Sedlacek and Brooks (1972) examined intellectual predictors (standardized tests and high school grades) and nonintellectual predictors (attitudes and personality) of success for culturally different students in special programs at the University of Maryland. The following predictors of first semester grade point average were studied for 90 black students: Scholastic Aptitude Test, high school grade point, sex, father and mother's occupation, income, credit hours, state residency, Internal-External Control, Holland's Vocational Preference Inventory, and California Personality Inventory. SAT and high school grades were not significant predictors of college grade point average. Several nonintellectual factors gave reasonable predictors of freshmen grades. The researchers stated that a society and educational community which is culturally and racially pluralistic must provide
for diversity in decision making.

Farver, Sedlacek, and Brooks (1973) compared predictive variables of freshmen, sophomore, junior, and senior year grades by sex for black and white students entering College Park, Maryland in 1968 and 1969. Predictors were verbal and math scores on the SAT and high school grade point average. Different patterns of prediction for different race and sex subgroups emerged. High school grade point average was less useful in predicting grades beyond the freshman year. It was particularly poor for black males. Performance of white females was most predictable.

Additional variables seem to operate for black males in an educational setting. One possible explanation is that the social reinforcement system for black males is more random and less consistent than for whites. Hence, it is likely that black males respond in a less direct and consistent manner to stimuli and reinforcement in an educational setting. For black males, internal-external control seems to predict grades most accurately.

Spuck (1969) reported on the Program of Special Directed Studies at the Claremont Center for Educational Opportunity in California. Participants are those with intellectual ability whose academic achievement, as indicated by traditional measures, is inadequate for
admission to selective colleges. These students are prepared for a standard degree program through supervised college courses, special services, and individual tutoring. The purpose of the study was to expand the concept of success to include grade point average, student self-evaluation and evaluation of students by faculty. Forty subjects were compared with other students in terms of chance for college success. At the end of the program, of students entering the fall semester of 1968, 55 percent had transferred to regular student status by fall, 1969. Both the instructor and student evaluations were optimistic and positive. Instructors indicated that the students had a better than average chance of success although grade point average was a bit lower than average.

Szabo and Feldhusen (1970) assessed the relative effects of individual learner characteristics on the prediction of academic success in a traditional course and an independent study course in science. Personality, intellectual variables, and biographical data were used to predict achievement for individual students. There were 315 subjects enrolled in the independent study course and 315 subjects enrolled in the traditional course. The independent study course consisted of an audio-tutorial system. The independently scheduled but structured system included laboratory and learning sessions, audio tape
tutorial presentations, emphasis on personal student instructor contact, and oral and written quizzes. Results indicated that for the high achievement subgroup, math reasoning skills and science achievement were significantly related to success in the audio tutorial course. In the traditional course, verbal aptitude and math computation skills were significantly related to success.

Ellison, Murray, and Fox (1973) studied the effectiveness of biographical inventory data as a predictor of college performance among the disadvantaged. They were concerned that current college entrance procedures provide less than satisfactory attention to nonintellectual predictors of success. The subjects were 1,640 students from six universities (three Eastern, one predominantly black, and two Mid Western). Of the subjects, 982 were in special admissions programs, 554 were in regular programs, and 104 students attended the predominantly black institution. The Alpha II form of the Biographical Inventory was administered. Alpha II consists of 300 items covering: attitudes, interests, achievements, study habits, home and family characteristics, and self-description. Results indicated that biographical data were equally effective or slightly superior to high school performance measures in predicting college grade point average. There was no difference in results for black
and white students. It was recommended that biographical
data supplement current college admission procedures,
placement and counseling.

Tucker (1973) selected from a battery of 48 pre-
dictor variables those yielding the optimum estimate of
college grade point average at a Southern black liberal
arts college for men. Variables included measures of
scholastic aptitude, reading ability, study habits,
personality, and sociological characteristics. Results
indicate that academic success is related to high academic
esteem, writing and math ability. It was also found that
students receiving financial assistance were more con-
cerned with high performance than students who feel no
financial strain.

Beasley and Sease (1974) expressed concern with the
administrative difficulty in identifying qualified
students from minority backgrounds who can succeed
academically. Disagreement has developed between adminis-
trators and recruiters as to criteria for selection to
colleges and universities. New dimensions are being
sought to assist high school counselors, admissions
officers and recruiters in identifying qualified black
students. Alternative predictors of academic success for
blacks should include non-intellectual factors such as:
self concept, educational expectations, adaptability to
the institution, motivation, support of family and peers, remedial university resources, personal maturity and leadership potentials of the student. Beasley and Sease determined that biographical data from the Student Profile Section of the ACT could be used as a non-intellective predictor of academic success for black university students. The subjects were 86 black males and 90 black females enrolled in the Educational Opportunities Program at the University of Colorado. The program provides supportive services in areas of financial aid, housing, tutoring, counseling, and study skills.

Of 122 independent biographical variables in the SPS, fourteen correlated significantly with first semester grade point average and cumulative grade point average. These variables included: employment while attending school, extra curricular activities, expected extra-curricular activities in college, high school accomplishments, need for assistance in reading and study skills, and verbal expression. The data confirmed previous studies concluding that ACT has predictive validity for black students. The five subscores of the ACT correlated with the criterion variables supporting the position that as a standard predictor of academic success, the ACT predicts as well for black students as for other populations.
Tutorial Programs and Additional Factors Related to Academic Performance

Little and Walker (1968) studied university tutor-student relationships in small groups and the effect on academic progress. The students indicated on a seven-point scale ranging from very satisfactorily to very unsatisfactorily how they felt they were progressing in their tutored courses. They also gave the average hours outside formal class periods spent in studying for the tutored course. The general factor of likeableness of tutors was found to be significantly related to academic performance. However, other factors of success, personal involvement, and control in the tutor relationship were not related to performance. For the sample used in the investigation, a "good" relationship was independent of feelings of satisfaction with academic progress.

Kaye (1968) described the College Discovery and Development Program in high school centers in New York City. Tutors, recruited from City University of New York, had a positive effect on disadvantaged high school students' academic achievement. The students' attitude and self-esteem also improved. Tutors were selected on the basis of faculty recommendation. Logs kept of all sessions showed that mathematics courses were most requested for tutoring; languages, sciences and English
followed in that order. It was recommended that tutors be selected on the basis of rigorous criteria and participate in an orientation and monthly meetings.

The Isgars (1968) described the summer training institute for directors and staff of tutorial projects. Thirty middle class college students participated in the Detroit leadership training program. Training included field work, seminars, community living, and intensive personal and group interaction experiences. The goal is to develop tutors capable of social involvement, personal growth and understanding.

Taylor, Cartwright, and Hanson (1970) examined the effects of a tutorial program on grades and attrition of freshmen engineering students at the Institute of Technology, University of Minnesota. The program included a mathematics and English tutorial room plus a general study room. When the tutored students were compared with a random sample of students from the lower half of the 1966 entering freshmen class, a significantly higher percentage of tutored students (51-43 percent) were above a 2.0 after one year. A significantly lower percentage (14-35 percent) of tutored students withdrew when compared with the random sample. The researchers concluded that one of the most positive effects of tutoring seemed to be the improvement observed in the cumulative grades of the
tutored students. They suggested that helping a student improve his study skills in one area affects his study in other courses. Tutoring in one subject area might also allow a student to spend more time on other courses. Another explanation may be that paying attention to a student improves his attitude toward studying. The decreased attrition rate of tutored students favored continuation of the program. Students seemed to respond to tutoring by remaining in school longer thus increasing their potential for success. It was felt that this approach may personalize the students' college experience and decrease student dissatisfaction by preventing problems rather than attempting to cope with problems after the fact.

Benz (1970) found no significant improvement in grades of low achieving college freshmen following instruction by academically successful students trained to teach study skills. The student instructors were trained in twelve one hour sessions. The tutors assisted students for one term in elementary principles of learning, note-taking, theme writing, time scheduling, reading skills, and student-professor relationships. Recommendations for additional research included: 1) determining if certain content in a study skills program is important to students with certain characteristics, 2) determining
how study skills programs can be combined with reduced student credit loads and tutorial help, 3) determining the long range effect of longitudinal assistance.

Menges, Marx, and Trumpeter (1972) assessed the effectiveness of a program providing tutorial assistance to high risk students in a psychology course beyond the introductory level. During the 1970 fall term, teaching assistants were assigned to tutor students in three sections of the course with the highest enrollment of special students. The evaluation included three areas: 1) training of the teaching assistants, 2) documentation of student contact, and 3) analysis of the effect on student achievement.

The teaching assistants were selected on the basis of academic record, prior related teaching activities, personality characteristics, and expressed interest in teaching high risk students. The weekly training and evaluation of the teaching assistants included test-taking skills, evaluating tape recordings of tutorial sessions, reviewing study guides and quizzes, and discussing methods to increase student attendance and motivation. Resource materials appropriate for instructing minority students were available. Weekly logs were submitted summarizing the number of students given assistance, the content of the tutorial sessions, tutorial methods used, and the
problems encountered.

The teaching assistants had no input in final student performance in order to objectify evaluation and to encourage free interaction between students and tutors. It was found that students who had at least eight contacts with a tutor earned higher grades, independent of ability test scores and of grade point average.

Some problems were apparent in that: 1) students viewed the tutoring as a source of crisis aid rather than continual assistance, 2) low attendance resulted in tutor disenchantment, and 3) more instruction was needed for tutors dealing with students whose socioeconomic and cultural backgrounds differ from their own. However, the researchers concluded that the results were sufficiently suggestive to recommend continued experimentation with similar programs.

Maughan (1971) studied the effects of counseling and tutoring on reading achievement, study skills, and personal adjustment within the context of a college reading and study skills program. For all students, tutoring was statistically significant in increasing the speed of reading and the quality of study skills.

Alexander (1971) studied the effects of communication style and level of student dogmatism upon the academic achievement and interpersonal relationship objectives of
effective tutoring. Two aspects of student preference to maintain a continuing tutorial relationship were measured: task attraction and interpersonal attraction. Task attraction was the student's perception of the tutors' success in generating interest and enthusiasm in content material. Interpersonal attraction was the student's satisfaction with tutorial outcomes. Tutors assisted 71 subjects in one-way communication (information and direction giving) or two way communication styles (questioning and clarifying). Findings favored the two way style of communication for synthesis learning and interpersonal attraction for both high and low dogmatic students. The researcher recommended that non verbal communication of tutors should be studied.

Wright (1971) studied the effects of upperclassmen tutoring 799 unsuccessful freshmen at Northeast Missouri State College in Kirksville, Missouri. Students predicted lowest in achievement profited less or did not take advantage of the tutoring. The average students participated the most in the program and received the most benefit. The number of freshmen on probation decreased as a result of the tutoring.

Cohen (1971) described the formation of the Active-Passive Inventory based on Drabik's professor-student relations inventory. Rokeach's Dogmatism Scale and
Rosenberg's Self-Esteem Scale were administered to 203 student teachers. It was found that for closed minded individuals characterized by low self-esteem, college courses which rely on student activism may create personal problems through disregard for the personality needs of the individual.

McDaniel (1971) described the services of an Academic Enrichment and Learning Skills Center at Indiana State University. Students in the lowest 30th percentile of their high school graduating class registered in the non-credit courses during Spring and Summer semesters. Emphasis was on skill development in reading, studying, testing and writing skills and tutorial services. Academic performance of all students improved after the two terms.

Biskin (1971) studied the tutorial and counseling support services through the Center for Urban Affairs and Equal Opportunity at Michigan State University. Of the tutored students, 82 responded to an attitude survey, described demographic characteristics perception of self and the university and expectations of tutoring. The majority of the students believed they had received assistance from the tutorial program. On the average, the students made substantial gains in academic achievement.

Tutors met with the students an average of one and one half hours two times per week.
The students were from average size families with annual incomes less than $10,000; 97 percent of the students were black. Of the respondents, 58 percent believed that minority students were disadvantaged; 45.9 percent had negative perceptions of the university; 32 percent had positive perceptions; 33 percent felt that disgust and alienation caused student dropout; 39 percent stated that cultural and racial differences had no effect on their acceptance of tutoring; 1 percent said it had a great effect.

Froman (1971) evaluated the effects of peer tutoring and counseling on the academic achievement of 104 high risk college students.

Those students who received tutoring and positive reinforcement earned higher weekly quiz grades than students in other groups. However, there was no difference in final grades.

Carman (1973) investigated the results of three treatments of freshmen enrolled in a remedial math course at Santa Barbara City College, California. The different groups 1) met weekly to study programmed materials, 2) met weekly in small tutoring groups alternating with programmed materials, 3) met weekly in only tutoring sessions. Although course grades and total grade point averages did not differ significantly, fewer students in
the tutored group withdrew from the course. These students also showed a more positive attitude toward all their courses. This pattern continued two years after the tutoring experience.

Reed (1974) views tutoring programs as among the most successful of programs designed to provide academic support in post secondary institutions for students with weak formal education backgrounds. He described the peer tutoring as beneficial to both tutor and tutee. Peer tutors increase their own self-esteem and reinforce their own knowledge through helping others. The tutors also serve as successful role models to other students.

During 1972-73, 78 institutions responded to a questionnaire. Most programs expressed financial concerns as the biggest obstacle. Systematic evaluation of these programs was rare. However, most institutions felt that student retention had increased. Tutors were selected on basis of faculty recommendation and received some training. Except for Spanish-speaking students, the tutor's knowledge of subject matter and the ability to relate to the tutee were more important than ethnic congruency between tutors and tutees.

MacDougall (1974) studied the tutorial program at Southwestern College during the Spring term, 1974. Evaluation by 351 tutored students included the students'
perception of the services. The average weekly tutoring per student was four hours per week. Approximately 26 percent of the students were tutored 5 to 10 times during the term; 73 percent of the students were tutored less than 4 times. Students evaluated the tutors as high on accessibility, friendliness, interest, and knowledge of subject area. Students experienced higher grades in all tutored courses except math.

Taylor (1970) examined the effects of homogeneous housing in residence halls and tutoring on the achievement of college freshmen. The cumulative achievement was higher for the 105 black students experiencing homogeneous housing and tutoring than for the randomly selected 491 black students not living in residence halls.

Stegman (1969) studied various activities to retain dropout prone college students at Southwest Missouri State College. From the 1968 freshmen class, 140 potential dropouts were divided into control and experimental groups. The 70 students in the experimental group were housed in special residence halls with graduate research assistants. Special activities to prevent withdrawal included academic advisement and tutoring, personal guidance, and social and economic assistance. Higher retention and grade point averages were reported for the experimental group than the control group.
Summary

This chapter has reviewed past efforts to assist disadvantaged students through special programs. Special emphasis was on studies concerned with predicting academic performance, tutorial programs, and other studies relating various factors to academic performance of minority students.

In general, special and compensatory education programs are hindered by a lack of financial support. It was reported that academic performance can be predicted from the students' past educational experience, self-concept, the students' sense of control over their lives, and biographical data. In addition, the use of tutors can: 1) increase the students' sense of self-esteem, 2) increase grade point average, 3) decrease student attrition, and 4) personalize the academic experience.

The following chapter contains the methodology, research setting, instrument development, and data collection procedures of this investigation.
CHAPTER III

METHODOLOGY

The purpose of this study was to determine the effect of certain variables on the academic performance of a group of first quarter minority students at the Ohio State University. The methodology used in the study is described in this chapter. This chapter is divided into three sections: the research setting, development and selection of instruments, population and data collection procedures.

Research Setting

The Office of Developmental Education, University College, The Ohio State University was the setting for the study. The program, operating since 1972, is designed to meet the educational goals of students requesting assistance. The office is headed by an associate dean responsible for overall planning and coordination of the program on the Columbus and regional campuses. In addition, a program coordinator, coordinator for counseling services, and coordinator for the Reading/Study Skills Center supervise the operation of all services on the Columbus campus. An organizational diagram is included in Appendix A.
The majority of students participating in the program are those selected by the Office of Minority Affairs as participants in the Freshman Foundation Program. These students receive financial assistance based on their economic need. Freshman Foundation participants are members of the three major minority groups in Ohio: Black, Appalachian White, and Spanish surname. Assisting the Developmental Education administrative staff are seven adviser-counselors, two reading/study skills specialists, twenty peer counselors, and approximately thirty five tutors working directly with students in assisting them in meeting their personal, social, and academic needs. In addition to the 400 Freshmen Foundation students, other students enroll in Developmental Education through means of self-referral or referral by Ohio State University staff and faculty. The total enrollment in the program is approximately 800 students. Students remain in the Developmental Education program from one to two years or until they meet the criteria to transfer to a degree-granting college at the university.

Tutorial services are available through referral to the Developmental Education Tutorial Center. Tutoring is available in all the courses generally taken by freshmen and sophomore students.

Academic assistance is available in the following
areas: mathematics, natural sciences, social sciences, and English. A detailed description of the operation of the Tutorial Center is presented in Appendix B.

Tutors are selected for an entire academic year. Selection criteria include: completion of academic coursework related to tutored courses, faculty recommendation, experiences related to tutoring, and an interview by the program coordinator. During the interview by the coordinator, discussion centers on working with disadvantaged students. The tutors are encouraged to communicate with instructors about the progress of students.

**Development and Selection of Instruments**

The instruments used in this study included: the American College Test, the Multiple Affect Adjective Checklist, and the Tutoring Survey.

The American College Test standard scores for English, Mathematics, Social Sciences, Natural Sciences, and Composite were obtained for each participant. For each of the four academic tests, the number of correct responses is the raw score. The raw scores are then converted to standard scores. The range of standard scores for each part of the test is as follows: English Usage, 1-33; Mathematics Usage, 1-36; Social Science Reading, 1-34; Natural Science Reading, 1-35; Composite, 1-33. The mean Composite score for college-bound high school students is
approximately 19. The standard error of measurement for each of the subtest scores is approximately 2; for the Composite score it is approximately 1.

The 1975-76 edition of the ACT Manual reports the appropriateness of ACT assessment for students from educationally disadvantaged backgrounds. Essentially the ACT is as predictive of college grades for minority or disadvantaged students as for middle-class white students. The test scores may be lower for disadvantaged students since the tests measure the current status of students' educational development and academic ability. The manual refers to the need for colleges to identify students with poor educational preparation so that assistance can be provided to overcome the effects of initial educational disadvantages. It is further recommended that more minority students should be selected than indicated by test scores to assure a fair selection of potentially successful students.

The Multiple Affect Adjective Check List (MAACL) is designed to provide valid measures of three relative negative affects: anxiety, depression, and hostility. The self-administered instrument contains 132 adjectives, alphabetically arranged in three columns on one side of a single sheet. For the "Today" form, subjects mark the words which describe how they feel now-today. On the "In
General" form, used in this research, the subjects indicated the adjectives which describe how they generally feel. Low scores on the scales indicate low feelings of anxiety, depression, or hostility.

Like all self report instruments, the MAACL is subject to response sets. In addition, subjects vary greatly in number of words actually checked. The three affect scores are highly intercorrelated. It is not known if this is a result of a lack of discriminant validity or if there are true intercorrelations among anxiety, depression, and hostility. The split-half reliability of the three MAACL scales is high when the items are divided by the odd-even method. The authors, Zuckerman and Lubin, recommend using the inventory as a research tool rather than for diagnostic purposes.

The third instrument used in this study was developed during Winter, 1975. At the end of that quarter, twenty-two students requesting the services of the Developmental Education Tutorial Center completed the questionnaire. As a result of the pre-test, the questionnaire for the Autumn Quarter study was revised. The revised questionnaire is in Appendix C.

**Population and Data Collection Procedures**

The sample for this study consisted of 132 minority first quarter freshmen enrolled in Developmental
Education, University College during Autumn Quarter, 1975.

Developmental Education Students enrolled in the University College Freshmen Survey Course were contacted during the ninth week of the quarter. It was felt that by the ninth week of the quarter, the students would have had an opportunity to use the services of the Tutorial Center. Additionally, the responses of the students would not be influenced by their Autumn Quarter grades. Of the 230 students contacted, 132 volunteered to participate in the study and returned usable questionnaires. Both the Tutor Survey questionnaire and the MAACL were administered during a regular class session of the University Survey Course. The other information pertinent to the study (ACT scores, residency, and final Autumn Quarter grades) was obtained with the students' permission and the cooperation of the University College administrative staff.

In this chapter, a description of the research setting, the development and selection of instruments, and the population and data collection procedures has been given. Chapter IV will present the findings.
CHAPTER IV

PRESENTATION OF THE FINDINGS

This chapter presents an analysis of the findings of the study. There are two major sections. The first section describes the rationale for the statistical tests used in the data analysis. The second section examines each hypotheses and the specific statistical analysis. Other descriptive data relevant to the study is included.

Statistical Tests

The purpose of the study was to examine the effect of certain variables on the academic performance of 132 black freshmen enrolled in the Developmental Education Program, University College, the Ohio State University.

For each hypothesis, frequency distributions were obtained to provide a general description of the data and to determine the appropriateness of other statistical tests. The Pearson product-moment coefficient of correlation or Chi Square was obtained for variables in the major hypotheses and for other descriptive data relevant to the study. Multiple regression analysis was also attempted for variables of specific numeric quality. However, there was not enough variability of the criterion
variable, grade point average, to provide for the use of multiple regression analysis.

**Hypotheses and Analysis of the Data**

In this section, for each null hypothesis tested, the statistical tests and the results are presented.

**H₁** Students receiving higher ACT standard scores will not perform higher academically in related areas than students receiving lower ACT standard scores. The ACT standard scores and the grades in related subject areas for the students are in the Appendices D through M.

The relationship of ACT standard scores to grades in related subject areas is summarized in Table 1. Pearson Correlation coefficients were computed for each subject area and ACT standard score. For grades received in Mathematics, there was a significant relationship to ACT Mathematics standard scores (P < .001). For this relationship, the correlation is +.45. For grades received in Social Sciences, there was a significant relationship to ACT Social Science standard scores (P < .001). The correlation is +.59. The correlation between ACT Natural Science standard scores and grades received in Natural Science courses is +.38. The correlation between ACT Composite standard scores and final grade point average is +.48. As a result of this analysis the null hypothesis is not accepted. Except for grades in English,
TABLE 1

RELATIONSHIP OF ACT STANDARD SCORES TO GRADES IN RELATED SUBJECT AREAS

<table>
<thead>
<tr>
<th></th>
<th>Grades</th>
<th>Pearson Correlation Coefficients</th>
<th>GPA</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>English</td>
<td>Grades Math</td>
<td>Social Sciences</td>
</tr>
<tr>
<td>ACT English</td>
<td>0.1441</td>
<td>0.3261</td>
<td>0.4668</td>
</tr>
<tr>
<td></td>
<td>(47)</td>
<td>(81)</td>
<td>(70)</td>
</tr>
<tr>
<td></td>
<td>P&gt;.001</td>
<td>P=.001</td>
<td>P=.001</td>
</tr>
<tr>
<td>ACT Math</td>
<td>-0.1469</td>
<td>0.4547</td>
<td>0.4705</td>
</tr>
<tr>
<td></td>
<td>(47)</td>
<td>(81)</td>
<td>(70)</td>
</tr>
<tr>
<td></td>
<td>P&gt;.001</td>
<td>P=.001</td>
<td>P=.001</td>
</tr>
<tr>
<td>ACT Social Sciences</td>
<td>-0.1235</td>
<td>0.2860</td>
<td>0.5935</td>
</tr>
<tr>
<td></td>
<td>(47)</td>
<td>(81)</td>
<td>(70)</td>
</tr>
<tr>
<td></td>
<td>P&gt;.001</td>
<td>P&gt;.001</td>
<td>P=.001</td>
</tr>
<tr>
<td>ACT Natural Sciences</td>
<td>-0.0377</td>
<td>0.1540</td>
<td>0.3988</td>
</tr>
<tr>
<td></td>
<td>(47)</td>
<td>(81)</td>
<td>(70)</td>
</tr>
<tr>
<td></td>
<td>P&gt;.001</td>
<td>P&gt;.001</td>
<td>P=.001</td>
</tr>
<tr>
<td>ACT Composite</td>
<td>-0.0714</td>
<td>0.4146</td>
<td>0.5737</td>
</tr>
<tr>
<td></td>
<td>(47)</td>
<td>(81)</td>
<td>(70)</td>
</tr>
<tr>
<td></td>
<td>P&gt;.001</td>
<td>P=.001</td>
<td>P=.001</td>
</tr>
</tbody>
</table>
students receiving higher ACT standard scores will tend to perform higher academically in related areas than students receiving lower ACT standard scores.

In addition to the stated hypothesis, it is interesting to note that none of the ACT subscores and composite scores are significantly related \( (P > .001) \) to students' grades in English. However, ACT scores in English and Mathematics and ACT composite scores are related to student performance in areas of Mathematics, Social Sciences, Natural Sciences and final grade point average. ACT scores in Social Science are not related to student performance in English and Mathematics but are related to academic performance in Social Science, Natural Science and final grade point average. ACT scores in Natural Sciences are not significantly related \( (P > .001) \) to grades in English, Mathematics, Natural Sciences and final grade point average but are related to grades in Social Sciences. The ACT Composite score is not related to students' performance in English but is related \( (P = .001) \) to academic performance in the areas of Mathematics, Social Sciences, Natural Sciences, and final grade point average.

The hypotheses concerning the students' level of anxiety, depression, and hostility as measured by the Multiple Affect Adjective Checklist will be considered
together.

$H_2$ Students scoring lower on the anxiety scale of the Multiple Affect Adjective Check List will not perform higher academically than students scoring higher on the anxiety scale.

$H_3$ Students scoring lower on the depression scale of the Multiple Affect Adjective Check List will not perform higher academically than students scoring higher on the depression scale.

$H_4$ Students scoring lower on the hostility scale of the Multiple Affect Adjective Check List will not perform higher academically than students scoring higher on the hostility scale.

The frequency distribution for scores on the three measures of anxiety, depression and hostility are in the Appendices N, O, and P. Table 2 presents the Pearson correlation for these measures in relation to final grade point average. As indicated by the significance level, none of the traits are strongly related to final grade point average. Null hypotheses 2, 3, and 4 failed to be rejected.
TABLE 2
RELATIONSHIP OF MAACL SCORES TO ACADEMIC PERFORMANCE

<table>
<thead>
<tr>
<th></th>
<th>Pearson Correlation Coefficient</th>
<th>GPA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anxiety</td>
<td>0.0207</td>
<td>(132)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>P &gt; .001</td>
</tr>
<tr>
<td>Depression</td>
<td>0.0042</td>
<td>(132)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>P &gt; .001</td>
</tr>
<tr>
<td>Hostility</td>
<td>-0.1525</td>
<td>(132)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>P &gt; .001</td>
</tr>
</tbody>
</table>

H5 The sex of the student will not affect academic performance.

Table 3 gives the sex of each respondent. Thirty-eight (28.8 percent) of the subjects were male. Ninety-four (71.2 percent) of the subjects were female. Table 4 describes the relationship of sex to academic performance. With 7 degrees of freedom, the Chi Square value of 14.067 should be obtained for the results to be significant at the .05 level. A Chi Square value of 6.551 was obtained. Hence, the null hypothesis 5 was accepted. Sex of the student had no significant effect on final grade point average.
# TABLE 3

**STUDENTS BY SEX**

<table>
<thead>
<tr>
<th></th>
<th>Number</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>38</td>
<td>28.8</td>
</tr>
<tr>
<td>Female</td>
<td>94</td>
<td>71.2</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>132</td>
<td>100.0</td>
</tr>
</tbody>
</table>
TABLE 4
RELATIONSHIP OF SEX TO ACADEMIC PERFORMANCE
CROSSTABULATION - CHI SQUARE

<table>
<thead>
<tr>
<th>GPA</th>
<th>Male</th>
<th>Female</th>
<th>Row Total</th>
</tr>
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<tbody>
<tr>
<td>0.00-.50</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>0.8%</td>
<td>1.5%</td>
<td>2.3%</td>
</tr>
<tr>
<td>.51-1.00</td>
<td>1</td>
<td>7</td>
<td>8</td>
</tr>
<tr>
<td></td>
<td>0.8%</td>
<td>5.3%</td>
<td>6.1%</td>
</tr>
<tr>
<td>1.01-1.50</td>
<td>5</td>
<td>7</td>
<td>12</td>
</tr>
<tr>
<td></td>
<td>3.8%</td>
<td>5.3%</td>
<td>9.1%</td>
</tr>
<tr>
<td>1.51-2.00</td>
<td>12</td>
<td>18</td>
<td>30</td>
</tr>
<tr>
<td></td>
<td>9.1%</td>
<td>13.6%</td>
<td>22.7%</td>
</tr>
<tr>
<td>2.01-2.50</td>
<td>11</td>
<td>24</td>
<td>35</td>
</tr>
<tr>
<td></td>
<td>8.3%</td>
<td>16.2%</td>
<td>26.5%</td>
</tr>
<tr>
<td>2.51-3.00</td>
<td>5</td>
<td>22</td>
<td>27</td>
</tr>
<tr>
<td></td>
<td>3.8%</td>
<td>16.7%</td>
<td>20.5%</td>
</tr>
<tr>
<td>3.01-3.50</td>
<td>2</td>
<td>11</td>
<td>13</td>
</tr>
<tr>
<td></td>
<td>1.5%</td>
<td>8.3%</td>
<td>9.8%</td>
</tr>
<tr>
<td>3.50-4.00</td>
<td>1</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>0.8%</td>
<td>2.3%</td>
<td>3.0%</td>
</tr>
</tbody>
</table>

Column Total 38 94 132
28.8% 71.2% 100.0%

Chi Square = 6.551 Significance = 0.477
Degrees of Freedom = 7
H6 The off campus or on campus residency of the student will not affect academic performance.

Table 5 presents a summation of the residency of the students. Fifty-three (40.2 percent) of the students lived off campus at the time of the study. Seventy-nine (59.8 percent) of the students lived on campus. Table 6 describes the relationship of student residency to academic performance. To be significant at the .05 level, a Chi Square value of 14.067 should have been obtained. The Chi Square value of 4.743 is not significant. The null hypothesis was not rejected.

TABLE 5
RESIDENCY OF STUDENTS

<table>
<thead>
<tr>
<th></th>
<th>Number</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Off Campus</td>
<td>53</td>
<td>40.2</td>
</tr>
<tr>
<td>On Campus</td>
<td>79</td>
<td>59.8</td>
</tr>
<tr>
<td>Total</td>
<td>132</td>
<td>100.0</td>
</tr>
</tbody>
</table>
TABLE 6
RELATIONSHIP OF RESIDENCY TO ACADEMIC PERFORMANCE
CROSSTABULATION - CHI SQUARE

<table>
<thead>
<tr>
<th>GPA</th>
<th>Off Campus</th>
<th>On Campus</th>
<th>Row Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.00-.51</td>
<td>2</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>1.5%</td>
<td>0.8%</td>
<td>2.3%</td>
</tr>
<tr>
<td>.51-1.00</td>
<td>3</td>
<td>5</td>
<td>8</td>
</tr>
<tr>
<td></td>
<td>2.3%</td>
<td>3.8%</td>
<td>6.1%</td>
</tr>
<tr>
<td>1.01-1.50</td>
<td>5</td>
<td>7</td>
<td>12</td>
</tr>
<tr>
<td></td>
<td>3.8%</td>
<td>5.3%</td>
<td>9.1%</td>
</tr>
<tr>
<td>1.51-2.00</td>
<td>16</td>
<td>14</td>
<td>30</td>
</tr>
<tr>
<td></td>
<td>12.1%</td>
<td>10.6%</td>
<td>22.7%</td>
</tr>
<tr>
<td>2.01-2.50</td>
<td>12</td>
<td>23</td>
<td>35</td>
</tr>
<tr>
<td></td>
<td>9.1%</td>
<td>17.4%</td>
<td>26.5%</td>
</tr>
<tr>
<td>2.51-3.00</td>
<td>9</td>
<td>18</td>
<td>27</td>
</tr>
<tr>
<td></td>
<td>6.8%</td>
<td>13.6%</td>
<td>20.5%</td>
</tr>
<tr>
<td>3.01-3.50</td>
<td>4</td>
<td>9</td>
<td>13</td>
</tr>
<tr>
<td></td>
<td>3.0%</td>
<td>6.8%</td>
<td>9.8%</td>
</tr>
<tr>
<td>3.51-4.00</td>
<td>2</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>1.5%</td>
<td>1.5%</td>
<td>3.0%</td>
</tr>
<tr>
<td>Column Total</td>
<td>53</td>
<td>79</td>
<td>132</td>
</tr>
<tr>
<td></td>
<td>40.2%</td>
<td>59.8%</td>
<td>100.0%</td>
</tr>
</tbody>
</table>

Chi Square = 4.743  
Significance = 0.691  
Degrees of Freedom = 7
H7 Students receiving tutorial assistance from the Office of Developmental Education will not perform higher academically than students not receiving tutorial assistance.

Table 7 summarizes the number of students receiving tutorial assistance. Forty-three (32.6 percent) of the students received tutorial assistance. Eighty-nine (67.4 percent) of the students did not take advantage of tutorial assistance. Table 8 gives the relationship of tutorial assistance to academic performance. To be significant at the .05 level, a Chi Square value of 14.067 should have been obtained. The value of 6.771 is not significant. The null hypothesis was not rejected.

**TABLE 7**

**STUDENT REQUESTS FOR TUTORIAL ASSISTANCE FROM THE OFFICE OF DEVELOPMENTAL EDUCATION**

<table>
<thead>
<tr>
<th></th>
<th>Number</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Requested Tutoring</td>
<td>43</td>
<td>32.6</td>
</tr>
<tr>
<td>Did Not Request Tutoring</td>
<td>89</td>
<td>67.4</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>132</td>
<td>100.0</td>
</tr>
</tbody>
</table>
TABLE 8.
RELATIONSHIP OF TUTORIAL ASSISTANCE TO ACADEMIC PERFORMANCE

<table>
<thead>
<tr>
<th>GPA</th>
<th>Requested Tutor</th>
<th>Did Not Request Tutor</th>
<th>Row Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.00-.50</td>
<td>1 0.8%</td>
<td>2 1.5%</td>
<td>3 2.3%</td>
</tr>
<tr>
<td>.51-1.00</td>
<td>5 3.8%</td>
<td>3 2.3%</td>
<td>8 6.1%</td>
</tr>
<tr>
<td>1.01-1.50</td>
<td>3 2.3%</td>
<td>9 6.8%</td>
<td>12 9.1%</td>
</tr>
<tr>
<td>1.51-2.00</td>
<td>11 8.3%</td>
<td>19 14.4%</td>
<td>30 22.7%</td>
</tr>
<tr>
<td>2.01-2.50</td>
<td>10 7.6%</td>
<td>25 18.9%</td>
<td>35 26.5%</td>
</tr>
<tr>
<td>2.51-3.00</td>
<td>10 7.6%</td>
<td>17 12.9%</td>
<td>27 20.5%</td>
</tr>
<tr>
<td>3.01-3.50</td>
<td>3 2.3%</td>
<td>10 7.6%</td>
<td>13 9.8%</td>
</tr>
<tr>
<td>3.51-4.00</td>
<td>0 0.0%</td>
<td>4 3.0%</td>
<td>4 3.0%</td>
</tr>
<tr>
<td>Column Total</td>
<td>43 32.6%</td>
<td>89 67.4%</td>
<td>132 100.0%</td>
</tr>
</tbody>
</table>

Chi Square = 6.771
Degrees of Freedom = 7
Significance = 0.453
In addition to the stated hypotheses, other areas were investigated regarding the use of the Developmental Education Tutorial Center. A discussion of these areas follows:

1. The pattern of student use of the Tutorial Center.
2. The frequency of the students' attendance at the Tutorial Center.
3. The average length of the tutoring sessions.
4. The effect of reported non-tutored study sessions on academic performance.
5. The effect of class attendance on academic performance.
6. The students' use of additional assistance for academic coursework.
7. The students' perception of the Developmental Education Tutorial Center.

Table 9 indicates the pattern of student use of the Tutorial Center. Most students request assistance during the third or fourth week of the quarter. As indicated in Table 10, the greatest number of students attend the Tutorial Center once per week. In Table 11, the length of tutoring sessions is generally from 30 to 60 minutes.

The students reported the number of non-tutored hours they spent studying in tutored subjects per week. Over half of the forty-three tutored students spent from
5 to 9 hours studying per week. Table 12 indicates no significant difference of various amounts of study time to academic performance.

**TABLE 9**

**STUDENT USE OF THE TUTORIAL CENTER**

<table>
<thead>
<tr>
<th>Week of the Quarter Tutor was Requested</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0</td>
<td>0.0</td>
</tr>
<tr>
<td>2</td>
<td>4</td>
<td>9.3</td>
</tr>
<tr>
<td>3</td>
<td>12</td>
<td>27.9</td>
</tr>
<tr>
<td>4</td>
<td>14</td>
<td>32.6</td>
</tr>
<tr>
<td>5</td>
<td>6</td>
<td>14.0</td>
</tr>
<tr>
<td>6</td>
<td>5</td>
<td>11.6</td>
</tr>
<tr>
<td>7</td>
<td>0</td>
<td>0.0</td>
</tr>
<tr>
<td>8</td>
<td>2</td>
<td>4.7</td>
</tr>
<tr>
<td>9</td>
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<td>0.0</td>
</tr>
<tr>
<td>10</td>
<td>0</td>
<td>0.0</td>
</tr>
<tr>
<td><strong>Number</strong></td>
<td><strong>43</strong></td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>

Mode 4.000
### TABLE 10
FREQUENCY OF STUDENT ATTENDANCE AT THE TUTORIAL CENTER

<table>
<thead>
<tr>
<th>Times per Week</th>
<th>Number</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>26</td>
<td>60.5</td>
</tr>
<tr>
<td>2</td>
<td>9</td>
<td>20.9</td>
</tr>
<tr>
<td>3</td>
<td>6</td>
<td>14.0</td>
</tr>
<tr>
<td>4</td>
<td>2</td>
<td>4.7</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>43</strong></td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>

Mode 1.000

### TABLE 11
THE LENGTH OF EACH TUTORING SESSION

<table>
<thead>
<tr>
<th>Length</th>
<th>Number</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>30-60 minutes</td>
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<tr>
<td>60-90 minutes</td>
<td>9</td>
<td>20.9</td>
</tr>
<tr>
<td>90-120 minutes</td>
<td>6</td>
<td>14.0</td>
</tr>
<tr>
<td>over 120 minutes</td>
<td>2</td>
<td>4.7</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>43</strong></td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>

Mode - 30-60 minutes
TABLE 12
RELATIONSHIP OF NON-TUTORED STUDY SESSIONS ON ACADEMIC PERFORMANCE OF TUTORED STUDENTS

<table>
<thead>
<tr>
<th>GPA</th>
<th>0-4 hours per week</th>
<th>5-9 hours per week</th>
<th>10-14 hours per week</th>
<th>over 15 hours per wk.</th>
<th>Row Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.00-.50</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>0.0%</td>
<td>2.3%</td>
</tr>
<tr>
<td>.51-1.00</td>
<td>1</td>
<td>4</td>
<td>0</td>
<td>2.3%</td>
<td>9.3%</td>
</tr>
<tr>
<td>1.01-1.50</td>
<td>1</td>
<td>2</td>
<td>0</td>
<td>2.3%</td>
<td>4.7%</td>
</tr>
<tr>
<td>1.51-2.00</td>
<td>0</td>
<td>7</td>
<td>3</td>
<td>0.0%</td>
<td>16.3%</td>
</tr>
<tr>
<td>2.01-2.50</td>
<td>3</td>
<td>5</td>
<td>2</td>
<td>7.0%</td>
<td>11.6%</td>
</tr>
<tr>
<td>2.51-3.00</td>
<td>1</td>
<td>3</td>
<td>3</td>
<td>2.3%</td>
<td>7.0%</td>
</tr>
<tr>
<td>over 3.00</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>2.3%</td>
<td>2.3%</td>
</tr>
<tr>
<td>Column Total</td>
<td>7</td>
<td>22</td>
<td>10</td>
<td>16.2%</td>
<td>51.2%</td>
</tr>
</tbody>
</table>

Chi Square = 56.885
Degrees of Freedom = 66
Significance = 0.2174
Table 13 shows the relationship of class absences to academic performance. The Chi Square value of 56.885 was not significant.

Tables 14 and 15 describe tutored and non-tutored students' use of additional assistance for academic coursework. In responding, the students could check all the sources they used for assistance. In addition to the Tutorial Center, the tutored students relied most on help from the class instructor, friends, classmates, and roommates. The non-tutored students relied most on help from friends, the class instructor, roommates, classmates, and the teaching associate.
TABLE 13

RELATIONSHIP OF CLASS ABSENCES ON ACADEMIC PERFORMANCE OF TUTORED STUDENTS

<table>
<thead>
<tr>
<th>GPA</th>
<th>0-3 absences</th>
<th>4-7 absences</th>
<th>8-11 absences</th>
<th>over 10 absences</th>
<th>Row Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.00-.50</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>2.3%</td>
<td>0.0%</td>
<td>0.0%</td>
<td>0.0%</td>
<td>2.3%</td>
</tr>
<tr>
<td>.51-1.00</td>
<td>1</td>
<td>3</td>
<td>1</td>
<td>0</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>2.3%</td>
<td>7.0%</td>
<td>2.3%</td>
<td>0.0%</td>
<td>11.6%</td>
</tr>
<tr>
<td>1.01-1.50</td>
<td>2</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>4.6%</td>
<td>0.0%</td>
<td>0.0%</td>
<td>2.3%</td>
<td>7.0%</td>
</tr>
<tr>
<td>1.51-2.00</td>
<td>3</td>
<td>6</td>
<td>2</td>
<td>0</td>
<td>11</td>
</tr>
<tr>
<td></td>
<td>7.0%</td>
<td>14.0%</td>
<td>4.7%</td>
<td>0.0%</td>
<td>25.6%</td>
</tr>
<tr>
<td>2.01-2.50</td>
<td>7</td>
<td>2</td>
<td>1</td>
<td>0</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td>16.3%</td>
<td>4.7%</td>
<td>2.3%</td>
<td>0.0%</td>
<td>23.3%</td>
</tr>
<tr>
<td>2.51-3.00</td>
<td>6</td>
<td>3</td>
<td>1</td>
<td>0</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td>14.0%</td>
<td>7.0%</td>
<td>2.3%</td>
<td>0.0%</td>
<td>23.3%</td>
</tr>
<tr>
<td>over 3.00</td>
<td>1</td>
<td>2</td>
<td>0</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>2.3%</td>
<td>4.7%</td>
<td>0.0%</td>
<td>0.0%</td>
<td>7.0%</td>
</tr>
<tr>
<td>Column</td>
<td>21</td>
<td>16</td>
<td>5</td>
<td>1</td>
<td>43</td>
</tr>
<tr>
<td>Total</td>
<td>49.0%</td>
<td>37.4%</td>
<td>11.6%</td>
<td>2.3%</td>
<td>100.0%</td>
</tr>
</tbody>
</table>

Chi Square = 56.885  Significance = .217
Degrees of Freedom = 66
### TABLE 14

**TUTORED STUDENTS' USE OF ADDITIONAL ASSISTANCE FOR ACADEMIC COURSEWORK**

<table>
<thead>
<tr>
<th>Source</th>
<th>Number</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Class Instructor</td>
<td>22</td>
<td>51.2</td>
</tr>
<tr>
<td>Teaching Associate</td>
<td>8</td>
<td>18.6</td>
</tr>
<tr>
<td>Peer Counselor</td>
<td>5</td>
<td>11.6</td>
</tr>
<tr>
<td>Reading/Study Center</td>
<td>10</td>
<td>23.3</td>
</tr>
<tr>
<td>Classmate</td>
<td>17</td>
<td>39.5</td>
</tr>
<tr>
<td>Roommate</td>
<td>16</td>
<td>37.2</td>
</tr>
<tr>
<td>Friend</td>
<td>26</td>
<td>60.5</td>
</tr>
<tr>
<td><strong>Total Responding</strong></td>
<td><strong>43</strong></td>
<td></td>
</tr>
</tbody>
</table>

43 Students
<table>
<thead>
<tr>
<th>Source</th>
<th>Number</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Class Instructor</td>
<td>32</td>
<td>36.0</td>
</tr>
<tr>
<td>Teaching Associate</td>
<td>27</td>
<td>30.3</td>
</tr>
<tr>
<td>Peer Counselor</td>
<td>3</td>
<td>3.4</td>
</tr>
<tr>
<td>Reading/Study Center</td>
<td>8</td>
<td>9.0</td>
</tr>
<tr>
<td>Classmate</td>
<td>28</td>
<td>31.5</td>
</tr>
<tr>
<td>Roommate</td>
<td>30</td>
<td>33.7</td>
</tr>
<tr>
<td>Friend</td>
<td>46</td>
<td>51.7</td>
</tr>
</tbody>
</table>

Total Responding 89 Students
Table 16 summarizes the tutored students' perception of the Tutorial Center. Of the forty-three students using the service, over half (58.1 percent) felt the assistance was helpful. An additional 37.2 percent of the students described the assistance as very helpful. Over 95 percent of the students felt that they received the help they had expected to receive.

Table 17 describes the students' persistence in obtaining tutorial help. Of the thirteen respondents, most students attended the center at a less busy time if they experienced difficulty in seeing a tutor. Others quit attending the center or made an appointment to see a specific tutor.

**TABLE 16**

**TUTORED STUDENTS' PERCEPTION OF THE DEVELOPMENTAL EDUCATION TUTORIAL CENTER**

<table>
<thead>
<tr>
<th>Response</th>
<th>Number</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very Helpful</td>
<td>16</td>
<td>37.2</td>
</tr>
<tr>
<td>Helpful</td>
<td>25</td>
<td>58.1</td>
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In this chapter, the findings of the study have been analyzed. The first section described the statistical tests used in data analysis. The second section presented each hypotheses and the specific statistical analysis. The third section, Chapter V will include a summary, conclusions and recommendations.
CHAPTER V

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

This chapter includes the summary, conclusions, and recommendations of the study.

Summary

The purpose of the study was to examine the effects of selected variables on the academic performance of 132 minority students enrolled in the Developmental Education program, University College, the Ohio State University. All of the students had the opportunity to request assistance from the Developmental Education Tutorial Center. Of the 132 freshmen subjects, 43 did use the Tutorial Center; 89 did not during Autumn Quarter, 1975.

The instruments used in the study were the Multiple Affect Adjective Check List and a prepared questionnaire. Additional data regarding ACT standard scores, sex, student residency, and final grade point average was obtained for each student.

Multiple regression analysis was to be used to determine the effect of these variables on the criterion variable, grade point average. However, statistical analysis indicated that there was not enough variability
of grade point average to warrant the use of multiple regression. Frequency distributions, Chi Square analysis, and Pearson Correlation analysis were used.

Conclusions and Recommendations

In testing the hypotheses, it was found that, except for ACT standard scores in English, there was a positive relationship between ACT standard scores and student grades in related subject areas. There was no significant relationship between grade point average and the following variables: 1) level of anxiety, depression, and hostility, 2) sex of the student, 3) off campus or on campus residency of the student, 4) the use of tutorial assistance.

In reviewing these findings, it is felt that more research should be conducted to determine the effect of levels of anxiety, depression, and hostility on final grade point average. Other studies have reported that, up to a certain level, anxiety may produce more positive task performance. In addition, the student use of the tutorial assistance may not have had the anticipated effect on academic performance due to the pattern of student use. Most students reported attending the center only once per week. As has been reported in previous studies, students seek assistance during an academic crisis when it may be too late to improve performance. In addition, first quarter freshmen may not have sufficient
instructor feedback or awareness of poor performance prior to receiving grades. Academic performance may have improved if these students had attended the center more frequently. Non-tutored students obtained more assistance from class instructors and teaching associates than did tutored students. Tutored students should be encouraged to make use of all academic resources rather than relying on tutorial assistance alone. Contact with class instructors or teaching associates can further reinforce the information provided by tutors.

The student perception of the Tutorial Center was very positive. Nearly all the students perceived the tutoring as helpful or very helpful. They also reported receiving the kind of help they expected. Few students reported difficulty in obtaining assistance at the center.

It is recommended that students receive more instruction on how to use tutorial services and on the use of their class instructors or teaching associates to obtain academic assistance. It is also recommended that further research be conducted regarding the effect of levels of anxiety, hostility, and depression on final grade point average. The students participating in the Developmental Education program are receiving emotional support from adviser-counselors, peer counselors, and peers. This support may outweigh the negative effect of
high levels of anxiety, depression or hostility. A comparative study of Developmental Education students and the general minority population at Ohio State University may indicate some differences in final grade point average.

It is often difficult to obtain cooperative research populations. This difficulty certainly hinders the random selection of such populations. Additional research may be helped by conducting personal in-depth interviews with students. Through these interviews more information concerning the effective state of the students could be obtained. Other intervening variables which effect student attitude and academic performance could be identified in an interview situation.

It is additionally recommended that research continue in the area of programs designed to meet the special needs of all students. Evaluation is a necessity if program flexibility is to be maintained. As these programs increase in number, research must provide guidelines for serving students in the most effective manner possible.
APPENDICES
APPENDIX A

OFFICE OF DEVELOPMENTAL EDUCATION, UNIVERSITY COLLEGE

THE OHIO STATE UNIVERSITY ORGANIZATIONAL STRUCTURE

| Ohio State University Vice President  |
| and Dean, University College         |
| Associate Dean, Developmental Education |

| Program Coordinator                  |
| Coordinator, Counseling Services     |
| Coordinator, Reading/Study Skills Center |

| Tutorial Services                    |
| Peer Counselors - Adviser - Counselors |
| Staff                                |

| Students     |
| Students     |
| Students     |
| Students     |
APPENDIX B

OPERATION OF THE DEVELOPMENTAL EDUCATION TUTORIAL CENTER

With the centralization of the tutoring services offered by the Office of Developmental Education, students receive immediate tutoring assistance, at convenient times, in adequate facilities, by competent tutors.

Feedback on the effectiveness of the tutoring centers is obtained periodically so that revisions in the system can be implemented quickly.

(A) Referrals:

1. Students come to the Office of Developmental Education and complete a Tutor Request Form for each course in which they desire a tutor.

2. Students immediately receive a referral slip indicating the location and hours of the Tutorial Center.

3. The tutors at the Center, on a Summary Report form, record the date of tutoring, student's name, the course, time spent in tutoring, and tutor comments. The Summary Report forms are kept at the Center in a log book.

4. Students can request a particular tutor on an appointment basis. Tutors post a sign-up sheet for appointments at the center.

5. Students requesting assistance in the same courses
may be put together by the tutors for group tutoring sessions.

(B) Hours: All tutoring centers are open from the second through the tenth week of each quarter, or until the last day of classes each quarter. The last week is spent in summarizing and reporting to the Program Coordinator.

(C) Evaluation: Evaluation of the Tutorial Center is conducted in the following manner:

1. The Program Coordinator visits the center periodically. During these visits, an informal survey is taken on the number of students visiting the center, the tutor-student load, and the adequacy of the physical location. The results of the informal survey and tutor recommendations are used to provide immediate adjustments in the administration of the Tutorial Center. Student demand is met by increasing tutoring hours or by employing additional tutors.

2. At the end of each quarter, the Program Coordinator compares the students' academic performance with the extent to which the students used the tutoring services as documented in the Tutoring Summary Report Logbooks.

3. Evaluation surveys are provided at each center so students can submit any comments or suggestions for more effective use of the centers.
4. At the end of each quarter, tutors receive feedback on students' academic performance.

5. During the last week of the quarter, tutors provide the Program Coordinator with their own evaluation and recommendations for the centers. These are submitted before the end of final examination week.
APPENDIX C

OFFICE OF DEVELOPMENTAL EDUCATION

TUTORING SURVEY

To determine the effectiveness of the Office of Developmental Education tutoring program, please complete the following survey. Individual answers will be confidential.

Date_________________  Name_________________________

Social Security Number___________  Age____  Major_______

Did you request the services of a tutor from the Office of Developmental Education?

_______yes  ________no

If you did not request a tutor, please complete this page.

If you did request a tutor, please go to the next page.

1. For what courses did you obtain help this quarter?
   1.
   2.
   3.
   4.

2. Who helped you in your coursework? (check all that apply)

   __ class instructor  __ peer counselor
   __ teaching associate  __ Reading/Study Skills Center
   __ classmate  __ roommate  
   __ friend  __ other

3. Why did you not request a tutor from Developmental Education?

   ___ did not know they were available
   ___ no tutor available for my course
   ___ received help from another source
   ___ did not think tutoring was necessary
   ___ thought only students with poor academic background needed tutors
continued...#3
_____ other reasons, please state

Page 2

1. How did you find out about the tutoring service?
   ____UVC-100  ____classmate
   ____another class  ____friend
   ____peer counselor  ____roommate
   ____academic adviser  ____other

2. For what courses did you request assistance?
   1.
   2.
   3.
   4.

3. Who were the tutors who worked (helped) with you?
   1.
   2.
   3.
   4.

4. During which week of the quarter did you request a tutor?
   _______ week

5. How much time passed between the time you requested a tutor and your first session at the tutoring center?
   _______ days

6. How many times per week did you go to the tutoring centers?
   _______ times/week

7. What was the average length of each tutoring session?
   _______ hour(s)/week
8. How many out of class and non-tutored hours per week did you study by yourself?

_____ hour(s)/week

9. In your tutored courses, how many times were you absent during the quarter from the regularly scheduled class?

_____ times

10. What do you think are your main difficulties in studying for your classes? (check three).

___ lack of high school preparation
___ lack of study skills
___ class was uninteresting
___ did not attend class regularly
___ spent time on other classes
___ managing employment and going to school
___ did not spend enough time studying
___ too much information in class for a 10 week quarter
___ no place to study
___ other, please state

11. Did you make an appointment with any of your instructors for study help? If not, why not?

12. Besides the tutoring centers, did you seek any help from the following?

___ class instructor    ___Reading/Study Skills Center
___ teaching associate ___classmates
___ academic adviser    ___roommates
___ peer counselor      ___friends
___ other

13. In general, how would you rate the quality of the tutoring you received?

___very helpful    ___helpful    ___not helpful

14. What type of help did you expect from the tutoring service?
15. Did you receive the help you expected?
   ___yes   ___no

16. If you had difficulty seeing a tutor did you (check all that apply):
   ___ make an appointment with a specific tutor
   ___ visit the center at a less busy time
   ___ contact the Office of Developmental Education
   ___ quit going to the tutoring centers
   ___ other (please state)

17. What did you like about the tutoring program?

18. What suggestions do you have for the tutoring program?
## APPENDIX D

### ACT STANDARD SCORES IN ENGLISH

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Standard Error = 0.470  
Variance = 27.415
APPENDIX E

ACT STANDARD SCORES IN MATHEMATICS

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Standard Error = 0.674  Variance = 56.256
### APPENDIX F

**ACT STANDARD SCORES IN SOCIAL SCIENCES**

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- Standard Error = 0.705
- Variance = 61.701
# APPENDIX G

## ACT STANDARD SCORES IN NATURAL SCIENCES

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Standard Error = 0.622

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APPENDIX H

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Variance = 26.973
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STUDENT GRADES IN ENGLISH

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Standard Error = 0.383  
Variance = 7.042
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STUDENT GRADES IN SOCIAL SCIENCES

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**STUDENT GRADES IN NATURAL SCIENCES**

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Variance = 0.987

### APPENDIX M

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APPENDIX N

MAACL ANXIETY SCORES

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MAACL HOSTILITY SCORES

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Total 132 100.0

Mean = 9.318  Standard Deviation = 3.845
Standard Error = 0.335  Variance = 14.783
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