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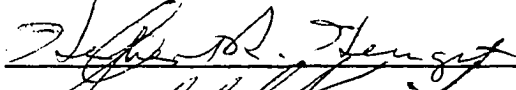
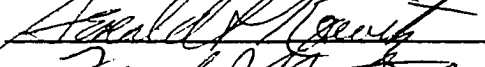
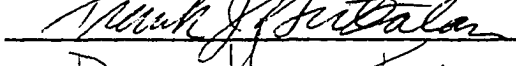
A COMPARATIVE STUDY OF LANGSTON UNIVERSITY FRESHMEN
WHO GRADUATED FROM INTEGRATED HIGH SCHOOLS AND
THOSE FROM PREDOMINANTLY NEGRO SCHOOLS

A DISSERTATION
SUBMITTED TO THE GRADUATE FACULTY
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degree of
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BY
ELMYRA RICHARDSON DAVIS
Norman, Oklahoma
1970

A COMPARATIVE STUDY OF LANGSTON UNIVERSITY FRESHMEN
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APPROVED BY


DISSERTATION COMMITTEE

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CHAPTER I

INTRODUCTION

Through the years, education has been recognized as one of the important ways in which the promise of America--equality of opportunity--can be fulfilled. The public schools have provided, traditionally, a means by which those newly arrived in the cities--the immigrant and the impoverished--have been able to join the American mainstream. The hope for public education always has been that it would be a means of assuring equal opportunity and of strengthening and unifying American society.¹

In mid-nineteenth century, Horace Mann defined education as the "great equalizer of the conditions of man--the

¹National Education Association, Educational Policies Commission, American Education and the Search for Equal Opportunity (Washington, D. C.: The National Education Association, 1965), p. 4.

balance wheel of the social machinery."¹ Until mid-twentieth century, these words were more a dream than a reality. During the year of 1954 the momentous decision of the United States Supreme Court² banning segregation in the public schools of the country created without doubt the greatest public interest in education in many years.

President Lyndon B. Johnson, late in 1965, said:

The future of our Nation rests on the quality of the education its young people receive. And for our Negro children quality education is especially vital because it is the key to equality.

In the past decade this Nation has moved with increasing speed toward the elimination of discrimination and segregation in education. . . . However, long after we have done all we can to eliminate past inequalities, we will continue to pay their costs in stunted lives. Because millions of Negroes were deprived of quality education and training in basic skills, because they were given to believe that they could aspire only to the most menial and insecure places in our society, they are seriously handicapped in taking advantage of opportunities afforded by new laws, new attitudes and an expanding economy. We can no longer tolerate such waste of human resources. . . .³

President Johnson's message echoed the unprecedented hopes and long cherished dreams that American Negroes had

¹Horace Mann, "Twelfth Annual Report of Horace Mann as Secretary of the Massachusetts State Board of Education, 1848," In Documents in American History, H. S. Commager, ed. (Boston: Massachusetts State Board of Education, 1958), p. 318.

²*Brown v. Board of Education of Topeka*, 347 U. S. 483, 492 (1954).

³Lyndon B. Johnson, "Letter to Hon. John A. Hannah, Chairman, U. S. Commission on Civil Rights." In Racial Isolation in the Public Schools, Vol. 1 (Washington, D. C.: U. S. Government Printing Office, 1967), IV.

envisioned with the 1954 Supreme Court decision. The paramount question of implementation of that decision was yet to be answered.

Background of the Study

The years 1954 and 1964, in all probability, will stand forth as turning points in the history of race relations in the twentieth century. The intervening decade was a period of continued hope and promise for Black Americans, yet it brought much bitter frustration. The most direct and effective Black protest in American history emerged along with white resistance of great violence. The ten years following the Brown decision of May 17, 1954 appeared, in passage, as years of gradualism, circumvention, and tokenism.¹

Immediately following the 1954 decision, the Richmond Times-Dispatch observed that it would have been desirable if the court had at the same time (of the decision) specified the abolition of segregation by stages or steps, with, perhaps, 10 per cent eliminated the first year after the decree became effective, 40 per cent two years later, and the remaining 50 per cent some years after that.² In this way, according to the Dispatch, all uncertainty as to the timing and method of the tremendous shift would have been eliminated at once.

¹L. M. Killian and C. M. Grigg, "Community Resistance to and Acceptance of Desegregation," Journal of Negro Education, XXXIV (Summer, 1965), pp. 268-269.

²Benjamin Muse, "The South's Troubled Years," The Southern Education Report, IV (June, 1969), p. 14.

As subsequent history unfolded, public school segregation was eliminated in the border region on something approaching the timetable suggested above. In the South--the 11 former Confederate States--not one year, but 12 years passed before the first 10 per cent of the Negro children were admitted to schools with white pupils. In three states, Alabama, Louisiana and Mississippi, desegregation had not reached 10 per cent of the Negro pupils as late as September, 1969.¹

During the ten years following the 1954 Supreme Court decision, the proportion of Negroes attending school with whites increased about one per cent per year in the Southern region.²

In 1965, however, the pace of desegregation underwent a substantial increase. Apparently this was due to the influence of the 1964 Civil Rights Act. The Nation's strongest civil rights measure since the Reconstruction Era was signed into law by President Johnson on July 2, 1964, a few hours after a 289-to-126 vote of the House of Representatives completed more than a year of Congressional consideration of the bill.³

¹Ibid., p. 14.

²Earl H. West, "Progress Toward Equality of Opportunity in Elementary and Secondary Education," Journal of Negro Education, XXXVII (Summer, 1968), pp. 212-219.

The 1964 law accomplished three important purposes:

1. It made the ending of segregated public education a statutory goal, disposing once and for all of the specious contention that the 1954 rule was only "judge-made law."

2. It authorized the U. S. Department of Justice to bring desegregation law suits on its own initiative, thus relieving the Negro parents from some of the onerous and often dangerous burden they had been forced to assume for the previous ten years.

3. In Title VI it gave the people of the United States a powerful weapon approving the withholding of their tax money from school districts which persisted in disobeying the law.¹

The enactment of the Elementary and Secondary Act in the following year enormously enhanced the potency of Title VI since much greater amounts of public education money were now involved.²

According to a Southern Education Report,³ Southern schoolmen and federal officials conferred repeatedly and worked extra hours through the summer to complete compliance agreements under the Civil Rights Act before the opening of the new school term. By the middle of August, 1965, ninety-two per cent of the school districts in the Southern and border region proposed some form of compliance to qualify for continued federal aid.

In the school year 1964-65, the generally accepted figure for the proportion of Negro pupils (in the 17 states

¹John A. Morsell, "Racial Desegregation and Integration in Public Education," The Journal of Negro Education, XXXVIII (Summer, 1969), pp. 276-284.

²Ibid., p. 277.

³The Southern Education Report, I (July-Aug., 1965), pp. 31-33.

with pre-1954 segregation required or allowed) attending bi-racial classes was 10.9 per cent. This was up from the previous year's 9.2 per cent.¹

in 1965-66, the first school year in which Title VI became effective, the proportion rose to 15.9 per cent. This figure conceals a great difference between border and Deep South States: the 1965-66 percentage for the former was 68.9, up from 58.3; for the latter it was 6.0, up from 2.2 per cent.²

The upward trend continued into the subsequent school year, 1966-67. Using the same comparisons, it was reported that, for the South as a whole, 24.4 per cent of Negro children were in other than all-Negro schools. In the border states, the percentage was 67.8; in the Deep South it was 16.9 per cent.³

In May, 1968, the Office of Civil Rights announced that approximately 14 per cent of the Negro students in 11 Southern states are enrolled in desegregated public elementary and secondary schools.⁴

The 14 per cent figure applies only to Negro children attending schools in which at least 50 per cent of the students are white.

¹Southern Education Reporting Service, Statistical Summary, February, 1967, pp. 29-32.

²Ibid., p. 31.

³Ibid., p. 32.

⁴U. S. Department of Health, Education, and Welfare, Office of Civil Rights. Press Release, May 28, 1968.

For the 1968-69 school year the proportion of Negro students in schools having 50 per cent or more white enrollment was 20.3 per cent. According to the Office of Civil Rights of the Department of Health, Education and Welfare, the 6.4 percentage point increase over 1967-68 was the largest in a single year since passage of the 1964 Civil Rights Act. The states covered by these statistics were the eleven states of the old Confederacy.¹

The Supreme Court's decision banning racial segregation in American public schools gave rise to much apprehension concerning the possible effects of desegregation upon the pupils and the educational process. Much of this concern has been based on the fear of a considerable number of persons that conditions of desegregation might have adverse emotional effects on pupils. There are many others, however, who do not share this fear, and who believe that the achievement of both white and Black pupils will be strengthened and increased by the mixing of the races. Researchers have presented evidence which appears to support each of these viewpoints.

Over the years, numerous published reports of investigations indicate that the Negro pupil is behind in achievement as compared with the white pupil. For example, as early as

¹Ibid., p. 10.

1913 a study by Mayo¹ showed Negro pupils in New York City were retarded to the extent of seven months by the time they entered high schools. He also reported that the Negro student required 4.5 terms to complete high school as compared with 3.8 terms for the white student.

In 1934 Wilkerson² reported an extensive survey covering a number of school systems and concluded that the general achievement of Negro pupils tended to be lower than that of white pupils and that this difference increased through succeeding grade levels. More recently such studies as those made by the Educational Testing Service in the Atlanta schools support the earlier findings that the Negro rates below national norms in scholastic achievement.³

Information concerning the differences in intelligence between whites and Negroes is based primarily on the performance of these groups on commercial standardized tests. The social class bias of tests has been documented by Allison

¹Marion J. Mayo, The Mental Capacity of American Negroes, "Columbia Contributions to Philosophy and Psychology," No. 2 (New York: Columbia University, Bureau of Publications, 1913), p. 44.

²Doxey Wilkerson, "Racial Differences in Scholastic Achievement," The Journal of Negro Education, III (1934), pp. 453-477.

³Educational Testing Service, Statistical Report: Learning and Teaching in Atlanta Public Schools, Part 1, Report and Survey of Findings (Princeton, New Jersey: Educational Testing Service, 1955-56), pp. 23-25.

Davis¹ as well as Patricia Sexton.² Until very recently many of these tests were based upon language facility and verbal response, and because of the Negro pupils' limited opportunities were often an unfair and unreliable indicator of his potentiality.³

There is widespread belief that one reason for the poorer performance of Negro students on intelligence tests is their attitudes toward such tests. Evidence concerning the attitudes of many disadvantaged students toward intelligence tests is presented in two recent studies. In 1965 Brim⁴ reported on the partial results of a program of research on the social consequences of standardized ability tests. As a part of this program, two opinion surveys were conducted to obtain data concerning the attitudes of Americans toward intelligence tests. The results of these surveys indicated that many Americans over the age of eighteen are opposed to the use of such tests. The investigator found that one of the basic issues upon which anti-testing sentiment is based by both lay

¹Allison Davis, Social-Class Influences Upon Learning (Cambridge: Harvard University Press, 1948), p. 39.

²Patricia Sexton, Education and Income (New York: Viking Press, Inc., 1961), pp. 40-41.

³The Educationally Retarded and Disadvantaged, The Sixty-Sixth Yearbook of the National Society for the Study of Education, Part 1, Paul A. Witty, ed. (Chicago: The National Society for the Study of Education, 1967), p. 4.

⁴Orville G. Brim, Jr., "American Attitudes Toward Intelligence Tests," The American Psychologist, XX (1965), pp. 125-130.

and professional groups is the unfairness of the tests to minority groups. This criticism of tests of ability is that they screen out from opportunities of advancement those individuals from a background of cultural deprivation, who because of that deprivation give an inferior performance on the tests.¹

Similar findings are reported by Neulinger,² who conducted a questionnaire survey of 9,000 tenth- and twelfth-grade students in 59 of the Project Talent high schools. He found a number of positive attitudes toward mental tests but substantially more opposition to their use. He observed that attitudes toward tests were dichotomized by social class. The lower class student was prone to be anti-test, very likely assuming that tests are another means the school uses to "demean and degrade" him. Conversely, middle and upper class students who came from well educated families were pro-test. Neulinger states that the latter group of students believed generally that test data validate his placement in the school's intellectual and socially elite group. The questionnaire also revealed that the great majority of all respondents objected to the use of tests as a basis for job placement.

¹ Ibid., p. 126.

² John Neulinger, "Attitudes of American Secondary School Students Toward the Use of Intelligence Tests," Personnel and Guidance Journal, XLIII (December, 1966), pp. 337-41.

Not all investigators have reported negative findings with respect to the Negro pupils' performance on intelligence tests. For example, Semler and Iscoe¹ found no overall race differences in learning ability in a 1963 study of about 275 white and Negro children in public and private schools and kindergartens of Austin, Texas. The authors concluded that "while learning ability as measured by a paired-associates task may be different in the two groups at 5- and 6-year levels, it is not at 8- and 9-year age levels." They believe that their findings of no overall race differences in learning ability should not be minimized and that educators should use caution in inferring learning ability from measured intellectual level only.²

At the present time there is a dearth of published reports on the academic progress of Negro pupils in desegregated schools. Dreger and Miller stated:

. . . when objective studies have been made, the reports are generally favorable in terms of maintaining or raising educational achievement levels, although the evidence concerning other forms of reaction, especially emotional reaction, is not clear.³

¹I. J. Semler and I. Iscoe, "Comparative and Developmental Study of the Learning Abilities of Negro and White Children Under Four Conditions," Journal of Educational Psychology, LIV (1963), pp. 38-44.

²Ibid., p. 44.

³Ralph M. Dreger and Kent S. Miller, "Comparative Psychological Studies of Negroes and Whites in the United States: 1959-1965," Psychological Bulletin: Monograph Supplement, LXX (Sept., 1968), p. 23.

Purpose of the Study

The purpose of this study was to analyze the achievement levels of college freshmen from integrated secondary schools in comparison with those of freshmen from segregated schools.

Statement of the Problem

The problem of the study was to determine if there were significant differences in the academic achievement levels of college freshmen at Langston University who came from segregated and non-segregated secondary schools.

Research Hypothesis

Negro students at Langston University who enrolled as freshmen in the fall, 1969, who graduated from predominantly Negro (i. e.,--segregated) high schools will evidence different levels of performance than will Negro students at Langston University who enrolled as freshmen the same year, but who graduated from non-segregated high schools.

Questions explored in order to treat the research hypothesis were:

1. What are the characteristics of the population of the study in terms of:
 - a) Sex
 - b) High school background
 - c) Geographic background
 - d) Socio-economic background

2. How do these characteristics relate to measures of collegiate success as described by:
 - a) Academic achievement (GPA)
 - b) Leadership
 - c) Persistence (retention into the second semester)
3. How do the demographic characteristics relate to the segregated and non-segregated groups?

Importance of the Study

The results of this investigation should contribute in some measure to previous research designed to establish sound and reliable answers to the many questions concerning the effects of school desegregation upon the academic achievement of pupils. The study should be of interest to secondary and college guidance workers, educational administrators and college teachers. Furthermore, it should indicate whether any discernible trends in academic achievement among disadvantaged students are emerging at this stage of desegregation of schools. It should also help to define more clearly the features of the educational process that should be strengthened.

Study Design

1. An examination was made of the educational products of socially variant backgrounds, i.e., racially segregated vs. non-segregated secondary education.
2. The examination included an evaluation of data on two parts:

- a) Secondary school achievement (ACT scores and leadership)
- b) Collegiate level performance (GPA and persistence)
- 3. Also examined was the question of the appropriateness of conventional predictors of academic achievement in a contemporary situation.
- 4. The findings (similarities and differences) were treated by examining such data as:
 - a) Familial socio-economic information
 - b) Educational attainment of parents
- 5. Conclusions based on findings

Definition of Terms

Desegregation.--Educational desegregation is a politico-legal concept referring to the elimination of racial separation within school systems. "As such it embraces a variety of transitional situations having diverse effects upon the scholastic performance of Negro children." The meaning of desegregation has been broadened in recent years to include the reduction of racial clustering due to factors other than legal segregation--i.e., de facto segregation.¹

De facto segregation.--A term used to describe racial imbalance in schools (a predominance of minority group children).²

¹Irwin Katz, "Review of Evidence Relating to Effects of Desegregation on the Intellectual Performance of Negroes," The American Psychologist, XXIX (June, 1964), p. 381.

²United States Commission on Civil Rights, Civil Rights U. S. A.--Public Schools, Southern States (Washington, D. C.: United States Government Printing Office, 1962), (b).

De Jure Segregation.--A term used to describe segregation based on law or legal grounds.

Desegregated school.--As used in this report, a desegregated school is one in which the Negro enrollment is from 1.0 to 59.0 per cent.

Predominantly Black school.--For purposes of this study a predominantly Black school is one in which the Negro enrollment is from 60.0 to 100.0 per cent.

The terms Negro and Black are used to designate persons of African descent, and are used interchangeably throughout this report.

Drop-Out.--For purposes of this study, a drop-out is a student from the study population who was originally enrolled at Langston University during the fall semester, 1969, but who terminated his enrollment during or at the end of that semester.

Description of Sample

This study was limited to the freshman students who were in Langston University at Langston, Oklahoma during the fall semester, 1969-70. The investigation was based on data compiled from the entire full-time freshman group. For purposes of this study, a student who was enrolled in twelve or more hours during this period was considered a full-time student. The investigation included a total of two hundred ninety-one students. While the study was limited to

undergraduates, the subjects were not necessarily between the age range of eighteen and twenty-two.

Sources of Data

The first task of this investigation was to collect data on the social and economic background of each freshman student at Langston University, as well as information concerning the high school from which he graduated and his high school academic achievement. The steps used in collecting these data were as follows:

1. During the second nine-week period of the first semester, each freshman student was asked to complete a questionnaire which was designed to provide information concerning his socio-economic and high school background. This included data on his parents' education, mode of livelihood and family income. The questionnaire also elicited information concerning the students' sex, marital status, number of children, veteran status, major source of financial support, major field of study and his intention with respect to pursuing work leading to a bachelor's and post-bachelor's degree. Additional information included the name of the high school from which the student graduated, its location, and the year of his graduation; also the number of student organizations to which the student had belonged, the number of offices which he had held, and the number of committees on which he had served.

2. Information concerning the high school from which the students graduated included the total senior high (10th, 11th, and 12th grades) enrollment, the percentage or number of the Negro enrollment in the school, and information concerning its location as to type (urban, small town, or rural) and as to geographical area. These data were obtained by writing to the individual high schools. In a few cases, information was obtained from the Oklahoma State Department of Education, Technical Assistance, Human Relations Section.

3. Information pertaining to the student's secondary school achievement as determined by ACT scores was obtained from the Registrar's Office.

4. Information concerning collegiate level performance, including grade-point averages for the first semester and persistence, was also obtained from the Registrar's Office.

5. This combined information was brought together and arranged into the necessary categories by the use of a computer print-out. Statistical procedures which are described in Chapter III were applied to the collected data in an effort to discern significant patterns of achievement between the two groups, i.e., desegregated and predominantly Black; and among students from the various socio-economic strata.

Basic Assumptions

Unfortunately, no investigation can be wholly objective because of the basic assumption of indeterminacy which underlies all studies in the behavioral sciences. This research is no exception for it was assumed that the students who were studied were competent and were willing to give accurate information on the questionnaire. To maximize objectivity in this regard, the questionnaire was administered by college teachers in individual classrooms.

To complete the questionnaire, students were required merely to check answers that were arranged as multiple-choice questions. In constructing the questionnaire, judgments from educators and psychologists were secured so that wording and arranging of the questions would result in a minimum of inaccurate or prejudiced responses. In addition, an extensive review of comparable questionnaires used in other studies was made. A copy of the questionnaire appears in the appendix.

The second assumption was that the data from the Registrar's Office, as well as that supplied by the individual school principals, and by the Oklahoma State Department of Education were accurate.

Finally, while it is realized that ACT scores and grade-point averages (GPA) do not give a complete picture of student academic achievement, this study accepted the assumptions of many other investigators who found that type of data to be a reliable index of a student's achievement.

Limitations of the Study

This study is limited to the extent that the above assumptions can be called into question. Also, this investigation dealt with only one institution of higher education, and there is no intention to project these figures to other schools or to make inferences about the total impact of desegregation on the academic achievement of Negro students.

The limitation of time and expense precluded interviews with each of the students; therefore, no attempt was made to equate level of achievement to social status as perceived by the individual student. Students who are found on the college campus today come from a number of states and even several nations. Consequently, categorizing students according to techniques developed by sociologists was felt to be inadequate and it was therefore decided that classifications would be made on the basis of information obtainable in the various places mentioned above.

Finally, every investigation is limited to some extent by the statistical procedures employed. This research, like many others, relied on quantitative data with the full knowledge that quantitative standards, while widely used, do not encompass all aspects for evaluating high school excellence. Therefore, this study is subject to any limitation that is valid when statistical measurements and descriptions are applied to the assessment of achievement.

Organization of the Study

The report of this study is organized into five chapters. Throughout the present chapter introductory material has been presented which not only acts as a setting for the study, but also cites reasons for its importance. Attention has been directed toward the purpose of the investigation, the sources from which the data were gathered, and the limitations under which the entire study was undertaken. Also included in this chapter is the design of the study.

Chapter II is intended as a review of the literature pertinent to this investigation. The first part of the chapter outlines briefly the factors which are considered important not only to college achievement but also to gaining access to college. Works are cited and discussed in this section having to do with these factors. Attention is also directed to studies which question the appropriateness of at least one conventional predictor of academic achievement in a contemporary situation--that of the significance of intelligence test scores, particularly where the Black student is concerned. The review also cites works having to do with various socio-economic factors related to the academic achievement of Black students, particularly in desegregated schools. Chapter III contains the design of the study and a description of the procedures and statistical tools used to test the hypothesis. The basic data with which the study is concerned are presented and analyzed in Chapter IV. Chapter V is

composed of a summary of the study, and conclusions and recommendations based on the analysis and interpretation of the findings.

CHAPTER II

A REVIEW OF THE LITERATURE

During the last fifty years a growing body of literature has been compiled concerning socio-economic factors that seem to be decisive in shaping attitudes toward higher education. More recently, an increasingly impressive collection of writings describing the effects of socio-economic conditions on the motivations and achievements of minority groups has come into being, and with this literature has come greater insight into the problems of such groups.

The desegregation of public schools has given impetus to the apparent concern for a more adequate knowledge and understanding of Negroes as well as other minority groups. Various professional writers and student investigators have studied the problem with evident zeal.

This section will be devoted to an abbreviated resume of studies pertaining to factors which influence college attendance and academic achievement, of studies concerning the testing of Negro intelligence, and those relating to the economic and social environmental factors that affect the achievement of minority groups. Literature which pertains to

the academic performance of Negroes in desegregated schools is also discussed.

Factors Related to College Attendance and
Collegiate Academic Success

For many years successive studies have consistently shown that American education is not equally accessible to everyone. Studies relating to college attendance and factors related to collegiate academic success are generally consistent in their findings. Berdie,¹ Wright and Jung,² Little,³ and Coffelt⁴ reached similar conclusions: (1) boys outnumber girls 3 to 2 in the freshman year of college, although the number of boys and girls who graduate from high school are about equal; (2) there is a significant positive relationship at every level between ability and college-going, with those students in the top ability group enrolling in greater numbers than those in the lower ability groups; (3) that both the educational attainment and the occupations of parents have a

¹Ralph F. Berdie and Others, After High School What? (Minneapolis: University of Minnesota Press, 1954).

²Wendell W. Wright and C. W. Jung, Why Capable High School Students Do Not Continue Their Schooling (Bloomington, Ind.: Bulletin of the School of Education, Indiana University, XXXV, No. 1, January, 1959).

³J. Kenneth Little, A Statewide Inquiry Into Decisions of Youth About Education Beyond High School (Madison: The University of Wisconsin, 1958).

⁴John J. Coffelt, Post-High School Educational Plans of Colorado Public High School Seniors, Unpublished doctoral dissertation, University of Colorado, 1962.

strong influence on the college-going rates of high school graduates; (4) that there is an obvious relationship between economic status and college attendance; and (5) that there is a great reservoir of talent in every group of high school graduates that is not being utilized to the fullest extent.

The studies of Alexander and Woodruff,¹ Altman,² Garrett,³ and Harris⁴ indicate that intellectual factors are more predictive of collegiate achievement than non-intellectual factors, although the significance of the latter is not disputed. Intellectual factors found, in decreasing order of importance, were high school achievement (grade-point average and/or rank in class), subject matter test scores and measures of mental ability. Specific high school course grades in their relationship with college achievement were studied by some of these authors, who found that grades in specific high school courses seemed to correlate more highly with similar college course grades than overall collegiate grades.

¹N. Alexander and R. J. Woodruff, "Determinants of College Success," Journal of Higher Education, II (1940), pp. 479-485.

²E. R. Altman, "The Effect of Rank in Class and Size of High School in the Academic Achievement of Central Michigan College Seniors--Class of 1957," Journal of Educational Research, LII (1959), pp. 307-309.

³H. F. Garrett, "A Review and Interpretation of Investigations of Factors Related to Scholastic Success in Colleges of Arts and Science and Teachers' Colleges," Journal of Experimental Education, XVIII (1949), pp. 91-138.

⁴D. Harris, "Factors Affecting College Grades: 1930-37," Psychological Bulletin, XXXVII (1960), pp. 125-166.

In agreement with the above findings are Bloom and Peters¹ who found the best single predictor of college grades to be high school grades, with achievement test score and aptitude test scores being slightly less reliable as predictors. These authors found that each of the three factors, when employed singly, will ordinarily correlate with first year college grades within the range of +.40 to +.60. Used in combination, two or more of these factors will correlate with college grades within the +.55 to +.65 range. These ranges of predictive efficiency have remained unchanged over the past four decades.²

According to Schroeder and Sledge,³ who examined over 1,000 studies dealing with the subject, intellectual factors found, in decreasing order of importance, were high school achievement (grade point averages slightly superior to rank in class), subject matter test scores, and measures of mental ability.

¹Benjamin S. Bloom and Frank R. Peters, Academic Prediction Scales (New York: The Free Press of Glencoe, Inc., 1961), p. 25.

²Ibid.

³Wayne L. Schroeder and George W. Sledge, "Factors Related to Collegiate Academic Success," The Journal of College Student Personnel, VII (March, 1966), pp. 97-104.

The Appropriateness of Intelligence Test Results
As a Predictor of Negro Intelligence

Without negating the significance of intellectual factors generally in academic achievement, a great deal of evidence has been presented that raises a question of the appropriateness of intelligence test results as a predictor of Negro potential.

Educational and psychological literature abounds with descriptions of studies concerning the performance of Negro pupils in comparison with that of whites on tests of mental ability. Many of these studies are controversial, representing two opposing viewpoints. There are those who contend that I. Q. differences between Negroes and whites must be attributed, partially, to genetic differences, while others believe that the differences can be accounted for by differences in environmental conditions.

The Hereditarian Viewpoint

A study by Tanser¹ in 1939 represents staunch support for hereditarianism. This study revealed that Negroes living in Kent County, Ontario enjoyed "every political and social advantage" which whites had, but nevertheless their intelligence test scores were significantly lower than those of whites. Tanser's findings have been challenged by several

¹H. A. Tanser, The Settlement of Negroes in Kent County, Ontario, and a Study of the Mental Capacity of Their Descendents (Chatham, Ontario: Shepherd, 1939), p. 18.

scholars, notably Klineberg¹ and Smart.² Klineberg pointed out that he was born and reared in Canada and that although Negroes were reasonably well off, they emphatically did not enjoy conditions of complete equality or an environment free from prejudice. He thought instead that Canada was very similar to the Northeastern part of the United States, and that in fact there was a high correlation between racial attitudes of Canadian and American students. He stated, further, that although he did not know Kent County, he did not think it could be exceptional.

Smart confirmed Klineberg's suspicions and declared that she wished to refute Tanser's contention that the Negro in Kent County, Ontario, had equal social advantages with whites. Smart had been reared in Kent County, and recalled that even though Negroes had the right to vote, living conditions, employment, education, segregated theater seating and a previously all-Negro school definitely showed that there were unequal social conditions for Negroes and whites.

Another study which contributed to the theory of hereditarianism in intellectual functioning was made by

¹Otto Klineberg, "Negro-White Differences in Intelligence Test Performance: A New Look at an Old Problem," American Psychologist, XVIII (1963), pp. 198-203.

²M. S. Smart, "Confirming Klineberg's Suspicions," American Psychologist, XVIII (1963), p. 621.

McGurk.¹ He attempted to determine whether or not socioeconomic differences are sufficient to account for the consistently lower average intelligence test scores obtained by Negroes. His subjects were selected from a total of 2,863 seniors in 14 high schools in Northern New Jersey and Southeastern Pennsylvania, seven high schools being urban, five suburban, and two rural. In three large high schools only academic and commercial pupils were tested; in the other eleven schools all members of the senior class who were present were examined. Except for 20 Negroes who were either absent on the testing days or whose records were not sufficiently complete for classification, all Negro seniors enrolled in the 14 high schools were included in the sample. An equal number of whites was matched with the 213 Negro subjects for age, curriculum, and school attended. The subjects were given sets of cultural and non-cultural questions.

The total test performance revealed the mean score of the 213 Negro pupils to be significantly below the matched group of 213 white subjects. According to McGurk the data indicated that the Negro subjects were significantly inferior on the average to the equated group of white subjects on the test as a whole, and that in the several comparisons the racial differences were greater for the non-cultural than for

¹Frank C. J. McGurk, Comparison of the Performance of Negro and White High School Seniors on Cultural and Non-Cultural Psychological Test Questions (Washington, D. C.: Catholic University of America Press, 1951), p. 87.

the cultural questions. He concluded, therefore, that "There is no evidence here that culturally weighted test material discriminates against the Negro. There is no evidence that as the socio-economic status of the Negro increases, racial test-score differences decrease."¹

In 1966 Coleman² and others assessed vocabulary, non-verbal ability, reading comprehension, mathematics achievement, and general information across racial and ethnic lines by using a test battery comprised of items from published tests, some of which were in current use in the schools. Motivation for future achievement was studied by questionnaire. In grade 12, the average scores obtained by white students in all regions were above those of all groups except Orientals who, in certain regions, had higher mean scores in mathematics and non-verbal ability. Racial and ethnic groups, in general, on all tests ranked in the following order: White students, Orientals, Indians, Mexican-Americans, Puerto Ricans and Negroes. Averages for Negro students tended to be about one standard deviation below whites in grade 12. In general, achievement was found to be consistently lowest in non-metropolitan South and highest in the metropolitan North.

¹Frank C. J. McGurk, "On White and Negro Test Performance and Socio-Economic Factors," Journal of Abnormal and Social Psychology, XLVIII (1953), p. 450.

²James S. Coleman and Others, Equality of Educational Opportunity (Washington, D. C.: U. S. Department of Health, Education, and Welfare, Government Printing Office, 1966), p. 737.

Greater regional variation in achievement was found for Negro than for white students. The longer Negroes stayed in school, the greater their relative deficit became in general school achievement, especially in the South and Southwest non-metropolitan areas. Intermediate deficits were found in Southwestern and Southern metropolitan areas and in Northern and Western non-metropolitan areas. Little or no decline was found in Northeastern, Midwestern, and Western metropolitan areas.

One of the most recent and controversial contributions to the theory of hereditarianism is that by Jensen,¹ who contends that I. Q. is determined much more by genetic than by environmental influences. He uses this argument to account for what he considers the failure of recent compensatory education to produce lasting effects on children's I. Q. and achievement and suggests that the premises on which these efforts have been based should be reexamined.

Jensen has concluded that prenatal influences contribute the largest environmental influence on the I. Q. He concedes that extreme environmental deprivation can keep the child from performing up to his genetic potential, but contends that an enriched educational program cannot push the child above that potential.

¹Arthur R. Jensen, "How Much Can We Boost I. Q. and Scholastic Achievement?" Harvard Educational Review, XXXIX (Winter, 1969), pp. 1-123.

Because of the controversial nature of Jensen's essay, it has resulted in a great deal of criticism and a number of rebuttals. Kagan,¹ Hunt² and Deutsch³ are among the psychologists who have brought their disciplines and assumptions to bear on the issues raised in the essay.

Kagan was critical of the logic of Jensen's article and presented evidence to show that any I. Q. data collected in the standardized manner may not reflect the actual potential of lower class children. He reports, for example, that longitudinal studies being conducted in his laboratory reveal that lower class white children perform less well than middle class children on tests related to those used in intelligence tests; that these class differences with white populations occur as early as one to two years of age. Kagan points out that detailed observations of the mother-child interaction in the homes of these children indicate that the lower class children do not experience the quality of parent-child interaction that occurs in the middle class homes. The lower class mothers spend less time in face to face mutual vocalization with their

¹Jerome S. Kagan, "Inadequate Evidence and Illogical Conclusions," Harvard Educational Review, XXXIX (Spring, 1969), pp. 274-277.

²J. M. V. Hunt, "Has Compensatory Education Failed? Has It Been Attempted?" Harvard Educational Review, XXXIX (Spring, 1969), pp. 278.

³Martin Deutsch, "Happenings on the Way Back to the Forum: Social Science, I. Q. and Race Differences Revisited," Harvard Educational Review, XXXIX (Summer, 1969), pp. 523-557.

infants, they do not reward the child's maturational progress, and they do not enter into long periods of play with the child. Kagan states that his theory of mental development suggests that specific absence of these experiences will retard mental growth and will lead to lower intelligence test scores; and that the most likely determinants of the Black child's lower I. Q. scores are his experiences during the first five years of life.

Dr. Kagan believes that the essential error in Jensen's argument is the conclusion that if a trait is under genetic control, differences between two populations on that trait must be due to genetic factors. In support of his rebuttal to that conclusion, Kagan quotes Professor Gottesman,¹ a leading behavioral geneticist, who wrote:

. . . Even when gene pools are known to be matched, appreciable differences in mean I. Q. can be observed that could only have been associated with environmental differences. In a study of 38 pairs of identical twins reared in different environments, the average differences in I. Q. for these identical twins was 14 points, and at least one quarter of the identical pairs of twins reared in different environments had differences in I. Q. score that were larger than 16 points. This difference is larger than the average difference between black and white populations. The differences observed so far between whites and Negroes can hardly be accepted as sufficient evidence that with respect to intelligence the Negro-American is genetically less endowed.

¹I. I. Gottesman, "Biogenetics of Race and Class," In M. Deutsch, J. Katz, and A. R. Jensen (eds.), Social Class, Race, and Psychological Development (New York: Holt, Rinehart, and Winston), 1968, p. 238.

Dr. Hunt, of the University of Illinois, is in agreement with the above position, and finds Jensen's claims about the high heritability of intelligence unsubstantiated; and finds even less supportable Jensen's conclusion that observed group mean differences in I. Q. scores among Negro and white populations are genetically determined.¹

One of the most scathing denunciations of Jensen's essay was made by Deutsch² who states:

I should like to make it clear at the outset . . . that in Jensen's article I found many erroneous statements, misinterpretations, and misunderstandings of the nature of intelligence, intelligence tests, genetic determination of traits, education in general, and compensatory education in particular. A colleague reports coming across 17 such errors in a casual perusal.

. . . I am publishing this critique because I believe the impact of Jensen's article was destructive; that it has had negative implications for the struggle against racism and for improvement of the educational system. The conclusions he draws are, I believe, unwarranted by the existing data, and reflect a consistent bias towards a racist hypothesis.³

Deutsch points out that, contrary to the impression given by the mass media, Jensen offers no new data to support his position, but only a reorganization of existing old data, and that the data are mostly psychometric and not experimental or genetic. He also observes that Jensen does add some of his own work on associative versus conceptual learning, on the

¹Hunt, op. cit., p. 284.

²Deutsch, op. cit., p. 524.

³Ibid., p. 526.

basis of which he concludes that Black children are more capable of concrete learning than of learning by abstraction. The policy implications he derives from this conclusion involve different curricula for Black children and different expectations of their eventual intellectual level.

Professor Deutsch,¹ in his critique, points out numerous omissions and inconsistencies in Jensen's essay and offers corrections for them. He observes that Jensen's main omission is the picture of a complex and multifaceted environment, with which individuals interact in highly complicated and differentiated ways, and that once that concept is firmly fixed, it would seem impossible to hold a simplistic view of the respective roles of heredity and environment in influencing intelligence test performance.

Deutsch concludes his discussion with a quotation from Dobzhansky,² a geneticist who, in the context of affirming the rights of scientists to free inquiry and free expression of views, stated:

The opinions uttered by scientists are, however, prone to be utilized by politicians and propagandists for purposes of their own. Is a scientist accountable for misuses of his discoveries and utterances? He ought to be articulate enough at least to disown such misuses.

¹ Ibid., p. 528.

² T. Dobzhansky, "Genetics and the Social Sciences," In D. C. Glass (ed.), Genetics (New York: The Rockefeller University Press and Russell Sage Foundation, 1968), pp. 129-142.

The Environmentalists' Viewpoint

While not as numerous, perhaps, as the contributions to the hereditarian point of view, several studies emphasize the importance of environmental influence on intellectual functioning. For example, Pettigrew,¹ citing newer concepts of intelligence, contends that racists doctrines are outmoded and pointed out how changing environments, especially education, have led in a number of instances to the improvement of Negro I. Q.'s and achievements. He gives as an example the Banneker School Project in St. Louis. This project attacked the complacent attitude toward low achievement prevalent among city slum children and vigorously attempted to develop middle class attitudes "through motivation, drives, and desires for success." The driving force behind this achievement project was Samuel Shepard, Jr.,² an assistant superintendent of one of St. Louis' five elementary school districts which in 1959 was composed of 23 schools whose combined enrollment was 95 per cent Negro. In the two years between 1957-58--when the project was begun--and 1959-60, the 8th graders from Banneker District accepted on Track I (high achievers) increased from

¹T. F. Pettigrew, "Negro American Intelligence: A New Look at an Old Controversy," Journal of Negro Education, XXXIII (1964), pp. 6-25.

²Samuel Shepard, Jr., The Banneker School Project, Section II, Seventh Annual Professional Institute, Division of School Psychologists, American Psychological Association (Nashville, Tenn.: George Peabody College for Teachers, 1962), pp. 9-16.

7 to 16 per cent, and those entering Track III (low achievers) dropped from 47 to 24 per cent. The median I. Q. of the Banneker High 8th graders in 1952-53 was reported to be 84.9, and in 1958-59 it was reported as being 90.5.¹

Findings which showed an increase in I. Q. under certain conditions were also reported by Gray and Klaus² who worked with 22 Black children. These subjects were given intensive training during three successive summers and in additional separate work by home visitors throughout the intervening school years. At the conclusion of the study, which was begun in the early summer of 1962 and ended in the late summer of 1964, the children had advanced in I. Q. from 85 to 95, a gain of 10 points.

In keeping with the foregoing are the results of an experiment by Brazziel and Terrell.³ These investigators organized a six-weeks enriched program and administered it to one first-grade group of 26 Black children in Millington, Tennessee. These children were described as being culturally disadvantaged as were the three other groups of Black first graders in the same town who made up the control groups.

¹ Southern School News, V (January, 1959), p. 12.

² Susan W. Gray and R. A. Klaus, An Experimental Pre-School Program for Culturally Deprived Children, unpublished paper, 1964.

³ William F. Brazziel and Mary Terrell, "An Experiment in the Development of Readiness in a Culturally Disadvantaged Group of First-Grade Children," Journal of Negro Education, XXXI (1962), pp. 4-7.

During the study, the authors discussed the program with parents at weekly intervals, used a 30-minute educational television program which was watched by the children daily in their homes, and engaged in a six-weeks period of intensified activity to develop perception, vocabulary, word reasoning, ability and will to follow directions. At the end of seven months of schooling, the experimental group was given the Detroit Intelligence Test. The investigators report that the mean I. Q. was 106.5 and the standard deviation, 13.2. They conclude with the statement: "An efficacious combination consisting of a direct parent-teacher partnership, permissive regimentation, test wisdom development, excellent materials and energetic uninhibited teaching seems to have been the main discovery of this study."¹

Another example of the considerable influence of environment is seen in the study of identical twins by Newman, Freeman, and Holzinger.² This study revealed that the I. Q. scores of identical twins who were reared apart and who were separated during the first three years of life showed a correlation of .79 with educational advantage. Three other

¹Ibid., p. 6.

²H. H. Newman, F. N. Freeman and J. K. Holzinger, Twins: A Study of Heredity and Environment (Chicago: University of Chicago Press, 1937), p. 209.

investigators, Bloom,¹ Stone and Church² used the Newman data and reported similar results pertaining to pairs of twins. Bloom divided the identical twins reared apart into two groups. In one group of 11 pairs with very similar educational environments, the rank order correlation of I. Q. test scores was .91, in contrast with a rank order correlation of .24 for the 8 pairs of twins with less similar educational environment. Stone and Church classified 10 pairs of twins as having larger differences in educational advantage and nine pairs of twins as having smaller differences. They found that seven pairs of the twins in the larger DSEA group had I. Q. differences of less than 10 points. In the group with the smaller DSEA, all pairs of twins showed I. Q. differences of less than 10 points.

Studies supporting the environmentalist viewpoint generally agree that intelligence tests indicate very little, if anything about capacity or about general learning ability, or that they even reflect a child's current cognitive skills, to say nothing of predicting his potential skills, especially if facilitating stimuli are given.³

¹B. S. Bloom, Stability and Change in Human Characteristics (New York: Wiley, 1964), p. 218.

²L. J. Stone and J. Church, Childhood and Adolescence, 2nd ed. (New York: Random House, 1968).

³Martin Deutsch, op. cit., p. 541.

Other Factors

Turning to factors other than mental ability as determined by intelligence tests, Roper,¹ in an intensive study a few years ago, concluded that three critical factors figure heavily in whether a given student actually attends college. These factors are: (1) sex of student, (2) academic standing of student in high school, and (3) the socio-economic standing of the student's family. Similar findings were reported by Stroup and Andrews² who found that race, sex, high school grades, enrollment and standing of high school attended, parents' economic standing, and student's place of residence were the outstanding considerations in whether a student continues to college after completing high school.

The size and quality of a student's high school has long been a topic for researchers interested in the origins of college students. Referring again to Stroup and Andrews,³ this study showed that seniors from larger high schools and from schools with the highest academic ratings went to college in greater proportion than seniors from schools with smaller

¹American Council on Education, Factors Affecting the Admission of High School Seniors to College; A Report by Elmo Roper for the Committee on a Study of Discrimination in College Admissions (Washington, D. C.: American Council on Education, 1949), p. 24.

²Francis Stroup and Dean C. Andrews, Barriers to College Attendance (Magnolia: Southern Arkansas State College, 1959), p. 79.

³Ibid., p. 83.

enrollments and lower ratings. That the high school attended is a useful predictive index for a student's intention to attend college is also seen in Roper's¹ study which was mentioned earlier. This investigation revealed that school income per capita and average expenditure per student are both well known indicators of college attendance.

Social class differences in the background of college students also have long held the attention of investigators. Hollingshead,² in Elmtown's Youth, convincingly demonstrated the relationship of social class to educational and vocational counseling. Havighurst³ reported that in 1960, of the upper and upper-middle class 85 per cent of the males and 70 per cent of the females entered college; of the lower-middle class, 55 per cent of the males and 35 per cent of females continued their education after high school; of the upper-lower class, 25 per cent of the males and 18 per cent of the females continued; and of the lower-lower class, only 10 per cent of the males and 5 per cent of the females entered college. In keeping with these findings are the results of an

¹Roper, op. cit., p. 28.

²A. B. Hollingshead, Elmtown's Youth (New York: John Wiley, 1949), p. 480.

³Robert J. Havighurst, Growing Up in River City (New York: John Wiley, 1960), pp. 99-118.

investigation by Kenneth Little,¹ who conducted a two-year study of academically talented youth who graduated from Wisconsin high schools in the spring of 1957. Segments of the study included: (1) a survey in spring 1957 of their plans for education beyond high school; (2) a follow-up survey of their parents in the fall of 1957 to learn what these graduates were actually doing and what the parents thought about the value of a college education. Among his conclusions were:

1. The persistent and pervasive way in which the socio-cultural background of the families, especially the educational attainment of the parents, conditions the educational aspirations and attitudes of the high school graduates is perhaps the most striking finding about factors which influence the decisions about college attendance. This priority does not deny existence of financial barriers which deter the college attendance of highly capable youth, but the economic barriers are intertwined with such factors as inadequacy of knowledge about opportunities for self-help, loans or scholarships, or lack of knowledge about, or strong interest in, what colleges offer to them.

2. In general, the cultural level and educational attainment of parents, the attitudes and values of close friends, and the psychosocial characteristics of the graduates themselves outweigh such factors as size and strength of a high school program, nearness to a college, or family income as influences upon decisions to attend college.

Havighurst and Taba² also found that home environment plays a significant role in determining who will attend

¹J. Kenneth Little, "Wisconsin Study of Academically Talented High School Graduates: Their College Plans and Progress," Higher Education: Incentives and Obstacles, Nicholas C. Brown, ed. (Washington, D. C.: American Council on Education, 1960), p. 61.

²Robert J. Havighurst and Hilda Taba, Adolescent Character and Personality (New York: John Wiley, 1948), pp. 31-46.

college. These writers contend that in most families of low social status neither the intrinsic worth of an education nor the intellectual values that are typically stressed in a school environment are impressed upon children in their early years.

Further attesting to social class differences in the background of college students is a report by McConnell¹ showing that winners and runners-up of the National Merit Scholarships came in upwards of 35 per cent of the cases from families engaged in the professions. This report also noted that another group, comprising about 22 per cent of the total recipients, came from families of the managerial classes. Only about 7 per cent came from skilled or unskilled labor classes.

Also interesting to note is a study by Young,² who discovered that significantly more parents of college going than non-college attending students had graduated from college. Furthermore, these parents were not exclusively professionals and executives for members of the managerial class were well represented among them.

Closely related to factors conducive to college attendance is the matter of cultural influences that cause

¹T. R. McConnell, "Differential Selectivity of American Higher Education," The Coming Crisis in the Selection of Students for College Entrance, Kenneth E. Anderson, ed. (Washington, D. C.: American Educational Research Association, 1960), p. 31.

²Donald Delos Young, "Parental Influence Upon Decisions of Scholastically Talented Youths Concerning Higher Education," Unpublished Ph. D. dissertation, University of Wisconsin, 1958.

differences in performance on intelligence tests. Lehmann¹ found that when scores are compared differences do exist among students from various socio-economic strata, as well as between rural and urban school children. Along the same lines, Havighurst and Janke,² found a relationship between ability and social status, indicating that high family social position corresponds to high ability generally. On two intelligence tests, as well as on a reading test given to both groups, Havighurst's survey of ten-year-old children in a mid-western county-seat town of ten thousand population showed that rural-urban differences are consistently in favor of urban children.

Several other studies have shown a relationship between academic achievement and socio-economic status. Hieronymus³ found a significant relationship between school achievement and socio-economic status even when test

¹Irvin J. Lehmann, "Rural-Urban Differences in Intelligence," Journal of Educational Research, LIII (October, 1959), pp. 62-68.

²Robert J. Havighurst and Leota L. Janke, "Relations Between Ability and Social Status in a Midwestern Community," Journal of Educational Psychology, XXXV (September, 1944), pp. 357-368.

³Albert N. Hieronymus, "A Study of Social Class Motivation: Relationship Between Anxiety for Education and Certain Socio-Economic and Intellectual Variables," Journal of Educational Psychology, XLII (April, 1951), pp. 193-205.

intelligence was ruled out. In much the same vein, Frankel,¹ investigated achieving and underachieving boys of the same high intellectual ability in an effort to determine causes for differences between the two groups. Among factors in the study were home conditions, family background, and socio-economic status. It was found that achievers came from families rated significantly higher both socially and economically than those of the underachievers. Moreover, more of the fathers of the achievers than the underachievers were found in the top three groups, i.e., professional, semi-professional and proprietor-managers.

A number of studies indicate that students from larger schools do better work in college. From a study in Arkansas, Keister² found that freshmen at Arkansas State College during the fall of both 1950 and 1953, coming from Class "A", "B" and "C" schools, showed noteworthy differences. The author noted that factors such as length of term, quality of library, degrees of the faculty, and pupil load are all elements which accrediting teams consider when reviewing schools for membership in the North Central Association. The study not only showed that college freshmen from schools

¹Edward Frankel, "A Comparative Study of Achieving and Underachieving High School Boys of High Intellectual Ability," Journal of Educational Research, LIII (January, 1960), pp. 172-180.

²Baird V. Keister, "Relation Between High School Accreditation and Success in College," College and University, XXX (April, 1955), pp. 284-288.

accredited by the North Central Association had higher I. Q. scores than those from schools with lower accreditation but that differences in quality of scholarship of these students were in favor of the graduates from schools with higher accreditation. Bledsoe¹ also found that the chances are slightly favorable that the graduates of the larger high schools will achieve better average marks in college. Hoyt,² another investigator, found that there was a distinct trend for students from the smaller high schools to receive lower grades in college when he adjusted the achievement marks to high school rank.

Not all investigations show that place of residence, socio-economic status, intellect, education of parents, educational preparation, and size of high school are crucial in an educational career. For example, Washburne³ found that urbanism was correlated positively and significantly with academic success for students at the small-town college he studied but not for students at the city college participating in his investigation. Washburne also concluded that

¹Joseph C. Bledsoe, "Do Graduates of Large High Schools Perform Significantly Better in College?" College and University, XXX (October, 1954), pp. 60-64.

²Donald P. Hoyt, "Size of High School and College Grades," Personnel and Guidance Journal, XXXVIII (April, 1959), pp. 569-573.

³Norman F. Washburne, "Socio-Economic Status, Urbanism and Academic Performance in College," Journal of Educational Research, LIII (December, 1959), pp. 130-137.

socio-economic status is not significantly related to academic performance. Centi,¹ studying only students in a large urban university, found no significant relationship between achievement marks of students and the occupations of their parents. In addition, when the high and low scoring students were grouped according to the educational level attained by their parents, it was found that no significant differences existed. Saupe² and Lathrop,³ in research projects at the University of Missouri and Iowa State College respectively, found that high school size had little correlation with academic achievement in college.

Still another writer, Young,⁴ advises caution in using pre-college background and training as a basis for predicting a student's success in higher education. The factors generally thought to be crucial in an educational career, according to his study, may not be as critical as was formerly thought.

¹Paul J. Centi, "Highest and Lowest Ranking Students at the School of Education of a Large Urban University," Personnel and Guidance Journal, XXXVII (February, 1959), pp. 457-459.

²Mildred W. Saupe, "Size of High School as a Factor in the College Success of Average and Superior Graduates," American Association of Collegiate Registrars' Journal, XVII (October, 1941), pp. 45-47.

³Irvin T. Lathrop, "Scholastic Achievement at Iowa State College Associated with High School Size and Course Patterns," Unpublished Ph. D. dissertation, Iowa State College, 1958.

⁴Kenneth E. Young, "Who Can and Should Go to What Kind of College," Unpublished Ph. D. thesis, Stanford University, 1953.

The writer based this conclusion on the fact that the wide diversity of higher educational institutions in the United States makes it possible for students with varying preparation and ability to select an educational institution that provides a program suited to their needs and thereby making it possible for them to achieve some degree of success.

The Academic Performance of Negro Students
in Desegregated Schools

Turning to academic achievement of Negro pupils in segregated and desegregated schools, Crowley¹ sought to determine if there is a significant difference in academic achievement between Negro students who received their education in mixed schools, and Negro students who attended segregated schools in Cincinnati. She found:

1. The academic achievement of segregated school children to be similar to that of Negro pupils in mixed schools of the same age, grade, and intelligence.
2. The segregated schools were as effective on the whole as were the mixed schools in the academic training of Negro children.
3. If any true difference existed between the efficiency of the segregated schools as compared with the mixed, it was with respect to functions or activities other than those of academic training.

¹ Mary R. Crowley, "Cincinnati's Experiment in Negro Education, A Comparative Study of the Segregated and Mixed Schools," Journal of Negro Education, I (April, 1932), pp. 25-33.

In a more recent investigation, Samuels¹ studied the achievement of Negro pupils in desegregated schools and found:

It was evident that the longer the association between any particular group of white and Negro students, the smaller the difference in academic achievement appears to be. It was evident that the Negro students who had been educated in mixed schools achieved as well and sometimes better than students in the segregated programs.

Stallings² reported on the results of achievement testing in the Louisville school system in 1955-56, the year prior to total elimination of legal segregation, and again two years later. Gains were found in the median scores of all pupils for the grades tested, with Negroes showing greater improvement than whites. The report gave no indication of whether the gains for Negro students were related to actual change in the racial composition of schools. In fact, Stallings stated, "The gains were greater when Negro pupils remained with Negro teachers." A later survey on Louisville by Knowles³ indicated that Negro teachers had not been assigned to classrooms having white students during the period of

¹Ivan C. Samuels, "Desegregated Education and Differences in Academic Achievement," Unpublished doctoral dissertation, Indiana University, June, 1958.

²F. H. Stallings, "A Study of Immediate Effects of Integration on Scholastic Achievement in the Louisville Public Schools," Journal of Negro Education, XXVIII (Fall, 1959), pp. 439-444.

³L. W. Knowles, "Part I, Kentucky," In United States Commission on Civil Rights, Civil Rights U. S. A.--Public Schools, Southern States (Washington, D. C.: U. S. Government Printing Office, 1962), pp. 19-56.

Stallings' research. This means that the best Negro gains observed by Stallings were made by pupils who remained in segregated classrooms and can be attributed to factors other than desegregation.

A detailed account of academic progress in the Washington schools has been given by Hansen.¹ The results of a city-wide testing program begun in 1955 indicated year-to-year gains in achievement on every academic subject tested at every grade level where the tests were given. The data were not broken down by race. As in the case of Louisville, it seems reasonable to attribute these gains primarily to an ambitious program of educational improvement rather than to desegregation.

The academic achievement of Negro graduates of segregated southern high schools who attended integrated colleges has been reviewed by the National Scholarship Service and Fund for Negro students (NSSFNS).² The report stated:

Tabulations of the academic progress of former NSSFNS counselees and scholarship holders show that 5.6 per cent of these students had a scholastic average of A or A-; 50.3 per cent B+, B or B-; 32.4 per cent C+, C, or C-; and .7 per cent D or below. Not listing grades were 11 per cent. Fewer than 5 per cent withdrew from college for any reason. This record of college success of an educationally

¹C. F. Hansen, "The Scholastic Performance of Negro and White Pupils in the Integrated Public Schools of the District of Columbia," Harvard Educational Review, XXX (Summer, 1960), pp. 216-236.

²National Scholarship Service Fund for Negro Students, Annual Report, 1962-1963 (New York: NSSFNS, 1963), p. 9.

and economically underprivileged group is far above the national average, which shows an over 40 per cent incidence of dropouts from all causes.

It should be noted that these students were carefully selected by NSSFNS for their academic qualifications. Nevertheless, the NSSFNS experience demonstrates that qualified Southern Negro youth can function effectively in desegregated colleges.

Reports of widespread academic failure on the part of desegregated Negro pupils are not easily found. Among those that have appeared recently is one by Day,¹ who reported on the schools of Chapel Hill, North Carolina. Referring to a total of approximately 45 Negro students in predominantly white schools, he stated that the experience of two years of desegregation has shown "a disturbing portion of Negro pupils attending desegregated schools have failed to keep pace with their white classmates . . ." Another researcher, Wyatt,² quoted the superintendent of schools in Nashville, Tennessee, as stating there was substantially more difficulty with Negro students entering desegregated situations in the upper grades. Most of the difficulties were ascribed to problems of social

¹R. E. Day, "Part 2, North Carolina," In United States Commission on Civil Rights, Civil Rights U. S. A.--Public Schools, Southern States (Washington, D. C.: U. S. Government Printing Office, 1962), pp. 57-104.

²E. Wyatt, "Part 3, Tennessee," In United States Commission on Civil Rights, Civil Rights, U. S. A.--Public Schools, Southern States (Washington, D. C.: United States Government Printing Office, 1962), pp. 105-130.

adjustment, although the cumulative effect of the generally lower achievement in the Negro schools was credited with some responsibility for the situation.

Bindman¹ concentrated on Negro male undergraduates in an integrated university. The basic data which he used to measure college preparation were the precollege test scores and high school ranks of Negro male undergraduates from both predominantly integrated and segregated high schools and from different socio-economic backgrounds. The measure of the precollege preparation of the respondents was either their American College Test (ACT) score, or their School and Ability Test (SCAT) score. He found that the Negro students were proportionately less adequately prepared for college level work than their white counterparts. Seventy per cent (107) of the 154 respondents had precollege test scores which ranked them below the 50th percentile of the specific college of their choice within the university. Contrary to what is generally expected, this investigator found that the differences in the degree of integration of the respondents' high schools did not distinguish the more academically prepared from the less academically prepared undergraduate.

¹Aaron M. Bindman, "Pre-College Preparation of Negro College Students," The Journal of Negro Education, XXXV (Fall, 1966), pp. 313-321.

Buck¹ reported that the average Negro freshman, in the college of one state, was 19 years old, had an I. Q. of 90, and read at the eighth grade level. Reading ability ranged from a grade level of 4.0 to 13.9 with most freshmen in the 7.0 to 9.0 range. Froe² made a survey-type study to obtain information "that will facilitate a systematical description (largely noncognitive) of a population of college freshmen, predominantly Negro, usually described as culturally disadvantaged. His findings were similar to those of Buck.

A recent study concerning factors relative to performance of Black undergraduate students was made in Tennessee by Bradley.³ The purpose of his study was to investigate selected characteristics and academic performance of Negro undergraduate students who enrolled in seven formerly all-white colleges and universities in Tennessee between September, 1963 and June, 1965. Included in the study were 583 students who graduated from high school either in 1963 or 1964. The mean high school grade point average computed for 409 of

¹James R. Buck, Jr., Some Identifiable Characteristics of Students Entering Negro Senior Colleges in Mississippi. (Nashville: George Peabody College for Teachers, 1964), pp. 63-344.

²Otis D. Froe, "A Comparative Study of a Population of 'Disadvantaged' College Freshmen," The Journal of Negro Education, XXXVII (Fall, 1968), pp. 370-382.

³Nolen E. Bradley, "The Negro Undergraduate Student: Factors Relative to Performance in Predominantly White State Colleges and Universities in Tennessee," The Journal of Negro Education, XXXVI (Winter, 1967), pp. 15-23.

424 entering as beginning freshmen was 2.75 on a 4.00 scale. Only 1.3 per cent of the transfer students were admitted on probation. Most of the students (93.4 per cent) registered in the schools of liberal arts, education, or business administration.

The only entrance test used by all seven was the American College Test (ACT). The mean scores for three parts of this test plus the composite were between 15.1 and 15.6; the mean score in mathematics was only 13.6. The mean scores on each of the five parts of the ACT for these students fell below the 50th percentile for national twelfth grade students and below the 20th percentile for national college bound students.¹ The investigator concluded that the ACT English, natural sciences, and mathematics scores had no predictive value for the Black undergraduate students enrolled in the seven predominantly white state colleges and universities in Tennessee.²

The above conclusion is in agreement with that of two other investigators, Clark and Plotkin.³ They stated, in their use of the Scholastic Aptitude Test of the College Entrance Examination Board:

These scores and those from similar examinations, cannot be used as a basis for predicting the academic

¹Ibid., p. 17. ²Ibid., p. 23.

³Kenneth B. Clark and Lawrence Plotkin, The Negro Student at Integrated Colleges (New York: National Scholarship Service Fund for Negro Students, 1963), p. 26.

success of the Negro students of this sample--or probably Negro students in general--in the same way that they are used to predict college success for more privileged white students.

Race as an influence on intelligence may fluctuate, according to some investigators. In four studies--Anastasi and D'Angelo,¹ Higgins and Sivers,² Clarke,³ and Lacy⁴--white and Negro comparison groups of children drawn from northern integrated schools and areas were tested. In the first three of these studies, no significant I. Q. differences were found between races. In one of the studies, Negroes were found to be significantly lower on the Colored Raven Progressive Matrices (CRPM) I. Q. This was attributed, however, to deficiency in a special skill since no significant difference was found on the Stanford-Binet I. Q. In the fourth study, in which the sample was drawn from a segregated community, Negroes were found to have significantly lower Binet or Otis I. Q.'s than whites. These data suggest that race, in itself,

¹Anne Anastasi and Rite Y. D'Angelo, "A Comparison of Negro and White Preschool Children in Language Development and Goodenough Draw-A-Man I. Q.," Journal of Genetic Psychology, LXXXI (1952), pp. 147-165.

²C. Higgins and Cathryne H. Sivers, "A Comparison of Stanford-Binet and Colored Raven Progressive Matrices I. Q. for Children with Low Socio-Economic Status," Journal of Consulting Psychology, XX (1958), pp. 265-268.

³D. P. Clarke, "Stanford-Binet Scale 'L' Response Patterns in Matched Racial Groups," Journal of Negro Education, X (1951), pp. 230-238.

⁴L. D. Lacy, "Relative Intelligence of White and Colored Children," Elementary School Journal (1926), pp. 542-546.

has no effect on general aptitude except in the context of severe caste limitations.

Psychological Factors in Desegregated School Situations

In reporting effects of desegregation on the intellectual performance of Negroes, Katz¹ cited four situational determinants that may greatly affect Black students in their academic performance in desegregated situations. They are: (1) social threat, (2) social facilitation, (3) probability of success, and (4) failure threat. He defined social threat as being "a class of social stimulus events that tend to elicit anxious expectations that others will inflict harm or pain." Katz believes it likely that new experiences or new contacts with white strangers are apt to represent a social threat for members of a minority group. Therefore, it is not surprising that Black children will be under some degree of social threat in a recently integrated classroom.

In discussing social facilitation, Katz cited studies by Bass,² French and Raven,³ and Thibaut and Kelley⁴ which

¹Katz, op. cit., p. 381.

²B. M. Bass, "Conformity, Deviation, and a General Theory of Interpersonal Behavior," In I. A. Berg and B. M. Bass (eds.), Conformity and Deviation (New York: Harper, 1961), pp. 38-100.

³J. R. P. French and B. Raven, "The Bases of Social Power," In D. Cartwright and A. Zander (eds.), Group Dynamics, 2nd ed., (Evanston, Ill.: Row Peterson, 1960), pp. 607-623.

⁴J. Thibaut and H. H. Kelley, The Social Psychology of Groups (New York: Wiley, 1959), p. 210.

showed that individuals are responsive to the standards of those with whom they desire to associate. That Black children want friendship with white classmates was shown by Horowitz¹ and Yarrow.² Another study, by Criswell,³ indicates that Black children in racially mixed classrooms accept white prestige but withdraw into their own group as a response to white rejection. Therefore, if the Black child's desire for acceptance is not inhibited or destroyed by sustained unfriendliness from the white group, he will tend to adopt the scholastic standards of the high status majority group.

Several recent studies have dealt with the question of the probability of success as a factor in academic achievement. In 1958 Atkinson⁴ developed a hypothesis to the effect that the strength of motivation is at a maximum when the probability of success is .50, and diminishes as this possibility approaches zero or 1.00. This hypothesis has been supported by

¹E. Horowitz, "The Development of Attitudes Toward the Negro," Archives of Psychology, XXVIII (January, 1936), pp. 5-45.

²Marian R. Yarrow, "Interpersonal Dynamics in a Desegregation Process," Journal of Social Issues, XIV (1958), pp. 1-215.

³Joan H. Criswell, "A Sociometric Study of Race Cleavage in the Classroom," Archives of Psychology, XXXIII (January, 1939), pp. 5-82.

⁴J. W. Atkinson, "Motivational Determinants of Risk Taking Behavior," In J. W. Atkinson (ed.), Motives in Fantasy, Action, and Society (New York: Van Nostrand, 1958), pp. 322-240.

the findings of Murstein and Collier¹ as well as those of Rosen.² Thus, it is apparent that if the Negro student has reason to believe that it is impossible for him to achieve academic success in a desegregated situation, his scholastic motivation is greatly reduced.

Failure threat is described as a "class of stimulus events in an achievement situation which tend to elicit anxious expectations of harm or pain as a consequence of failure."³ It has been suggested by Sarason⁴ and his associates that a high expectancy of failure arouses strong feelings of hostility against the persons from whom negative evaluation is foreseen. They believe that the hostility is turned inward against the self in the form of self-derogatory attitudes, which strengthen the expectancy of failure. Therefore, distraction by these and other types of emotional conflict may have an extremely adverse effect on the individual's performance.

¹Bernard I. Murstein and H. L. Collier, "The Role of the TAT in the Measurement of Achievement as a Function of Expectancy," Journal of Projective Techniques, XXVI (March, 1962), pp. 96-101.

²M. Rosen, "Valence, Expectancy, and Dissonance Reduction in the Prediction of Goal Striving," Dissertation Abstracts, XXI (1960), p. 3846.

³Katz, op. cit., p. 383.

⁴S. B. Sarason and Others, Anxiety in Elementary School Children (New York: Wiley, 1960), p. 316.

Katz¹ reported, also, that among the desegregated situations that may be detrimental to the academic performance of Black students are social rejection and isolation, fear of competition from whites, unrealistic feelings of inferiority, and psychological stress.

A condition of desegregation that was highly stressful for Negro children and which reflects the effects of social rejection and isolation is described by Coles,² a psychiatrist, who writes of the first Black children to enter White schools in Atlanta and New Orleans:

When they are in school they may experience rejection, isolation, or insult. They live under what physicians would consider to be highly stressful circumstances . . .

During a school year one can see among these children all of the medical and psychiatric responses to fear and anxiety. One child may lose his appetite, another may become sarcastic and have nightmares. Lethargy may develop, or excessive studying may mark the apprehension common to both. At the same time one sees responses of earnest and effective work. . . . Each child's case history would describe a balance of defenses against emotional pain, and some exhaustion under it, as well as behavior which shows an attempt to challenge and surmount it. . . .

Although all reports are not as unfavorable as the one above, it is believed that any or all of the situational factors mentioned earlier may be operative in specific instances. Further, research on psychological stress generally

¹Katz, op. cit., p. 385.

²R. Coles, The Desegregation of Southern Schools: A Psychiatric Study (New York: Anti-Defamation League, 1963), pp. 4-5.

supports the assumption that social threat and failure threat are detrimental to complex learning.¹

In summary, this review of the literature indicates that certain social and economic factors are at work in determining in many situations, not only who will go to college but also in affecting academic achievement after the student arrives on the campus. Moreover, these same socio-economic factors appear to have an impact on intelligence test scores, thereby limiting their usefulness as a predictor of Negro potential and his chances for academic success. Much of the literature convincingly demonstrated that a relationship exists between intellectual development and environment, that the environment may stimulate or hamper the growth of individuals. This fact has resulted in the emergence of new concepts of intelligence as being learned and additive.

Although reports concerning the performance of Black students in desegregated school situations are encouraging in some respects, it is apparent that such reports are inadequate for drawing conclusions about the effects of biracial environments upon Negro performance generally.

¹Ibid., p. 396.

CHAPTER III

DESIGN AND PROCEDURES OF THE STUDY

The investigation concerned itself with a comparison of the academic achievement of two groups of freshmen--those from nonsegregated secondary schools and those from racially segregated or predominantly Black schools. The examination included an evaluation of data on two parts: (1) secondary school achievement as determined by scores on the American College Testing Program (ACT), and leadership (membership and activity in student organizations); and (2) collegiate level performance as determined by grade point average (GPA) and persistence (continuation into second semester). Also examined was the question of the appropriateness of conventional predictors of academic achievement in a contemporary situation.

In order to identify students belonging to each of the designated groups, i.e., nonsegregated and segregated, it became necessary during the planning stage of the study to decide what percentage of Negro enrollment would constitute each group. A diligent search of educational literature, as well as material provided by law libraries for a precise definition of the terms proved fruitless. Several sources,

Dentler and Others,¹ Black,² and Morsell,³ provided information that was somewhat inconsistent. For example, Dentler stated: "Most current work on the problem of desegregation defines a school as racially segregated if its student ratio of Negroes to whites is substantially in excess of the ratio common to the community as a whole." Another author, John Morsell, writing in the Journal of Negro Education, said:

. . . The phrase "in other than all-Negro schools" cries out for more precise definition, inasmuch as the addition of a single white, Indian, or Chinese pupil in an all-Negro school removes it from the class of "all-Negro schools." For this reason, the Office of Education supplemented its 1966-67 data with figures on the proportions of Negro children in schools which are "more than 95 per cent Negro."

The same writer⁴ in discussing a 1968 report of the Office of Civil Rights concerning desegregation observed:

. . . The Federal agency has again changed its definition of a "desegregated" school. The . . . figure applies only to Negro children attending schools in which at least 50 per cent of the students are white.

Finally, it was decided that for purposes of this study, secondary schools with a Negro enrollment from 1.0 to

¹Robert A. Dentler and Others, The Educational Complex Study Project, Institute of Urban Studies, Columbia University (New York: Board of Education of the City of New York, 1965).

²Henry C. Black, Law Dictionary (St. Paul, Minn.: West Publishing Company, 1957), pp. 479-481.

³John A. Morsell, "Racial Desegregation and Integration in Public Education," The Journal of Negro Education, XXXVIII (Summer, 1969), pp. 276-284.

⁴Ibid., p. 278.

59.9 per cent would be considered nonsegregated and those consisting of an enrollment of 60.0 to 100.0 per cent Negro would be considered racially segregated or predominantly Black.

Measures of academic potential obtained on the fall, 1969 entering freshmen class included students' Composite Standard Scores on the American College Testing (ACT) Program, with scores for the sub-tests, English and Mathematics. Information was also obtained, through questionnaire, concerning the students' participation in high school organizations and activities. It was believed that the extent of such participation would indicate, in some measure, the students' social and leadership qualities.

Description of the Instrument

The American College Test (ACT)

The ACT is designed to measure ". . . the ability of a student to perform those intellectual tasks he is likely to face in his college studies."¹ The ACT battery yields four test scores and a composite score. The four tests are (1) English, (2) Mathematics, (3) Social Sciences, and (4) Natural Science. The composite score is the average of the four test scores, and is generally viewed as a good

¹American College Testing Program, ACT--Using ACT Scores on Your Campus (Iowa City: The American College Testing Program, Inc., 1962), p. 8.

indicator of probable freshman success in college. Only the composite scores and the English and mathematics scores were used in this study. The latter two were chosen because a degree of proficiency in these areas is usually considered to be crucial in achieving academic success at the college level.

Standard ACT scores range from a low of 1 to a high of 36. Since some of the tests in the battery contain more questions than others, the standard score is used to enable comparisons to be made of performance on the different tests. The average score for all four tests in the battery is referred to as a composite standard score.

In 1959, the Oklahoma State Regents for Higher Education authorized and requested each institution in the State System to require entering freshman applicants to submit scores from the American College Testing Program. Each institution also serves as a testing center for the ACT program for high school seniors and for applicants who have not taken the test. Since present policies on the admission of first time freshmen to Oklahoma state colleges and universities recognize attainment on the ACT program as one basis for admission to college, ACT scores were obtained and compiled for the students included in this study.

Student participation in high school organizations was evaluated in terms of (1) the number of organizations of which he served as president, chairman, or cochairman; (2) the number of other offices held in any organization, election as

a delegate to conventions, and subcommittee chairmanships; (3) committees worked on in departmental clubs, religious organizations, and intramurals participation; and (4) membership in organizations not reported in any of the preceding categories.

Collegiate level performance was computed on the basis of grade-point averages at the end of the first semester and persistence into the second semester. The grade-point averages were obtained from the Registrar's Office and not computed especially for this investigation. The Langston University Catalog¹ states that a student's grade-point average is determined by dividing the total number of grade points earned by the total number of hours attempted. Langston University rates a grade of "A" as having four points, a grade of "B" as three points, a "C" has two points, and a "D" as having one point. No points are given for a grade of "F". For this study the students were grouped by categories in which the grade-point averages range from (1) 0.00 to 1.04; (2) 1.05-2.04; (3) 2.05-3.04; and (4) 3.05-4.00.

Persistence into the second semester was computed by simply making a count of the freshmen who failed to enroll for the second semester.

The question of the appropriateness of conventional predictors of academic achievement was examined by careful

¹Langston University Catalog, 1970-71 (Langston, Okla.: Langston University, 1970), pp. 23-24.

scrutiny of current literature concerning the education of disadvantaged youth. Writers appeared to be almost unanimous in the decision that intelligence tests are of little, if any, value in predicting the potential of such youth. Since many of Langston University's students are from disadvantaged homes, it follows that results of such tests would not be an appropriate predictor of academic success on the part of its students. While it is generally assumed that socio-economic factors have some bearing on the academic achievement of young people, it seems likely that their effect on disadvantaged youth might not be so highly significant. Therefore, the conventional predictors of academic success, with the exception of I. Q. as determined by intelligence tests, were considered appropriate in this investigation.

The findings, i.e., similarities and differences, resulting from the foregoing examination were treated by examining certain socio-economic factors to determine their influence on the achievement patterns. These factors included the occupation of the students' parents, the family income, the educational level which the parents achieved, and the type, size, and location of the secondary schools from which the students graduated. After the data were collected according to the procedures outlined in Chapter I, it was necessary to structure these four variables so they would have tangible attributes and meaningful boundaries. At times this seemed to be rather arbitrary and not altogether according to guidelines

delineated in sociology texts; however, it is believed that the categories discussed below are well suited for describing the freshman students enrolled during the first semester of the 1969-70 academic year at Langston University.

The occupation of the students' parents was obtained from a questionnaire which each student completed. The occupational categories used in the questionnaire were taken from the Dictionary of Occupational Titles.¹ They include (1) Professional and Managerial; (2) Clerical and sales; (3) Service occupations; (4) Farming, fishery and related occupations; (5) Processing occupations; (6) Machine trade occupations; (7) Bench work occupations; (8) Structural work occupations; and (9) Miscellaneous occupations.

The category labeled professional and managerial includes persons engaged in medicine, law, religion and theology, education, museum work, librarianship; and managers, officials, writers. The clerical and sales group of occupations includes stenography, typing, filing, computing and accounting, recording, material and production recording, salesmanship, etc. Included in the service occupations are food and beverage preparation and service, lodging and related services, barbering, cosmetology and related services, protection services, etc.

¹Dictionary of Occupational Titles, 1965, Vol. 2, Occupational Classifications, 3rd ed. (Washington, D. C.: U. S. Government Printing Office, 1965), pp. 1-2.

The category labeled farming, fishing and forestry includes those families who derive their income from plant farming, animal farming, fishery, forestry, agricultural service and the like. The next group, labeled processing occupations, is comprised of refining and foundry; processing of food, tobacco and related products; the processing of paper and related materials; petroleum, coal, etc. The machine trade occupations include metal machining, metal working, wood machining, printing, and paper working.

The occupational category labeled bench work is made up of fabrications, assembly, repair of metal products and similar occupations. Structural work occupations include welding, flame cutting, painting and plastering. And finally, the category labeled miscellaneous occupations includes such work activities as transportation, amusements, recreation, graphic arts, extracting minerals, and labor. In addition to the above occupations, some students listed welfare as the family's principal means of support, and others indicated that their fathers were unemployed or that his occupation was unknown.

The income categories were formulated in accordance with those found in the Statistical Abstract¹ for nonwhite members of the population. Income levels were categorized as

¹U. S. Bureau of the Census, Statistical Abstract, 1969, 90th ed. (Washington, D. C.: U. S. Department of Commerce, Bureau of the Census, 1969), p. 322.

follows: (1) under \$1,000; (2) \$1,000 to \$2,999; (3) \$3,000 to \$4,999; (4) \$5,000 to \$6,999; (5) 7,000 to \$8,999; (6) \$9,000 to \$10,999; (7) \$11,000 to \$12,999; (8) \$13,000 to \$14,999; and (9) over \$15,000. Most of the data for this part of the study were obtained through the questionnaire. In cases where the student indicated that he did not know the amount of the family income, or where the indicated income was not in keeping with the parent's occupation, information was obtained from the Financial Aids Office of the college. A majority of students indicated their family had an income of between \$5,000 and \$6,999. The other income levels were distributed throughout the student body. The exact ratios in which the students could be found in this and other socio-economic categories are discussed in the following chapter.

Whenever information is desired that is derived from computations based on the education of students' parents, it is necessary to give some consideration to the educational attainment of both father and mother. In attacking this problem, some studies have used only the highest grade level attained by either the father or the mother. If the father had completed ten years of schooling and mother completed twelve, only the mother's score of twelve was considered. It is generally believed that the parent having the most formal education exerts the greatest influence on the family as a whole insofar as the children's education is concerned.

While consideration was given to the idea of using only the score of the parents with the highest level of educational attainment, it was finally decided to include the education of both parents. The categories devised and used were (1) eighth grade or less, (2) some high school work, (3) high school graduate, (4) some college work, (5) college graduate, and (6) graduate or professional degree beyond the baccalaureate. When parents were not living, the students were asked to substitute the education of their guardians.

In order that the secondary schools from which the students graduated could be matched with academic achievement, it was necessary to rank the high schools in some logical order. In attacking this problem, some studies have used index numbers. It was decided that for this study the schools would be categorized as to type as follows: (1) Urban-Large, (2) Urban-Medium, (3) Small town, and (4) Rural. On the basis of geographic location, they were categorized as (1) in-state and (2) out-of-state, with the latter category being broken down into the following subdivisions: Northeast, Southeast, Northern plains, Southwest, Mountain, Farwest, and Northwest. The categories that were established on the basis of enrollment were: (1) 0 to 749; (2) 750 to 1,249; (3) 1,250 to 1,999; and (4) 2,000 and above.

Several statistical techniques were used to analyze the data. Tabulations and percentages were used to summarize the data describing the two groups. The tools for analyzing

the data were nonparametric tests which avoid the assumptions inherent in parametric procedures. Among the assumptions are: that the observations under study must be drawn from populations which have the same variance, that the observations must be independent, and that the variables are measured in at least an interval scale.¹

The analysis of these data, therefore, rested on different types of chi-square tests. The chi-square test, a commonly used technique for analyzing data in the social sciences, was used because it allows for measurement between discrete categories and comparisons of attributes. Its main purpose is to give a measure of the probability of obtaining a disagreement between observed and computed frequencies equal to or greater than that observed in either direction.²

For purposes of this investigation, the values yielded by the tests are reported in Chapter IV at the .05 level of significance. This is done by describing a result as probably significant if its probability of error is less than five per cent.³

¹George A. Ferguson, Statistical Analysis in Psychology and Education, 2nd ed. (New York: McGraw-Hill Book Company, 1966), p. 294.

²Ibid., pp. 191-194.

³Murray R. Spiegel, Theory and Problems of Statistics, Schaum's outline series (New York: Schaum Publishing Co., 1961), p. 174.

In summary, students participating in the study were divided into two groups: One consisting of students from secondary schools with Negro enrollments of from 1.0 to 59.9 per cent, and the other composed of students who graduated from schools with Negro enrollments of 60.0 to 100.0 per cent.

Data for this investigation were collected at Langston University of Langston, Oklahoma. Information was obtained from both the students and the college registrar. The students contributed to the task by completing a questionnaire which dealt with their families' social and economic status, as well as the name and location of the high schools from which they graduated, their intentions with respect to obtaining the baccalaureate and postbaccalaureate degrees, and their college majors. The registrar's office at Langston provided such data as the grade-point averages and whether the student enrolled for the second semester, or dropped out prior to that time. Other pertinent information regarding the students' secondary schools was collected from the high school principals in seventeen different states and in Oklahoma. A small part of the information was provided by the Human Relations Section of the Oklahoma State Department of Education.

Four socio-economic categories were established, and the students were arranged into these groupings. The four categories were the occupations of the students' parents, the total income of the family at the time the student graduated

from high school, the amount of schooling that was achieved by the parents and the size of the high school from which the student graduated.

CHAPTER IV

ANALYSIS OF DATA

The main purpose of this investigation was to determine whether evidence exists which indicates that Negro students at Langston University who enrolled as freshmen in the fall, 1969, who graduated from nonsegregated high schools (i.e., schools with a Negro enrollment of 1.0 to 59.9 per cent, designated as Group A) will show different levels of performance than will Negro students at Langston University who enrolled as freshmen the same year but who graduated from predominantly Black (i.e., schools with a Negro enrollment of 60 to 100 per cent, designated as Group B) secondary schools.

The present chapter is devoted to the presentation of a profile of the socio-economic and academic characteristics of Langston University students who enrolled as freshmen in the fall, 1969. This profile includes the ACT scores of students comprising the two groups, as well as student participation in secondary school organizations and activities. Comparison will be made also, of the collegiate level performance of the groups, i.e., grade-point averages and persistence into the second semester. In addition, secondary school and collegiate level performance are compared with size,

type, and geographic location of schools, as well as with the socio-economic variables of parental occupation, family income, and the educational attainment of parents. Attention is also given to academic achievement between the sexes of each group.

Socio-Economic Characteristics of Langston
University Freshmen, Fall, 1969

This section of the investigation will be concerned with the socio-economic characteristics of Langston University freshmen who participated in the study.

Sex

Male students participating in the study outnumbered the women students. The subjects included 154, or 52.9 per cent men, and 137, or 47.1 per cent women students, as may be seen in Table 1.

TABLE 1

PERCENTAGE DISTRIBUTION OF FRESHMEN STUDENTS
AT LANGSTON UNIVERSITY, BY SEX, FALL, 1969

Group	Males		Females		Total
	Number	Per Cent	Number	Per Cent	
A	65	49.6	66	50.4	131
B	89	55.6	71	44.4	160
Total	154		137		291

Marital Status

The great majority of students included in the study were single, with 80.4 per cent of the entire study population reporting an unmarried status. The marital status of students included in each group is reported in Table 2.

TABLE 2

MARITAL STATUS OF LANGSTON UNIVERSITY
FRESHMEN, FALL, 1969

Group	Single		Married		Divorced or Separated		Widowed		Total
	Num- ber	Per Cent	Num- ber	Per Cent	Num- ber	Per Cent	Num- ber	Per Cent	
A	103	79.0	17	13.0	11	8.0	0	0.0	131
B	131	81.8	23	14.4	6	3.8	0	0.0	160

Number of Dependents

Students reporting no children numbered 264, or 90.7 per cent of the study population. Nine students from both groups had only one child. The highest number reported by Group A was four, and the highest for Group B was six, with only one student reporting this number of children. Table 3 shows the number of dependents of students in each group.

TABLE 3

NUMBER OF DEPENDENTS OF LANGSTON UNIVERSITY
FRESHMEN, FALL, 1969

Group	Number of Children								Number of Other Dependents							
	0	1	2	3	4	5	6		0	1	2	3	4	5	6	
A	116	9	3	2	1	0	0		124	5	1	1	0	0	0	
B	148	9	2	0	0	0	1		155	4	1	0	0	0	0	

Number of Veterans

The number of veterans enrolled at Langston University has shown a gradual decline during past years. Of the students included in this study, only 11 or 3.8 per cent of the entire study population were veterans. These data may be seen in Table 4.

TABLE 4

PERCENTAGE OF VETERANS AMONG LANGSTON
UNIVERSITY FRESHMEN, FALL, 1969

Group	Number of Veterans	Per Cent
A	5	3.8
B	6	3.8

Primary Source of Financial Support

Since most students receive their basic support for college attendance from one of three sources, the following categories were devised for obtaining information in this respect: (1) family, (2) scholarship, and (3) yourself. The majority of students in Group A, 72 or 55.0 per cent, indicated family as the primary source of financial support. Eighty, or 50.0 per cent of Group B, indicated family as their primary source of support. It was interesting to note that 30 or 22.9 per cent of Group A stated that they supplied their own major support. Most of these indicated that they worked during the summer months to earn tuition and had work-study programs during the school term. Thirty-one, or 19.4 per cent of Group B considered themselves their primary source of support.

A number of students included financial assistance such as work-study grants in the category of scholarships. In such cases, the student was contacted and, through personal interview, information was obtained which permitted accurate classification of his primary source of financial support.

Table 5 presents a summary of sources of financial support.

Geographic Origin

In this study, a student's residence was considered to be the city, county or state in which the high school he

TABLE 5

PRIMARY SOURCE OF FINANCIAL SUPPORT OF LANGSTON
UNIVERSITY FRESHMEN, 1969

Group	Family		Scholarship		Yourself	
	Num- ber	Per Cent	Num- ber	Per Cent	Num- ber	Per Cent
A	72	55.0	29	22.1	30	22.9
B	80	50.0	49	30.6	31	19.4

attended is located. As Table 6 indicates, 209, or 71.8 per cent of the students included in the study graduated from Oklahoma high schools. Eight-two, or 28.2 per cent graduated from schools outside the state.

TABLE 6

GEOGRAPHIC ORIGIN (IN-STATE AND OUT-OF-STATE)
LANGSTON UNIVERSITY FRESHMEN, FALL, 1969

Group	Oklahoma		Out-of-State		Total
	Number	Per Cent	Number	Per Cent	
A	109	84.0	22	16.0	131
B	100	62.5	60	37.5	160

Note: A student's residence is considered to be in the city, county, state, or country in which the high school he attended is located.

Geographic Origin (Regional)

Students participating in the study graduated from high schools located in 17 different states. Illinois led the out-of-state students with a total of 23; Tennessee followed with 13 students. Among the other states represented were California, Pennsylvania, and Michigan.

Out-of-state regional areas were designated as follows:

(1) Northeast--including states such as New Jersey, New York, and Pennsylvania; (2) Southeast--including Alabama, Florida, Tennessee, etc.; (3) Northern Plains--with states such as Illinois, Indiana, Michigan, etc., (4) Southwest--including Arkansas, New Mexico, Texas, etc.; (5) Mountain--with states such as Colorado, Idaho, etc.; (6) Far-West--which includes California, etc.; and (7) Northwest--including Washington State, North Dakota, etc.

In Group A, students from the Northern Plains led the list with a total of ten, followed by four from both the Southwest and Far-West.

For Group B, the area with the largest representation was also the Northern Plains, with 22 students, followed by 18 from the Southeast. A percentage distribution of students from each region is given in Table 7.

Size of High Schools

In order to determine whether evidence exists to support the notion that secondary schools with large enrollments

TABLE 7
GEOGRAPHIC ORIGIN (REGIONAL) OF LANGSTON
UNIVERSITY FRESHMEN, FALL, 1969

Group	Northeast		Southeast		Northern Plains		Southwest		Mountain		Farwest	
	Num- ber	Per Cent	Num- ber	Per Cent	Num- ber	Per Cent	Num- ber	Per Cent	Num- ber	Per Cent	Num- ber	Per Cent
A	1	4.6	0	0.0	10	45.5	4	18.0	3	13.7	4	18.0
B	10	16.7	18	30.0	22	36.7	8	13.3	0	0	2	3.0

graduate students who enjoy greater academic success than do those from smaller schools, students included in this study were arranged into groups according to the size of the high schools from which they graduated. Table 8 shows the percentage distribution of Langston University freshmen according to the size of their high schools. As can be seen from this table a total of 131 students, or 45 per cent of those included in the study graduated from secondary schools in which the enrollment was 749 or less. The majority, 77, or 58.8 per cent of the students from Group A came from such schools, while 54, or 38.8 per cent of Group B graduated from schools with enrollments in that category.

TABLE 8
PERCENTAGE DISTRIBUTION OF LANGSTON UNIVERSITY
FRESHMEN ACCORDING TO SIZE OF
HIGH SCHOOL, FALL, 1969

Group	High School Enrollment								Total
	0-749		750-1249		1250-1999		2000 and above		
	Num-	Per	Num-	Per	Num-	Per	Num-	Per	
	ber	Cent	ber	Cent	ber	Cent	ber	Cent	
A	77	58.8	30	22.9	13	9.9	11	8.4	131
B	54	33.8	32	20.0	50	31.2	24	15.0	160

Types of High Schools

Just as it is often believed that graduates from large schools achieve greater collegiate academic success than those from smaller schools, it is also believed that students from urban schools fare better in college than do those from small town and rural schools. As was shown in Chapter II, several studies have confirmed both of these notions. In order to see if these beliefs would prove to be true in this study, schools were categorized as to type as urban-large, urban-medium, small town, and rural. Seventy, or 24 per cent of the students participating in the study graduated from schools classified as urban-large; 91 or 31.3 per cent were from urban-medium schools; 24.4 came from small towns; and 59 or 20.2 per cent graduated from rural schools. The percentage distribution of students from each category is shown in Table 9.

TABLE 9

PERCENTAGE DISTRIBUTION OF LANGSTON UNIVERSITY
FRESHMEN ACCORDING TO TYPE OF HIGH
SCHOOL, FALL, 1969

Group	Urban- Large		Urban- Medium		Small Town		Rural	
	Num- ber	Per Cent	Num- ber	Per Cent	Num- ber	Per Cent	Num- ber	Per Cent
A	11	8.4	37	28.3	51	38.9	32	24.4
B	59	36.9	54	33.7	20	12.5	27	16.9
Totals	70		91		71		59	

Parental Occupations

According to information obtained from the questionnaires completed by students and by a few interviews, those participating in the study came from families with occupations as shown in Table 10. The large numbers indicated in the unemployed categories for both Group A and B included some parents who are retired. Similarly, mothers who were listed as housewives, with no designated occupation, were also placed in this category. The percentage distribution of parental occupations is presented in Table 10.

Statistical computation for the significance of difference between Groups A and B in terms of their parents' occupations showed a Chi-square of 4.535. This was less than the critical ratio of 3.841 at the .05 level with one degree of freedom. Therefore there was no significant difference between the two groups. Data are shown in Table 11.

Family Income

When turning from the occupations of the students' parents to a consideration of family income, equally interesting findings seem to appear. After all parental incomes were divided into the nine pre-arranged classes, it was found that students appeared in their respective categories with frequencies shown in Table 12.

Information concerning family income was obtained, for the most, through answers provided by questionnaires. In

TABLE 10
PARENTAL OCCUPATIONS OF LANGSTON UNIVERSITY
FRESHMEN, FALL, 1969

Occupations	Group A				Group B			
	Father		Mother		Father		Mother	
	Num- ber	Per Cent	Num- ber	Per Cent	Num- ber	Per Cent	Num- ber	Per Cent
Professional and Managerial	22	16.8	20	15.3	20	12.5	19	11.9
Clerical and Sales	10	7.6	11	8.4	8	5.0	20	12.5
Service Occupations	3	2.3	26	19.8	13	8.1	--	--
Farming	15	11.4	--	--	2	1.3	--	--
Processing Occupations	4	3.0	--	--	8	5.0	--	--
Machine Trades	14	10.7	2	1.5	17	10.6	--	--
Bench Work Occupations	5	3.8	4	3.0	4	2.5	--	--
Structural Work	8	6.1	--	--	14	8.8	--	--
Miscellaneous, Including Laborers	34	25.9	2	1.5	48	30.0	--	--
Unemployed	16	12.2	66	50.4	26	16.3	121	75.6

TABLE 11

CONTINGENCY TABLE SHOWING THE RELATIONSHIP
BETWEEN GROUPS A AND B IN TERMS OF
PARENTAL OCCUPATION

Fathers' Occupations	Group A		Group B		Total Observed Frequency
	Observed Frequency	Expected Frequency	Observed Frequency	Expected Frequency	
Professional and Managerial	22	19.4	20	22.6	42
Clerical and Sales	10	8.3	8	9.7	18
Skilled	34	41.6	56	48.8	90
Unskilled	49	45.7	50	5.3	99
Totals	115		134		249

$$\chi^2 = 4.535$$

a few cases the Financial Aids Office supplied the necessary data, which were obtained for 278, or 95.9 per cent of students participating in the study.

As can be seen in Table 12, the family income of the majority of Group A was found to be in the category of \$3,000 to \$4,999, with 34, or 25.9 per cent of the students designating that as representing their family income. This was followed by the \$7,000 to \$8,999 bracket for 30, or 22.8 per cent of the students in Group A.

TABLE 12
FAMILY INCOME OF LANGSTON UNIVERSITY
FRESHMEN, FALL, 1969

Income	Group A		Group B	
	Number	Per Cent	Number	Per Cent
Under \$1,000	2	1.5	1	.63
\$1,000 to \$2,999	4	3.0	6	3.8
\$3,000 to \$4,999	34	25.9	38	23.7
\$5,000 to \$6,999	19	14.39	36	22.5
\$7,000 to \$8,999	30	22.89	31	19.3
\$9,000 to \$10,999	18	13.7	18	11.4
\$11,000 to \$12,999	9	6.87	8	5.0
\$13,000 to \$14,999	7	5.34	9	5.6
\$15,000 and over	3	2.2	5	3.1
No Reply	5	3.8	8	5.0

Median income of Group A--\$5,499.50

Median income of Group B--\$4,971.72

Median income for combined groups--\$5,392.40

Most of the students in Group B were also found to be in the category of \$3,000 to \$4,999, with 38, or 23.7 per cent of the group placing themselves there. The bracket of \$5,000 to \$6,999 closely followed with 36, or 22.5 per cent of the students in that group.

The median income of Group A was \$5,499.50, for Group B, \$4,971.72, and for the combined groups the median income was \$5,392.40. The statistical difference between the groups in terms of income is shown in Table 13.

TABLE 13
CONTINGENCY TABLE SHOWING THE RELATIONSHIP
BETWEEN GROUPS A AND B IN TERMS
OF FAMILY INCOME

	Group A	Group B	Total
Above median	66	73	139
Below median	63	86	149
Total	129	159	288

$$\chi^2 = .590$$

Chi-square was calculated and as indicated above was .590, which is less than the critical ratio of 3.841 with one degree of freedom at .05 confidence level. Thus, there was no significant difference between the family incomes of the two groups.

Educational Attainment of Parents

Another of the social and economic variables that is being examined in this study was designed to provide evidence as to whether the education of the students' parents had any effect upon the students' academic achievement. Many studies have shown that parents with a college background are more likely to send their children to college than those without such education.

Data concerning the educational achievement of the students' parents are given in Tables 14 and 15.

The largest number of students in Group A, 35, or 26.7 per cent, indicated the highest educational attainment of their fathers to be high school graduation. Thirteen, or 9.9 per cent of this group stated that their fathers were college graduates, and 9, or 6.9 per cent said their fathers had earned graduate or professional degrees.

Students in Group B reported that 45, or 28.1 per cent of their fathers had completed high school; 9, or 5.6 per cent of the fathers were college graduates; and 7, or 4.4 per cent reported their fathers as having earned a graduate or professional degree.

The educational attainment of the students' mothers is very similar to that of the fathers. Fifty-three, or 40.4 per cent of the students in Group A, and 51, or 31.9 per cent of those in Group B indicated the highest educational attainment of their mothers was high school graduation. Twelve,

TABLE 14
EDUCATIONAL ATTAINMENT OF FATHERS OF LANGSTON UNIVERSITY
FRESHMEN, FALL, 1969

Group	8th Grade or Less		Some High School Work		High School Graduate		Some College Work		College Graduate		Grad. or Prof. De- gree Be- yond Bach.		No Reply	
	Num- ber	Per Cent	Num- ber	Per Cent	Num- ber	Per Cent	Num- ber	Per Cent	Num- ber	Per Cent	Num- ber	Per Cent	Num- ber	Per Cent
A	29	22.1	20	15.3	35	26.7	19	14.5	13	9.9	9	6.9	6	4.6
B	40	25.0	34	21.3	45	28.1	16	10.0	9	5.6	7	4.4	9	5.6

TABLE 15
EDUCATIONAL ATTAINMENT OF MOTHERS OF LANGSTON UNIVERSITY
FRESHMEN, FALL, 1969

Group	8th Grade or Less		Some High School Work		High School Graduate		Some College Work		College Graduate		Grad. or Prof. De- gree Be- yond Bach.		No Reply	
	Num- ber	Per Cent	Num- ber	Per Cent	Num- ber	Per Cent	Num- ber	Per Cent	Num- ber	Per Cent	Num- ber	Per Cent	Num- ber	Per Cent
A	11	8.4	27	14.5	53	40.4	20	15.3	12	9.2	7	5.3	1	.763
B	18	11.3	43	26.9	51	31.9	26	16.2	13	8.1	9	8.8	0	0

or 9.2 per cent of Group A said their mothers were college graduates, while 13, or 8.1 per cent of Group B made similar reports. Members of Group A reported 7, or 5.3 mothers as having obtained a graduate or professional degree, and their counterparts in Group B claimed that 9, or 8.8 per cent of their mothers had earned that degree. A complete summary of the mothers' educational attainment is given in Table 15.

The material presented in the foregoing pages was meant to provide a profile of the students involved in the study and relevant information concerning the social and economic settings from which they came.

Secondary School Achievement

ACT Composite Scores

The basic instrument for assessing the secondary school achievement of Langston University freshmen included in this study was the American College Test (ACT). The composite scores on this test achieved by high school graduates are believed to indicate their chances for academic success at the college level. According to a recent report, the average composite score of a total enrollment of 55,122, representing a sample of 118 colleges, was 18.2.¹ A composite score of 12 would place an individual at about the 20th percentile.

¹American College Testing Program, College Student Profiles: Norms for the ACT Assessment (Iowa City: The ACT College Testing Programs, Inc., 1966), p. 34.

Of the 291 Langston University freshmen who were used in the study, 238, or 81.7 per cent had participated in the ACT Program. Table 16 shows the percentage distribution of Langston University freshmen according to their ACT Composite Standard scores, fall, 1969. The median score of 12.0, when translated into percentiles places the group well below the 25th percentile of all college freshmen based on national college norms. Only 7 (5 from Group A and 2 from Group B) made scores of 21 and over, which places them at the 51st percentile for national college-bound students.¹

TABLE 16
PERCENTAGE DISTRIBUTION OF LANGSTON UNIVERSITY
FRESHMEN ACCORDING TO ACT COMPOSITE
STANDARD SCORES, FALL, 1969

ACT Composite Standard Scores	Group A		Group B	
	Number	Per Cent	Number	Per Cent
21 and over	5	3.8	2	1.5
16 to 20	17	13.0	19	11.9
11 to 15	48	36.7	49	30.6
6 to 10	32	24.5	47	29.4
0 to 5	9	6.8	10	6.3
No Score Available	20	15.2	33	20.6

Median Composite Score: 12.0.

¹Appendix III.

When the performance of the two groups on the ACT was compared, it was found that 70 students, or 53.4 per cent from Group A scored above the median, while 56, or 35.0 per cent of Group B made scores higher than 12.0.

In order to determine the statistical difference between the ACT performance of the two groups, a Chi-square test was made. Data for this computation are shown in Table 17.

TABLE 17

CONTINGENCY TABLE SHOWING RELATIONSHIP BETWEEN ACT
COMPOSITE STANDARD SCORES FOR GROUPS A AND B,
LANGSTON UNIVERSITY FRESHMEN, FALL, 1969

Median = 12	Group A	Group B	Total
Above Median	70	56	126
Below Median	41	71	112
Total	111	127	238 = N [*]

* Excludes 20 students from Group A and 33 from Group B who had no ACT scores.

$$\chi^2 - .613$$

The result of the Chi-square computation was .613. The critical ratio at one degree of freedom was 3.841 at the .05 confidence level. Since the computed Chi-square of .613 was less than the critical ratio of 3.841, there was no

significant difference in the ACT composite scores of the students from Groups A and B.

ACT English Scores

The percentage distribution of scores on the English division of the ACT battery may be seen in Table 18. The median score is also 12.0, and the overall scores are somewhat similar to the composite results. Six students made scores of 21 and over, while 32 scored in the 0 to 5 range.

On a national basis, the total mean for the English test of ACT is 18.8 for all regions and higher institutions offering the bachelor's degree.¹ Four students from Group A and two from Group B made scores of 21 and over. Sixty-six, or 59.5 per cent of those from Group A who took the test made scores above the median of 12.0, while 49 or 38.6 per cent from Group B scored above the median.

Statistical calculations for the significance of difference between the scores of the two groups showed a Chi-square (Table 19) of 9.298. With one degree of freedom, a Chi-square of 3.841 or greater is required at the .05 level for a difference of significance. Therefore, there was a significant difference between the performance of the groups on the English test.

¹Appendix IV.

TABLE 18

PERCENTAGE DISTRIBUTION OF LANGSTON UNIVERSITY
FRESHMEN ACCORDING TO ACT ENGLISH
STANDARD SCORES, FALL, 1969

ACT English Standard Scores	Group A		Group B	
	Number	Per Cent	Number	Per Cent
21 and over	4	3.0	2	1.3
16 to 20	30	22.9	24	15.0
11 to 15	40	38.1	36	22.5
6 to 10	25	19.0	45	28.1
0 to 5	12	9.2	20	12.5
No score available	20	15.2	33	20.6

Median English ACT Score = 12.0.

ACT Mathematics Test Scores

The percentage distribution of scores on the Mathematics section of the American College Test battery was slightly different from that of English. Here, the median score was 13.5 which is somewhat higher than that of the English or Composite mid-point. The total mean for the Mathematics Test on a national basis is 18.8, a considerably higher figure than 13.5. And again, the number of students in Group A scoring 21 and over exceeded that of Group B. Six, or 4.6 per cent of the former and only one, or .6 per cent of the latter, made such scores. The percentage distribution may be seen in Table 20.

TABLE 19

CONTINGENCY TABLE SHOWING RELATIONSHIP BETWEEN
ACT ENGLISH TEST SCORES, GROUPS A AND B,
LANGSTON UNIVERSITY FRESHMEN,
FALL, 1969

Median = 12 df = 1	Group A	Group B	Total
Above Median	66	49	115
Below Median	45	78	123
Totals	111	127	238 = N [*]

* Excludes 20 students from Group A and 33 from Group B who had no ACT English scores.

$$\chi^2 = 9.298$$

Sixty-eight, or 61.2 per cent of those from Group A who took the test made scores above the median; 61, or 48.1 per cent of Group B made such scores.

Table 21 shows the statistical significance of difference between the scores of Groups A and B on the Mathematics test. As can be seen from the table the computed Chi-square is 3.660. At the .05 confidence level with one degree of freedom the required Chi-square is 3.841 or more. Therefore, the difference between the scores of the groups on the Mathematics test is not considered significant.

TABLE 20

PERCENTAGE DISTRIBUTION OF LANGSTON UNIVERSITY
FRESHMEN ACCORDING TO ACT MATHEMATICS
SCORE, FALL, 1969

Mathematics (ACT) Scores	Group A		Group B	
	Number	Per Cent	Number	Per Cent
21 and over	6	4.6	1	.6
16 to 20	19	14.5	16	10.0
11 to 15	43	32.8	44	27.5
6 to 10	26	19.9	40	25.0
0 to 5	17	13.0	26	16.2
No score available	20	15.2	33	20.6

Median Mathematics Score = 13.5.

ACT Composite Test Scores and Sizes
of High Schools

When ACT Composite scores were compared with the sizes of schools from which the students graduated, it was found that 10 or 7.5 per cent of the students from schools with enrollments of 749 or less made scores of 21 or above; none of those in schools of 750 to 1,249 made scores in the highest category; one student, or 1.6 of the 63 students in schools with enrollments of 1,249 to 1,999 had a score of 21 or above; and 2, or 5.7 per cent of the 35 students from schools with an enrollment of 2,000 or above made scores of 21 and over.

TABLE 21

CONTINGENCY TABLE SHOWING RELATIONSHIP BETWEEN
SCORES OF GROUPS A AND B (ACT MATHEMATICS
TEST SCORES), LANGSTON UNIVERSITY
FRESHMEN, FALL, 1969

Median = 13.5	Group A	Group B	Total
Above Median	68	61	129
Below Median	43	66	109
Total	111	127	238 = N [*]

*Excludes 20 students from Group A, and 33 from Group B who had no ACT scores.

$$\chi^2 = 3.66$$

The percentage distribution of ACT Composite scores, by size of high school, is shown in Table 22.

The statistical relationship between Groups A and B according to size of high schools from which they graduated is shown in Table 23. The median population or size of schools was 838.75.

Chi-square was calculated for the significance of difference between the groups according to the size of high schools from which they graduated, and as indicated was 17.542. The critical ratio for significance of difference at the .05 level of confidence with one degree of freedom is only 3.841. Since the computed Chi-square is considerably greater than the latter figure, there was a significant difference

TABLE 22

PERCENTAGE DISTRIBUTION OF ACT COMPOSITE STANDARD
SCORES IN ACCORDANCE WITH SIZES OF HIGH SCHOOLS
FROM WHICH LANGSTON UNIVERSITY FRESHMEN
GRADUATED, FALL, 1969

ACT Scores (Composite)	High School Enrollment							
	0-749		750-1249		1249-1999		2000 and above	
	Num- ber	Per Cent	Num- ber	Per Cent	Num- ber	Per Cent	Num- ber	Per Cent
21 and over	10	7.5	0	0.0	1	1.6	2	5.7
16 to 20	28	21.3	9	14.5	9	14.3	4	11.4
11 to 15	41	31.3	28	45.2	18	28.6	7	20.0
6 to 10	23	17.7	14	22.6	21	33.3	7	20.0
0 to 5	6	4.5	4	6.4	3	4.7	3	8.6
No score available	23	17.7	7	11.3	11	17.5	12	34.3
Totals	131	100.0	62	100.0	63	100.00	35	100.0

between the groups with respect to the size of schools from which they came.

ACT Composite Scores and Types of High Schools

When ACT Composite scores were compared with types of high schools from which the students graduated, it was found that two, or 2.9 per cent of the students from the category

TABLE 23

CONTINGENCY TABLE SHOWING THE RELATIONSHIP BETWEEN
GROUPS A AND B ACCORDING TO SIZES OF HIGH
SCHOOLS FROM WHICH THEY GRADUATED,
FALL, 1969

	Group A	Group B	Total
Above Median	47	98	145
Below Median	84	62	146
Total	131	160	291

Median = 838.75

$\chi^2 = 17.542$

of urban-large schools made scores of 21 and above, two or 2.2 of the 91 students from the urban-medium group scores of 21 and over; eight or 11.4 per cent of those from small towns achieved scores in the highest bracket, and one, or 1.7 of the 59 students comprising the group from rural schools made scores of 21 or above. The complete percentage distribution of these scores is shown in Table 24.

ACT Composite Scores and Geographic Origin

In comparing the ACT Composite Standard scores of Langston University freshmen who graduated from Oklahoma high schools with those who came from out-of-state schools, some rather interesting findings were revealed. For example, 11, or 5.3 per cent of the 209 students from Oklahoma made scores of 21 and above, while only 3, or 3.7 per cent of the 82

TABLE 24

PERCENTAGE DISTRIBUTION OF ACT COMPOSITE STANDARD
SCORES ACCORDING TO TYPE OF HIGH SCHOOL,
LANGSTON UNIVERSITY FRESHMEN,
FALL, 1969

ACT Composite Scores	Urban- Large		Urban- Medium		Small Town		Rural	
	Num- ber	Per Cent	Num- ber	Per Cent	Num- ber	Per Cent	Num- ber	Per Cent
21 and over	2	2.9	2	2.2	8	11.4	1	1.7
16 to 20	8	11.4	14	15.4	15	21.1	12	20.4
11 to 15	21	30.0	29	31.9	22	30.9	22	37.3
6 to 10	20	28.6	22	24.2	10	14.0	12	20.4
0 to 5	3	4.3	8	8.8	1	1.4	5	8.5
No score available	16	22.8	16	17.5	15	21.2	6	11.7
Totals	70	100	91	100	71	100	59	100

students from other states made such scores. The complete percentage distribution of ACT Composite Standard scores according to geographic origin is shown in Table 25.

Student Participation in School Organizations
and Activities

Because there is a question concerning the amount of participation of high school students in school organizations and activities of desegregated schools, and also because

TABLE 25

PERCENTAGE DISTRIBUTION OF ACT COMPOSITE STANDARD
SCORES OF LANGSTON UNIVERSITY FRESHMEN BY
GEOGRAPHIC ORIGIN, FALL, 1969

ACT Composite Standard Scores	Geographic Origin			
	In-State		Out-of-State	
	Number	Per Cent	Number	Per Cent
21 and over	11	5.3	3	3.7
16 to 20	39	18.7	8	9.8
11 to 15	76	36.4	21	25.5
6 to 10	46	22.0	17	20.7
0 to 5	9	4.3	7	8.5
No score available	28	13.3	26	31.7

active participation in such activities indicates, to some extent, leadership qualities on the part of students involved, it became a purpose of this study to determine the extent of participation of Langston University freshmen in secondary school activities. Four measures of student involvement were devised: (1) the number and name of organizations of which students served as chairman, co-chairman, or president; (2) other lesser offices held in various organizations; (3) the number and name of conventions, etc., to which the student had served as an elected delegate, and committees on

which he had served; and (4) the names and number of other organizations to which the student belonged. In order to prevent possible misrepresentation about activities, students were asked to give the names of sponsors of organizations and activities which he had listed. Table 26 provides a summary of the answers which the students provided.

The results of Chi-square calculations to determine the significance of difference between the groups with respect to secondary school activities were 2.835, as can be seen in Table 27. The critical ratio at three degrees of freedom is 3.841 at the .05 confidence level. Since the computed Chi-square is less than the critical ratio of 3.841, there was no significant difference between the groups in the matter of secondary school activities. Data on which this observation is based are shown in Table 27.

Precollegiate Academic Achievement and Sex

Comparison of ACT composite scores between the sexes for Groups A and B is shown in Tables 28 and 29.

As shown in Table 28, the Chi-square for the relationship between the sexes on the ACT Composite score is .006. The Chi-square at the .05 level of confidence with one degree of freedom must be equal to or greater than 3.841 for significance. Since the computed Chi-square is only .006, there was no significant difference between the sexes of Group A on the ACT Composite scores.

TABLE 26

PERCENTAGE DISTRIBUTION OF GROUPS A AND B
WITH RESPECT TO PARTICIPATION IN HIGH
SCHOOL ORGANIZATIONS AND ACTIVITIES

Activity	Group A		Group B	
	Num- ber	Per Cent	Num- ber	Per Cent
Organizations of which students served as Chairman, Co-Chairman or President	37	28.2	55	34.4
Other offices held in various organizations	55	41.9	57	35.6
Delegates to conventions, committees worked on in departmental clubs, etc.	55	41.9	66	41.3
Other organizations in which students held membership	48	36.6	74	46.3
Number reporting no major offices held	94	71.7	105	65.6
Number reporting no other offices held	75	57.2	102	63.7
Number reporting not to have served as delegates, or committees worked on, etc.	65	49.6	85	53.1
Number reporting no other membership held in organizations	78	59.5	81	50.6

TABLE 27

CONTINGENCY TABLE SHOWING THE RELATIONSHIP BETWEEN
GROUPS A AND B OF LANGSTON UNIVERSITY FRESHMEN
WITH RESPECT TO PARTICIPATION IN SECONDARY
SCHOOL ACTIVITIES, FALL, 1969

	Group A		Group B		Total Observed Fre- quency
	Observed Fre- quency	Expected Fre- quency	Observed Fre- quency	Expected Fre- quency	
Chairman, Co- Chairman, President	37	40.1	55	51.9	92
Other Offices	55	48.9	57	63.1	112
Committees, Elected Dele- gates, etc.	55	52.8	66	68.2	121
Membership in Organizations Not Reported Above	48	53.2	74	68.8	122
Totals	195		252		447

$$\chi^2 = 2.835$$

TABLE 28

CONTINGENCY TABLE SHOWING THE RELATIONSHIP BETWEEN
THE SEXES AND ACT COMPOSITE SCORES OF GROUP A

Median = 13	Male	Female	Total
Above Median	32	32	64
At or Below Median	23	24	47
Total	56	55	111 = N

$$\chi^2 = .006$$

TABLE 29

CONTINGENCY TABLE SHOWING THE RELATIONSHIP BETWEEN
THE SEXES AND ACT COMPOSITE SCORES OF GROUP B

Median = 11	Male	Female	Total
Above Median	16	13	29
At or Below Median	52	46	98
Total	68	59	127 = N

$$\chi^2 = .00027$$

For significance of difference at the .05 level with one degree of freedom, the Chi-square must be equal to or greater than 3.841. Since the computed Chi-square was only .00027, as shown in Table 29, there was no significant difference between the sexes of Group B in their ACT Composite scores.

A great deal of similarity was found when the pre-collegiate academic achievement between the sexes of the combined groups was examined. Findings are shown in the following tables.

Fifty-seven, or 36.3 per cent of the males and 55, or 40.1 per cent of the women made composite scores above the median, which was 12, for the ACT composite test scores.

A Chi-square test to determine the difference between the scores did not show a significant difference. The computed Chi-square was .567, which is considerably lower than 3.841 which is required for significance of difference at the .05 level with one degree of freedom. Data used in computation for the Chi-square are shown in Table 30.

The women students fared better than the men in the English section of ACT. Sixty-four, or 46.7 per cent of the freshmen women scored above the median, which was again 12.0, while only 51, or 33.1 per cent of the men scored above that number.

The Chi-square for the relationship between the scores of the sexes was 5.052. At the .05 level with one

TABLE 30

CONTINGENCY TABLE SHOWING THE RELATIONSHIP OF ACT
COMPOSITE STANDARD SCORES TO SEX OF LANGSTON
UNIVERSITY FRESHMEN (COMBINED GROUPS)
FALL, 1969

Median = 12	Male	Female	Total
Above Median	57	55	112
Below Median	77	92	169
Total	134	147	281 = N

$$\chi^2 = .567$$

degree of freedom, the critical ratio is 3.841. Since the computed Chi-square is greater than the critical ratio, there appears to be a significant difference in the two sets of scores, in favor of the women. The Chi-square data are shown in Table 31.

The median score for the Mathematics section of ACT was 13.5. Sixty-four, or 41.5 per cent of the men scored above the median, while 56, or 50.9 per cent of the women were above.

A Chi-square of .00026 proved to be less than 3.841 which is required for a significant difference at the .05 level.

The Chi-square computations for these findings are given in Table 32.

TABLE 31

CONTINGENCY TABLE SHOWING THE RELATIONSHIP OF SEX TO
ACT ENGLISH STANDARD TEST SCORES OF LANGSTON
UNIVERSITY FRESHMEN, FALL, 1969

Median = 12	Male	Female	Total
Above Median	51	64	115
Below Median	103	73	176
Total	154	137	291 = N

$$\chi^2 = 5.052$$

TABLE 32

CONTINGENCY TABLE SHOWING THE RELATIONSHIP OF SEX TO
ACT MATHEMATICS STANDARD TEST SCORES OF LANGSTON
UNIVERSITY FRESHMEN, FALL, 1969

Median = 13.5	Male	Female	Total
Above Median	64	56	120
Below Median	90	81	171
Total	154	137	291

$$\chi^2 = .00026$$

To summarize the differences between the precollegiate achievement of Groups A and B: Significant differences were found between the ACT English test scores of the groups; there was also a difference between the groups in the matter of size of schools from which they graduated. There were no significant differences in the ACT composite test scores, the Mathematics test, and participation in high school organizations and activities of the groups. In the matter of achievement between the sexes, there were no differences between the ACT Composite, and Mathematics scores of the men and women in Group A or Group B; when the groups were combined, no significant difference was found between the sexes. However, a significant difference between the men and women was found in the English test.

Collegiate Level Achievement

The collegiate level performance of students was determined by the grade-point averages (GPA) of the students at the end of the first semester, and the students' persistence as indicated by registration for the second semester.

Grade-Point Averages

Table 33 gives the percentage distribution of grade-point averages for Groups A and B. Interestingly enough, the median grade-point average is 2.231, while the average on a national basis for all regions is 2.14.¹

¹Appendix IV.

TABLE 33

PERCENTAGE DISTRIBUTION OF LANGSTON UNIVERSITY
FRESHMEN ACCORDING TO GRADE-POINT AVERAGES,
FALL, 1969

(GPA) Grade-Point Averages	Group A		Group B	
	Number	Per Cent	Number	Per Cent
3.60 - 4.00	10	7.6	2	1.3
3.10 - 3.59	14	10.7	12	7.5
2.60 - 3.09	26	19.8	28	17.5
2.10 - 2.59	32	24.4	41	25.6
1.60 - 2.09	25	19.0	42	26.3
1.10 - 1.59	12	9.2	21	13.1
0.00 - 1.09	12	9.2	14	9.7

Median grade-point average = 2.231.

Seventy-seven, or 58.7 per cent of Group A made grade-point averages above the median, and 76, or 47.5 per cent of Group B earned such averages.

The grade-point averages of both Group A and Group B ranged from 0.00 to 4.00. Ten students, or 7.6 per cent of the students from Group A earned GPA's of 3.60 to 4.00, while only 2, or 1.3 per cent of Group B fared as well.

When a Chi-square test was made to determine the statistical significance of the difference between the scores of the groups the Chi-square was found to be 3.983. For

significance at the .05 level with one degree of freedom, the critical ratio is 3.841. Since the computed Chi-square is larger than the critical ratio, a significant difference between the GPA's of the two groups is shown. Table 34 presents the data used in the Chi-square computation.

TABLE 34

CONTINGENCY TABLE SHOWING THE RELATIONSHIP BETWEEN
GRADE-POINT AVERAGES OF LANGSTON UNIVERSITY
FRESHMEN, FALL, 1969

	Group A	Group B	Total
Above Median	77	76	153
Below Median	54	84	138
Total	131	160	291 = N

$$\chi^2 = 3.983$$

Grade-Point Averages and Size of High Schools

In order to compute, statistically, the relationship between grade-point averages and size of high schools from which the students had graduated, it was necessary to regroup the averages. The following categories were used: (1) 0.00 to 1.04; (2) 1.05 to 2.04; (3) 2.05 to 3.04; and (4) 3.05 to 4.00. The same categories are used in computing the relationship between GPA's and types of school. Thirty-one students from schools with enrollments of 0 to 749 earned GPA's of

3.05 to 4.00; six from schools in the category of 750 to 1,249 enrollments earned grades in that category; 10 students from schools ranging in size from 1,250 to 1,999 earned GPA's in the highest category; and only one student in the schools with enrollments of 2,000 and above earned a grade-point average of 3.05 to 4.00.

The results of a Chi-square test to determine the relationship between the GPA's and sizes of schools revealed a Chi-square of 25.349. For significance at the .05 level with 9 degrees of freedom, the critical ratio is 16.919. Therefore, a Chi-square of 25.349, which exceeds the required ratio, is considered significant. It appears, therefore, that a significant difference exists between grade-point averages and the sizes of schools. Data are shown in Table 35.

Grade-Point Averages and Type of High Schools

When grade-point averages were compared with types of high schools, 8 students from Urban-Large schools were found to have received grades which placed them in the highest category of 3.05 to 4.00; 10 from Urban-Medium schools reached that level; 16 from the Small Town category had 3.05 to 4.00 averages; and 14 students from the Rural group received GPA's of 3.05 to 4.00.

A Chi-square of 7.874 was found when the data were treated statistically. In order for the relationship to be significant with 9 degrees of freedom at the .05 level, the

TABLE 35

CONTINGENCY TABLE SHOWING THE RELATIONSHIP BETWEEN SIZE OF HIGH
SCHOOLS AND GRADE-POINT AVERAGES OF LANGSTON UNIVERSITY
FRESHMEN, FALL, 1969

Grade- Point Averages	Size of Schools								Total Ob- served Fre- quency
	0-749		750-1249		1250-1999		2000 & Above		
	Ob- served Fre- quency	Ex- pected Fre- quency	Ob- served Fre- quency	Ex- pected Fre- quency	Ob- served Fre- quency	Ex- pected Fre- quency	Ob- served Fre- quency	Ex- pected Fre- quency	
3.05 - 4.00	31	21.5	6	10.0	10	10.5	1	5.9	48
2.05 - 3.04	54	55.6	26	25.9	24	27.2	20	15.3	124
1.05 - 2.04	40	44.9	25	20.8	21	21.9	14	12.4	100
0.00 - 1.04	2	4.9	2	2.3	7	2.4	0	1.4	11
Total Observed Frequency	127		59		62		35		283

$$\chi^2 = 25.349$$

Chi-square must be greater than or equal to 16.919. Data for statistical computations for grade-point averages and type of high school are shown in Table 36.

Grade-Point Average and Geographic Origin

The percentage distribution of grade-point averages according to the geographic origin of students is very similar to that of ACT Composite scores in relation to geographic origin. Thirty-five or 16.7 per cent of the 209 Oklahoma high school graduates earned grade-point averages of 3.05 to 4.00, while only 8, or 9.8 per cent of the out-of-state group earned such averages. On the other hand, 13, or 6.2 per cent of the Oklahoma group made grade-point averages which placed them in the lowest category, while only three, or 3.6 per cent of the students from out-of-state made such low averages. Complete percentage distribution of grade-point averages according to geographic origin may be seen in Table 37.

Students' Plans for Obtaining Bachelor's and Post-Bachelor's Degrees

Not all students who enter college come with the expectation of completing work leading to a college degree. Students who participated in this study were asked to express their intentions with respect to obtaining the bachelor's and post-bachelor's degrees. One hundred twenty-seven, or 96.9 per cent of those comprising Group A expressed plans to obtain the bachelor's degree; two, or 1.5 per cent were undecided

TABLE 36

CONTINGENCY TABLE SHOWING THE RELATIONSHIP BETWEEN TYPES OF HIGH
SCHOOLS AND GRADE-POINT AVERAGE OF LANGSTON UNIVERSITY
FRESHMEN, FALL, 1969

Grade- Point Averages	Type of School								Total Ob- served Fre- quency
	Urban-Large		Urban-Medium		Small Town		Rural		
	Ob- served Fre- quency	Ex- pected Fre- quency	Ob- served Fre- quency	Ex- pected Fre- quency	Ob- served Fre- quency	Ex- pected Fre- quency	Ob- served Fre- quency	Ex- pected Fre- quency	
3.05 - 4.00	8	11.7	10	14.8	16	11.7	14	9.7	48
2.05 - 3.04	31	30.5	42	38.7	29	30.5	23	23.3	125
1.05 - 2.04	25	23.4	31	29.7	22	23.4	18	19.5	96
0.00 - 1.04	7	5.4	7	6.8	4	5.4	4	4.5	22
Total Observed Frequency	71		90		71		59		291

$$\chi^2 = 7.874$$

TABLE 37

PERCENTAGE DISTRIBUTION OF GRADE-POINT AVERAGES OF
LANGSTON UNIVERSITY FRESHMEN ACCORDING TO
GEOGRAPHIC ORIGIN, FALL, 1969

Geographic Origin	Grade-Point Average							
	3.05-4.00		2.05-3.04		1.05-2.04		0.00-1.04	
	Num- ber	Per Cent	Num- ber	Per Cent	Num- ber	Per Cent	Num- ber	Per Cent
In-State	35	16.7	89	42.6	72	34.5	13	6.2
Out-of-State	8	9.8	43	52.3	28	34.2	3	3.6

and two students stated that they did not plan to work toward a bachelor's degree. Of the students included in Group B, 142 or 96.25 per cent planned to obtain this degree; 6 or 3.8 per cent did not intend to do so; and none were undecided. Table 38 shows the percentage distribution of plans.

A Chi-square of .594 was found when the data noted in Table 38 were treated statistically. To be significant at the .05 level with 1 df a Chi-square of 3.841 is required. Since the computed Chi-square is less than that figure, there appears to be no significant difference between the groups with respect to plans for obtaining the bachelor's degree. Computations are shown in Table 39. To be significant at the .05 level with one degree of freedom, the critical ratio is 3.841.

TABLE 38

PERCENTAGE DISTRIBUTION OF LANGSTON UNIVERSITY
FRESHMEN WHO PLAN TO OBTAIN A BACHELOR'S
DEGREE, FALL, 1969

Students' Intentions Concerning Bachelor's Degree							
Group	Yes		No		Uncertain		Total
	Num- ber	Per Cent	Num- ber	Per Cent	Num- ber	Per Cent	
A	127	96.9	2	1.5	2	1.5	131
B	154	96.5	6	2.75	0	0.0	160

TABLE 39

CONTINGENCY TABLE SHOWING THE RELATIONSHIP BETWEEN
GROUPS A AND B OF LANGSTON UNIVERSITY FRESHMEN
WITH RESPECT TO PLANS FOR OBTAINING A
BACHELOR'S DEGREE, FALL, 1969

	Group A	Group B	Total
Yes	127	154	281
No	2	6	8
Total	129	160	289 = N*

*Excludes 2 replies of uncertain for Group a.

$$\chi^2 = .5947$$

As would be expected, fewer students had plans to work toward the post-bachelor's degree than did those who planned to seek the first degree. Seventy-three, or 55.7 per cent of those in Group A had such plans; 54, or 41.2 per cent replied no to the question; and 4, or 3.1 per cent were uncertain about seeking the post-bachelor's degree. Students in Group B replied to the question as follows: Seventy-five, or 46.9 per cent answered yes; 74, or 46.2 per cent answered no; and 11, or 6.9 per cent were uncertain. These data are shown in Table 40.

TABLE 40
PERCENTAGE DISTRIBUTION OF LANGSTON UNIVERSITY
FRESHMEN WHO PLAN TO OBTAIN A
POST-BACHELOR'S DEGREE
FALL, 1969

Students' Intentions Concerning Post-Bachelor's Degree							
Group	Yes		No		Uncertain		Total
	Num- ber	Per Cent	Num- ber	Per Cent	Num- ber	Per Cent	
A	73	55.7	54	41.2	4	3.1	131
B	75	46.9	74	46.2	11	6.9	160

Statistical treatment of the data to determine the relationship between the groups with respect to intentions of working toward a post-bachelor's degree showed a Chi-square

of .035. The critical ratio with one degree of freedom at the .05 level is 3.841. Since the Chi-square noted above is less than that required, no significant difference existed between the groups regarding their intention to seek a post-bachelor's degree. Table 41 shows the data used in the computations.

TABLE 41

CONTINGENCY TABLE SHOWING THE RELATIONSHIP BETWEEN
GROUPS A AND B OF LANGSTON UNIVERSITY FRESHMEN
WITH RESPECT TO PLANS FOR OBTAINING A POST-
BACHELOR'S DEGREE, FALL, 1969

Response	Group A	Group B	Total
Yes	73	75	148
No	54	74	128
Total	127	149	276 = N*

*Excludes 15 students (4 from Group A and 11 from Group B) who were uncertain about seeking the post-bachelor's degree.

$$\chi^2 = .035$$

Fields of Study Chosen by Students

Students participating in the study were asked to designate their fields of study. Only a few failed to respond to this question, and in such cases the information was obtained from the Registrar's Office.

A breakdown of the major fields of study chosen by students in Group A and B is given in Table 42. The choice of Social Sciences as a major leads the field for students in both groups, with Business Administration second, in both. It is interesting to note that 24, or 15.0 per cent of Group B, the students from predominantly Black schools, chose Health and Physical Education as a major, while only 6, or 4.6 per cent of students in Group A, from desegregated schools chose that major.

Mathematics and the physical sciences were chosen as a field of study by only 10 students from Group A (7 mathematics and 3 physical sciences), and 10 (6 mathematics and 4 physical sciences) from Group B.

As may be seen in Table 42, a Chi-square of 27.806 was found when data for fields of study were treated statistically. The critical ratio for significance of difference at the .05 per cent confidence level with 13 degrees of freedom is 22.362. Since the calculated Chi-square is greater than the latter figure, there was a significant difference in the major fields of study chosen by Groups A and B.

The rank order of majors is shown in Table 43.

Persistence

It has been said that American colleges lose, on the average, about half their students in the four years following matriculation. Voluntary withdrawal and forced dismissal

TABLE 42

PERCENTAGE DISTRIBUTION OF FIELDS OF STUDY CHOSEN
BY LANGSTON UNIVERSITY FRESHMEN, FALL, 1969

Major Fields	Group A		Group B	
	Number	Per Cent	Number	Per Cent
Agriculture	5	3.8	1	0.6
Art	3	2.3	2	1.2
Biology	8	6.1	10	6.2
Business Administration	23	17.6	30	18.8
Elementary Education	18	13.7	18	11.2
English	11	3.4	3	1.9
Health and Physical Education	6	4.6	24	15.0
Home Economics	9	6.9	3	1.9
Mathematics	7	5.3	6	3.8
Music	1	0.8	5	3.1
Physical Science	3	2.3	4	2.5
Social Sciences	27	20.6	43	26.9
Technology	10	7.6	9	5.6
Undecided	0	0.0	2	1.3
Totals	131	100.0	160	100.0

$$\chi^2 = 27.806$$

TABLE 43

RANK ORDER OF MAJOR FIELDS OF STUDY
CHOSEN BY GROUPS A AND B

Group A			Group B *		
Major Field	Num- ber	Per Cent	Major Field	Num- ber	Per Cent
1. Social Sciences	27	20.6	1. Social Sciences	43	26.9
2. Business Admin- istration	23	17.6	2. Business Admin- istration	30	18.8
3. Elementary Education	18	13.7	3. Health and Phys- ical Education	24	15.0
4. English	11	8.4	4. Elementary Education	18	11.2
5. Technology	10	7.6	5. Biology	10	6.2
6. Home Economics	9	6.9	6. Technology	9	5.6
7. Biology	8	6.1	7. Mathematics	6	3.8
8. Mathematics	7	5.3	8. Music	5	3.1
9. Health and Phys- ical Education	6	4.6	9. Physical Sciences	4	2.5
10. Agriculture	5	3.8	10. English	3	1.9
11. Art	3	2.3	11. Home Economics	3	1.9
12. Physical Sciences	3	2.3	12. Art	2	1.2
13. Music	1	0.8	13. Agriculture	1	0.6

*Two students in Group B were undecided.

take their heaviest toll during the first year of college. This study included persistence, or continuation in college after the first semester, as one area of concern. It was surprising to find that 256 students from the combined groups enrolled for the second semester. This means that only 35 dropped out before or at the end of the first semester. One hundred sixteen, or 88.5 per cent of the students in Group A, and 140, or 87.5 per cent of those in Group B continued into the second semester. Table 44 shows the percentage distribution of persistence.

TABLE 44
PERCENTAGE DISTRIBUTION OF FRESHMAN PERSISTENCE,
LANGSTON UNIVERSITY, FALL, 1969

Group	Persistence Into Second Semester			
	Yes		No	
	Number	Per Cent	Number	Per Cent
A	116	88.5	15	11.5
B	140	87.5	20	12.5

A Chi-square of .0357 was found when the above data were treated statistically to determine the relationship between the two groups with respect to persistence. For significance of difference at the .05 level with $df = 1$, a

Chi-square of 3.841 is required. Since the computed Chi-square of .0357 is less than that required, the groups were essentially the same in the matter of persistence. Data used in the computation of Chi-square are shown in Table 45.

TABLE 45

CONTINGENCY TABLE SHOWING THE RELATIONSHIP BETWEEN
PERSISTENCE OF GROUPS A AND B OF LANGSTON
UNIVERSITY FRESHMEN, FALL, 1969

	Group A	Group B	Total
Persisted	116	140	256
Dropped Out	15	20	35
Total	131	160	291 = N

$$\chi^2 = .0357$$

Collegiate Level Achievement and Sex of Students

In keeping with findings revealed by many studies, the women students who participated in this investigation excelled in the matter of grade-point averages at the end of the first semester. The median grade-point average for the students included in the study was 2.231. Eighty-four, or 61.3 per cent of the women received scores above the median, while only 63, or 40.9 per cent of the men's averages were above the median.

A Chi-square of 10.735 was found when the data were tested for significance of difference. This is greater than the critical ratio of 3.841 with one degree of freedom at the .05 level. The data for computations are shown in Table 46.

TABLE 46

CONTINGENCY TABLE SHOWING THE RELATIONSHIP BETWEEN
THE SEXES AND THE GRADE-POINT AVERAGES OF
LANGSTON UNIVERSITY FRESHMEN,
FALL, 1969

	Male	Female	Total
Above Median	63	84	147
Below Median	91	53	144
Total	154	137	291 = N

$$\chi^2 = 10.735$$

Since the calculated Chi-square for the relationship between the grade-point averages for the men and women is greater than that required, a significant difference between the sexes in favor of the women is indicated.

Relationship Between Men and Women Students With
Respect to Plans for Obtaining a Baccalaureate
and Post-Baccalaureate Degree

Of the 154 men participating in this study, 147, or 95.4 per cent indicated the intention to work toward a

baccalaureate degree. One hundred thirty-four, or 97.8 per cent of the women indicated such plans.

A Chi-square of .0435 did not indicate a significant difference between the sexes with respect to plans for working toward the bachelor's degree. Data used in the computation of the Chi-square are shown in Table 47.

TABLE 47
CONTINGENCY TABLE SHOWING THE RELATIONSHIP OF
SEX AND THE INTENTIONS OF LANGSTON
UNIVERSITY FRESHMEN TO OBTAIN A
BACHELOR'S DEGREE, FALL, 1969

	Male	Female	Total
Yes	147	134	281
No	5	3	8
Total	152	137	289

$$\chi^2 = .0435$$

The critical ratio at the .05 confidence level with one degree of freedom is 3.841.

Seventy-eight, or 50.6 per cent of the men included in the study stated that they planned to work toward the post-bachelor's degree; 64 or 41.5 per cent had no such plans and 12, or 7.7 per cent were undecided. Seventy, or 51.1 per cent of the women indicated plans to obtain a post-bachelor's degree; 64, or 46.8 per cent did not plan to attempt work for that degree; and three, or 2.1 per cent were undecided.

A Chi-square of .107 showed no significant difference between the sexes with respect to obtaining a post-bachelor's degree. For significance at the .05 level with 1 df the critical ratio is 3.841.

Data for the Chi-square are given in Table 48.

TABLE 48

CONTINGENCY TABLE SHOWING THE RELATIONSHIP BETWEEN
SEX AND THE PLANS OF LANGSTON UNIVERSITY FRESHMEN
TO OBTAIN A POST-BACHELOR'S DEGREE, FALL, 1969

	Male	Female	Total
Yes	78	70	148
No	64	64	128
Total	142	134	276

$$\chi^2 = .107$$

Relationship Between Men and Women Students
With Respect to Persistence

At the beginning of the second semester of the 1969-70 school year, 135, or 87.6 per cent of the male freshmen who had entered Langston University in the fall of 1969 and who were included in this study were re-enrolled for the spring semester. One hundred twenty-one, or 88.2 per cent of the women who participated in the study remained for the second semester.

A Chi-square test to determine the relationship between the men and women with respect to persistence showed a Chi-square of .013. For significance at this level and with 1 degree of freedom, a Chi-square must be at least 3.841. Since the computed Chi-square is only .013, there appears to be no difference between the sexes with respect to persistence. Chi-square data are shown in Table 49.

TABLE 49

CONTINGENCY TABLE SHOWING THE RELATIONSHIP OF THE
SEXES AND THE PERSISTENCE OF LANGSTON
UNIVERSITY FRESHMEN, FALL, 1969

	Male	Female	Total
Persisted	135	121	256
Dropped Out	15	13	28
Total	150	134	284

$$\chi^2 = .013$$

Collegiate Level Achievement and
Socio-Economic Characteristics

This part of the chapter is devoted to showing how achievement data are distributed when they are arranged according to the socio-economic variables of: (1) occupations of parents, (2) educational level achieved by parents, and (3) family income.

Occupation and Achievement

In order to facilitate statistical computation for associating parental occupation with grade-point averages, the occupational categories were reduced to four. Categories devised for this purpose were: (1) professional and managerial, which is essentially the same as the first category in the larger group; (2) clerical and sales, the same as the one formerly indicated; (3) skilled, including processing occupations, machine trades, bench work occupations, and structural work; and (4) unskilled--including service occupations, laborers and miscellaneous occupations.

The contingency Table 50 shows the results of a Chi-square test to determine the relationship between occupations of fathers and the students' grade-point averages.

As indicated in Table 50, the Chi-square test to determine the significance of difference between academic achievement and the occupations yielded a Chi-square value of 14.590. For significance at the .05 level with 9 degrees of freedom the required Chi-square is 16.919. Since the computed figure is less than required, it appears that no significant difference existed between parents' occupations and the academic achievement of students. This evidence seems to reject the notion that occupation of parents makes a difference in the academic achievement of their children.

TABLE 50

CONTINGENCY TABLE SHOWING THE RELATIONSHIP BETWEEN FATHERS' OCCUPATIONS AND STUDENTS' GRADE-POINT AVERAGES

Grade- Point Averages	Fathers' Occupations								Total Ob- served Fre- quency
	Professional & Managerial		Clerical and Sales		Skilled Occupations		Unskilled Occupations		
	Ob- served Fre- quency	Ex- pected Fre- quency	Ob- served Fre- quency	Ex- pected Fre- quency	Ob- served Fre- quency	Ex- pected Fre- quency	Ob- served Fre- quency	Ex- pected Fre- quency	
3.05 - 4.00	8	7.4	5	3.9	16	11.7	13	19.0	42
2.05 - 3.04	19	22.1	15	11.7	40	35.7	51	56.4	125
1.05 - 2.04	21	17.0	6	9.0	18	26.7	51	43.3	96
0.00 - 1.04	1	2.5	0	1.3	3	3.9	10	6.3	14
Total Observed Frequency	49		26		77		125		277

$$\chi^2 = 14.590$$

Family Income and Achievement

In attempting to deal with the problem of associating family income and grade-point averages, it again became necessary to make some adjustments in the categories used in the preceding table. To facilitate statistical computations, the income categories were regrouped into the following divisions: (1) \$2,999 and under; (2) \$3,000 to \$5,999; (3) \$6,000 to \$9,999; and (4) \$10,000 and above. Statistical computations for Chi-square to show the relationship of family income and grade-point averages are shown in Table 51.

As shown in Table 51, the computed Chi-square associating family income with achievement was 16.173. At the .05 confidence level with 9 degrees of freedom a Chi-square of 16.919 is required for significance of difference. So, here again, evidence seems to reject a commonly held belief, at least insofar as one freshman college class is concerned. The findings in this area of the study did not indicate a significant relationship between family income and academic achievement.

Parental Educational Attainment and Achievement

Although the educational level of both parents was shown in tables presented earlier in this chapter, only the fathers' educational attainment was used in the statistical computation for the degree of association between parental education and academic achievement of students. A Chi-square

TABLE 51

CONTINGENCY TABLE SHOWING THE RELATIONSHIP BETWEEN
FAMILY INCOME AND GRADE-POINT AVERAGES

Grade- Point Averages	Family Income								Total Ob- served Fre- quency
	\$2,999 and Under		\$3,000- \$5,999		\$6,000- \$9,999		\$10,000 and Above		
	Ob- served Fre- quency	Ex- pected Fre- quency	Ob- served Fre- quency	Ex- pected Fre- quency	Ob- served Fre- quency	Ex- pected Fre- quency	Ob- served Fre- quency	Ex- pected Fre- quency	
3.05 - 4.00	16	13.3	18	18.5	8	8.7	5	6.5	47
2.05 - 3.04	22	35.5	59	49.2	26	23.0	18	17.3	125
1.05 - 2.04	37	27.2	31	37.8	14	17.7	14	13.3	96
0.00 - 1.04	5	4.0	3	5.5	4	2.6	2	1.9	14
Total Observed Frequency	80		111		52		39		282

$$\chi^2 = 16.173$$

of 15.716 was found. For significance of difference at the .05 level, with 9 degrees of freedom a Chi-square of at least 21.026 is required. Since the computed Chi-square was less than the figure required, the association of parental education with academic achievement was not significant. This finding, too, seems to be contrary to the sociological maxim that education begets more education. The results of the test in this case might be partially explained by the fact that only 22, or 7.6 per cent of the fathers were college graduates. Chi-square data for determining the relationship between fathers' educational attainment and grade-point averages are shown in Table 52.

Separate Chi-square tests were made for Groups A and B to determine the association of academic achievement and parental occupation, family income, and educational attainment for the individual groups. For Group A, no significant relationship was found between either secondary school or collegiate achievement and any of the three socio-economic variables. For Group B, a significant relationship was found between ACT Composite scores (secondary school) and parental occupation, and between grade-point averages (collegiate) and family income. No significant relationship was found between achievement and the other variables. Computational data for these findings are shown in Tables 53 to 64.

TABLE 52

CONTINGENCY TABLE SHOWING THE RELATIONSHIP BETWEEN FATHERS'
EDUCATIONAL ATTAINMENT AND STUDENTS' GRADE-POINT
AVERAGES, LANGSTON UNIVERSITY FRESHMEN,
FALL, 1969

Grade- Point Averages	Fathers' Educational Attainment										Total Ob- served Fre- quency
	Less Than 12 Years		High School Graduation		Some College		College Graduation		Graduate or Prof. Degree		
	Ob- served Fre- quency	Ex- pected Fre- quency	Ob- served Fre- quency	Ex- pected Fre- quency	Ob- served Fre- quency	Ex- pected Fre- quency	Ob- served Fre- quency	Ex- pected Fre- quency	Ob- served Fre- quency	Ex- pected Fre- quency	
3.05 - 4.00	9	11.5	16	14.7	9	7.8	4	5.1	5	3.8	43
2.05 - 3.04	34	34.3	42	43.9	27	23.3	11	15.1	14	11.4	128
1.05 - 2.04	30	25.7	33	44.3	11	17.5	16	11.3	6	8.6	96
0.00 - 1.04	2	3.5	5	4.5	4	2.4	2	1.5	0	1.2	13
Total Observed Frequency	75		96		51		33		25		280

$$\chi^2 = 15.716$$

Statistical computation to determine the relationship between parental occupations and ACT Composite scores of Group A showed a Chi-square of 23.441. The critical ratio at the .05 level with 16 degrees of freedom is 26.300. Since the computed Chi-square was less than the critical ratio, there was no significant difference between occupations of parents and ACT scores of Group A. Data are shown in Table 53.

Chi-square for significance of difference between ACT Composite scores and family income of Group A was 8.522. This was less than the critical ratio of 21.05 at the .05 level with 12 degrees of freedom. Therefore, there was no significant difference between ACT scores and family income, as shown in Table 54.

When ACT Composite scores of Group A were associated with educational attainment of parents, a Chi-square of 17.582 was found. This was considerably less than the critical ratio of 26.300 with 16 degrees of freedom at the .05 level, indicating no significant relationship between parental education and ACT scores of Group A. Chi-square data are shown in Table 55.

A similar lack of significance was shown between Grade-point averages of Group A and parental occupation. The computed Chi-square was 10.344, as shown in Table 56, while the critical ratio is 21.03 with 12 degrees of freedom at the .05 level.

Table 57 shows the relationship between grade-point averages and family income of Group A. Again, the calculated

TABLE 53

CONTINGENCY TABLE SHOWING THE RELATIONSHIP BETWEEN ACT COMPOSITE
SCORES AND PARENTAL OCCUPATION, GROUP A, LANGSTON
UNIVERSITY FRESHMEN, FALL, 1969

ACT Com- posite Scores	Parental Occupations								Total Ob- served Fre- quency
	Professional & Managerial		Clerical and Sales		Skilled Occupations		Unskilled Occupations		
	Ob- served Fre- quency	Ex- pected Fre- quency	Ob- served Fre- quency	Ex- pected Fre- quency	Ob- served Fre- quency	Ex- pected Fre- quency	Ob- served Fre- quency	Ex- pected Fre- quency	
21 and Over	5	2.3	0	1.3	4	2.7	2	4.7	11
16 to 20	6	6.2	7	3.6	6	7.3	11	12.9	30
11 to 15	7	8.8	3	5.2	11	10.4	22	18.5	43
6 to 10	3	3.5	0	2.1	4	4.1	10	7.3	17
0 to 5	1	1.2	3	.7	1	1.5	1	2.6	6
Total Observed Frequency	22		13		26		46		107

$$\chi^2 = 23.441$$

TABLE 54

CONTINGENCY TABLE SHOWING THE RELATIONSHIP BETWEEN ACT COMPOSITE
SCORES AND FAMILY INCOME OF GROUP A, LANGSTON
UNIVERSITY FRESHMEN, FALL, 1969

ACT Com- posite Scores	Family Income								Total Ob- served Fre- quency
	\$2,999 and Under		\$3,000- \$5,999		\$6,000- \$9,999		\$10,000 and Above		
	Ob- served Fre- quency	Ex- pected Fre- quency	Ob- served Fre- quency	Ex- pected Fre- quency	Ob- served Fre- quency	Ex- pected Fre- quency	Ob- served Fre- quency	Ex- pected Fre- quency	
21 and Over	2	3.3	5	3.9	3	2.3	1	1.4	11
16 to 20	7	9.4	12	11.4	8	6.5	4	4.0	31
11 to 15	16	13.0	14	15.4	6	9.1	7	5.5	43
6 to 10	6	5.4	7	6.4	3	3.8	2	2.3	18
0 to 5	2	1.8	1	2.1	3	1.3	0	0.8	6
Total Observed Frequency	33		39		23		14		109

$$\chi^2 = 8.522$$

TABLE 55

CONTINGENCY TABLE SHOWING THE RELATIONSHIP BETWEEN ACT COMPOSITE
SCORES AND EDUCATIONAL ATTAINMENT OF PARENTS, GROUP A,
LANGSTON UNIVERSITY FRESHMEN, FALL, 1969

Educational Attainment of Parents											
ACT Com- posite Scores	Less Than 12 Years		High School Graduation		Some College		College Graduation		Graduate or Prof. Degree		Total Ob- served Fre- quency
	Ob- served Fre- quency	Ex- pected Fre- quency	Ob- served Fre- quency	Ex- pected Fre- quency	Ob- served Fre- quency	Ex- pected Fre- quency	Ob- served Fre- quency	Ex- pected Fre- quency	Ob- served Fre- quency	Ex- pected Fre- quency	
21 and over	0	2.5	3	4.1	4	2.2	2	1.6	2	0.7	11
16 to 20	7	7.0	12	11.5	4	6.1	4	4.5	4	2.0	31
11 to 15	11	9.9	18	16.3	8	8.7	6	6.3	1	2.8	44
6 to 10	4	4.3	8	7.0	4	3.8	3	2.7	0	1.2	19
0 to 5	3	1.4	0	2.2	2	1.2	1	0.9	0	0.4	6
Total Observed Frequency	25		41		22		16		7		111

$$\chi^2 = 17.582$$

TABLE 56

CONTINGENCY TABLE SHOWING THE RELATIONSHIP BETWEEN GRADE-POINT
AVERAGES AND PARENTAL OCCUPATION, GROUP A,
LANGSTON UNIVERSITY FRESHMEN, FALL, 1969

Grade- Point Averages	Parental Occupations										Total Ob- served Fre- quency
	Professional & Managerial		Clerical and Sales		Skilled Occupations		Unskilled Occupations		Unemployed		
	Ob- served Fre- quency	Ex- pected Fre- quency	Ob- served Fre- quency	Ex- pected Fre- quency	Ob- served Fre- quency	Ex- pected Fre- quency	Ob- served Fre- quency	Ex- pected Fre- quency	Ob- served Fre- quency	Ex- pected Fre- quency	
3.05 - 4.00	6	5.3	2	2.5	7	5.5	7	9.7	2	1.0	24
2.05 - 3.04	14	13.1	8	6.1	15	13.6	20	23.9	2	2.3	59
1.05 - 2.04	8	8.2	2	3.8	6	8.5	20	15.0	1	1.5	37
0.00 - 1.04	0	1.3	1	0.6	1	0.6	4	2.4	0	0.2	6
Total Observed Frequency	28		13		29		51		5		126

$$\chi^2 = 10.344$$

TABLE 57

CONTINGENCY TABLE SHOWING THE RELATIONSHIP BETWEEN GRADE-POINT
AVERAGES AND FAMILY INCOME OF GROUP A, LANGSTON
UNIVERSITY FRESHMEN, FALL, 1969

Grade- Point Averages	Family Income								Total Ob- served Fre- quency
	\$2,999 and Under		\$3,000- \$5,999		\$6,000- \$9,999		\$10,000 and Above		
	Ob- served Fre- quency	Ex- pected Fre- quency	Ob- served Fre- quency	Ex- pected Fre- quency	Ob- served Fre- quency	Ex- pected Fre- quency	Ob- served Fre- quency	Ex- pected Fre- quency	
3.05 - 4.00	9	7.2	8	8.6	4	5.0	3	3.2	24
2.05 - 3.04	13	17.8	23	21.1	14	12.2	9	8.0	59
1.05 - 2.04	13	11.5	12	13.6	8	7.8	5	5.1	38
0.00 - 1.04	3	1.5	2	1.8	0	1.0	0	0.7	5
Total Observed Frequency	38		45		26		17		126

$$\chi^2 = 6.169$$

Chi-square of 6.169 is less than the ratio of 16.920 with 9 degrees of freedom at the .05 per cent level. Thus, no significant difference was found between grade-point averages and family income of Group A.

A Chi-square of 10.433 was found when calculations were made for the relationship between grade-point averages of Group A and the educational attainment of their parents. Since this was less than the 21.03 critical ratio at the .05 level with 12 degrees of freedom, there was no significant difference between this area of achievement and educational attainment of parents of Group A. Data are shown in Table 58.

Computations for the statistical relationship between ACT Composite scores and parental occupations of Group B showed a Chi-square of 29.577. The critical ratio is 26.300 with 16 degrees of freedom at the .05 level. Since the latter figure is less than the computed Chi-square, a significant difference was shown between the ACT scores and the parental occupations of Group B, as shown in Table 59.

A Chi-square of 11.755 was found between ACT Composite scores and family income of Group B. Since this is less than the critical ratio of 21.03 with 12 degrees of freedom at the .05 level, no significant difference was shown between family income and ACT scores of Group B. Data are shown in Table 60.

Table 61 presents data for the computation of Chi-square for the relationship between the educational attainment of parents and ACT Composite scores of Group B. Chi-square

TABLE 58

CONTINGENCY TABLE SHOWING THE RELATIONSHIP BETWEEN GRADE-POINT
AVERAGES AND EDUCATIONAL ATTAINMENT OF PARENTS, GROUP A,
LANGSTON UNIVERSITY FRESHMEN, FALL, 1969

Educational Attainment of Parents											
Grade- Point Averages	Less Than 12 Years		High School Graduation		Some College		College Graduation		Graduate or Prof. Degree		Total Ob- served Fre- quency
	Ob-	Ex-	Ob-	Ex-	Ob-	Ex-	Ob-	Ex-	Ob-	Ex-	
	served Fre- quency	pected Fre- quency	served Fre- quency	pected Fre- quency	served Fre- quency	pected Fre- quency	served Fre- quency	pected Fre- quency	served Fre- quency	pected Fre- quency	
3.05 - 4.00	3	5.1	10	8.4	5	5.0	2	3.2	4	2.3	24
2.05 - 3.04	14	12.6	18	20.6	14	12.2	6	8.0	7	5.6	59
1.05 - 2.04	9	7.9	13	12.9	6	7.6	8	5.0	1	3.5	37
0.00 - 1.04	1	1.3	3	2.1	1	1.2	1	0.8	0	0.6	6
Total Observed Frequency	27		44		26		17		12		126

$$\chi^2 = 10.433$$

TABLE 59

CONTINGENCY TABLE SHOWING THE RELATIONSHIP BETWEEN ACT COMPOSITE
SCORES AND PARENTAL OCCUPATION, GROUP B, LANGSTON
UNIVERSITY FRESHMEN, FALL, 1969

ACT Com- posite Scores	Parental Occupation										Total Ob- served Fre- quency
	Professional & Managerial		Clerical and Sales		Skilled Occupations		Unskilled Occupations		Unemployed		
	Ob- served Fre- quency	Ex- pected Fre- quency	Ob- served Fre- quency	Ex- pected Fre- quency	Ob- served Fre- quency	Ex- pected Fre- quency	Ob- served Fre- quency	Ex- pected Fre- quency	Ob- served Fre- quency	Ex- pected Fre- quency	
21 and over	1	0.3	0	0.3	1	0.5	0		0	0.0	2
16 to 20	2	3.1	7	3.0	5	4.9	4		1	0.1	19
11 to 15	9	8.1	7	7.7	11	12.7	22		0	0.4	49
6 to 10	6	7.8	6	7.4	15	12.2	20		0	0.4	47
0 to 5	3	1.7	0	1.6	1	2.6	6		0	0.1	10
Total Observed Frequency	21		20		33		52		1		127

$$\chi^2 = 29.577$$

TABLE 60

CONTINGENCY TABLE SHOWING THE RELATIONSHIP BETWEEN ACT COMPOSITE
SCORES AND FAMILY INCOME OF GROUP B, LANGSTON
UNIVERSITY FRESHMEN, FALL, 1969

ACT Com- posite Scores	Family Income								Total Ob- served Fre- quency
	\$2,999 and Under		\$3,000- \$5,999		\$6,000- \$9,999		\$10,000 and Above		
	Ob- served Fre- quency	Ex- pected Fre- quency	Ob- served Fre- quency	Ex- pected Fre- quency	Ob- served Fre- quency	Ex- pected Fre- quency	Ob- served Fre- quency	Ex- pected Fre- quency	
21 and Over	0	0.6	1	0.8	0	0.3	1	0.3	2
16 to 20	3	5.2	9	7.8	2	3.0	5	3.0	19
11 to 15	15	13.5	17	20.1	8	7.7	9	7.7	49
6 to 10	12	12.6	23	19.2	8	7.4	4	7.4	47
0 to 5	5	2.8	2	4.1	2	1.6	1	1.6	10
Total Observed Frequency	35		52		20		20		127

$$\chi^2 = 11.755$$

TABLE 61

CONTINGENCY TABLE SHOWING THE RELATIONSHIP BETWEEN ACT COMPOSITE
SCORES AND EDUCATIONAL ATTAINMENT OF PARENTS, GROUP B,
LANGSTON UNIVERSITY FRESHMEN, FALL, 1969

ACT Com- posite Scores	Educational Attainment of Parents										Total Ob- served Fre- quency
	Less Than 12 Years		High School Graduation		Some College		College Graduation		Graduate or Prof. Degree		
	Ob- served Fre- quency	Ex- pected Fre- quency	Ob- served Fre- quency	Ex- pected Fre- quency	Ob- served Fre- quency	Ex- pected Fre- quency	Ob- served Fre- quency	Ex- pected Fre- quency	Ob- served Fre- quency	Ex- pected Fre- quency	
21 and over	0	0.8	1	1.1	1	0.6	1	0.3	0	0.2	3
16 to 20	2	4.7	8	6.7	5	3.4	1	1.9	2	1.4	18
11 to 15	14	12.8	14	18.3	10	9.3	6	5.1	5	3.9	49
6 to 10	11	12.0	23	17.2	6	8.8	4	4.7	2	3.7	46
0 to 5	6	2.9	1	4.1	2	2.1	1	1.1	1	0.9	11
Total Observed Frequency	33		47		24		13		10		127

$$\chi^2 = 17.281$$

was 17.281 compared with a critical ratio of 26.300 at the .05 level with 16 degrees of freedom. Since 17.281 is less than the required 26.300, no significant difference was found between educational attainment of parents and ACT scores of Group B.

Statistical computation for the significance of difference between grade-point averages and parental occupation for Group B showed a Chi-square of 16.626, as indicated in Table 62. This is less than the critical ratio of 21.030. Therefore, there was no significant difference between grade-point averages and parental occupation of Group B.

Chi-square for the relationship between family income and grade-point averages of Group B was 26.554, as shown in Table 63. This is greater than the critical ratio of 16.920 with 9 degrees of freedom. Thus, a significant difference was found between grade-point averages and family income of Group B.

Table 64 shows a Chi-square of 13.383, which is less than the critical ratio of 23.030, at the .05 per cent confidence level with 12 degrees of freedom, indicating no significant difference between the educational attainment of parents and the grade-point averages of Group B.

TABLE 62

CONTINGENCY TABLE SHOWING THE RELATIONSHIP BETWEEN GRADE-POINT
AVERAGES AND PARENTAL OCCUPATION, GROUP B, LANGSTON
UNIVERSITY FRESHMEN, FALL, 1969

Grade- Point Averages	Parental Occupations										Total Ob- served Fre- quency
	Professional & Managerial		Clerical and Sales		Skilled Occupations		Unskilled Occupations		Unemployed		
	Ob- served Fre- quency	Ex- pected Fre- quency	Ob- served Fre- quency	Ex- pected Fre- quency	Ob- served Fre- quency	Ex- pected Fre- quency	Ob- served Fre- quency	Ex- pected Fre- quency	Ob- served Fre- quency	Ex- pected Fre- quency	
3.05 - 4.00	2	2.9	1	2.6	8	4.6	7	7.7	0	0.2	18
2.05 - 3.04	10	11.1	15	10.3	19	17.8	25	29.9	1	0.9	70
1.05 - 2.04	13	9.7	7	8.9	12	15.2	28	26.0	1	1.0	61
0.00 - 1.04	0	1.3	0	1.2	1	2.0	7	3.4	0	0.1	8
Total Observed Frequency	25		23		40		67		2		157

$$\chi^2 = 16.626$$

TABLE 63

CONTINGENCY TABLE SHOWING THE RELATIONSHIP BETWEEN GRADE-POINT
AVERAGES AND FAMILY INCOME OF GROUP B, LANGSTON
UNIVERSITY FRESHMEN, FALL, 1969

Grade- Point Averages	Family Income								Total Ob- served Fre- quency
	\$2,999 and Under		\$3,000- \$5,999		\$6,000- \$9,999		\$10,000 and Above		
	Ob- served Fre- quency	Ex- pected Fre- quency	Ob- served Fre- quency	Ex- pected Fre- quency	Ob- served Fre- quency	Ex- pected Fre- quency	Ob- served Fre- quency	Ex- pected Fre- quency	
3.05 - 4.00	7	4.9	6	7.6	3	2.7	2	2.7	18
2.05 - 3.04	10	19.0	39	29.7	12	10.6	9	10.6	70
1.05 - 2.04	23	16.3	21	25.4	4	9.1	12	9.1	60
0.00 - 1.04	3	2.7	1	4.2	5	1.5	1	1.5	10
Total Observed Frequency	43		67		24		24		158

$$\chi^2 = 26.554$$

TABLE 64

CONTINGENCY TABLE SHOWING THE RELATIONSHIP BETWEEN GRADE-POINT
AVERAGES AND EDUCATIONAL ATTAINMENT OF PARENTS, GROUP B,
LANGSTON UNIVERSITY FRESHMEN, FALL, 1969

Grade- Point Averages	Educational Attainment of Parents										Total Ob- served Fre- quency
	Less Than 12 Years		High School Graduation		Some College		College Graduation		Graduate or Prof. Degree		
	Ob- served Fre- quency	Ex- pected Fre- quency	Ob- served Fre- quency	Ex- pected Fre- quency	Ob- served Fre- quency	Ex- pected Fre- quency	Ob- served Fre- quency	Ex- pected Fre- quency	Ob- served Fre- quency	Ex- pected Fre- quency	
3.05 - 4.00	6	5.7	5	6.0	4	3.0	2	1.8	1	1.5	18
2.05 - 3.04	20	21.7	26	23.0	13	11.5	3	7.1	7	5.8	69
1.05 - 2.04	22	19.2	19	21.3	6	10.2	9	6.3	5	5.1	61
0.00 - 1.04	1	2.5	2	2.7	3	1.3	2	0.8	0	0.7	8
Total Expected Frequency	49		52		26		16		13		156

150

$$\chi^2 = 13.383$$

Summary of Findings

In summary, this chapter has presented essential data pertaining to the educational products of socially variant backgrounds, i.e., racially segregated vs. nonsegregated secondary education.

Two hundred and ninety-one subjects were used in the study. Membership in each of the two groups into which the subjects were divided was based on the percentage of Negro enrollment in the high school from which the student had graduated. The groups were designated as Group A and Group B. Group A was composed of students who graduated from high schools with an enrollment of 1.0 to 59.9 per cent Black students. For purposes of this study, these schools were considered desegregated. Group B was composed of students who came from schools with a Negro enrollment of 60.0 to 100.0 per cent Negro and was considered predominantly Black.

Men outnumbered the women students participating in the study. There were 65, or 49.6 per cent men in Group A, and 89, or 56.6 per cent in Group B, making a total of 154 men. One hundred thirty-seven, or 47.0 per cent of the study population were women.

The overwhelming majority of the students in both groups were single. One hundred and three, or 79 per cent of the members of Group A reported single status, while 131, or 81.8 per cent of Group B were in that category. The number of dependents reported by the subjects ranged from zero to

six. One hundred and sixteen students in Group A had no children, while 148 from Group B reported none. One person in the latter group reported six dependents.

Seventy-two, or 55 per cent of Group A received their major support from their families, while 80, or 50 per cent of Group B reported their family as being their major source of support.

The majority of the students in Group A, 49, or 30.5 per cent, came from small town schools, while most of Group B, 89, or 55.8 per cent came from the urban-medium type schools.

The membership of Group A included 109 Oklahoma high school graduates and 22 students from out of the state. Group B consisted of 100 students whose geographic origin is Oklahoma and 60 from outside the state. The largest regional representation in Group A was the Northern Plains, with 10, or 7.16 per cent of the group from that area. Twenty-two students, or 11.25 per cent, in Group B came from the Northern Plains, which was also their largest group from a single area.

The academic achievement of the students was evaluated and compared on two parts: (1) secondary achievement as determined by scores on the American College Test and participation in school organizations and activities; and (2) collegiate level performance as determined by grade-point averages at the end of the first semester and persistence or continuation into the second semester. The academic achievement of

the students was then associated with certain socio-economic variables. These variables included the size and type of schools from which the students graduated, the students' sex, the occupations of their parents, the educational level of parents, and the family income.

In evaluating precollegiate performance the ACT Composite standard scores served as the basic measure of academic achievement. Although no statistically significant difference was found in the scores for the two groups, other evidence seemed to point in a definite direction. For example, 70, or 53.4 per cent of Group A made scores above the median of the ACT Composite Standard scores, while only 42, or 23.6 per cent of Group B scored as high. There was a statistically significant difference in the scores between the groups on the English test of ACT, in favor of Group A. No statistically significant difference between the groups was found in the scores for the Mathematics test of ACT, nor in their participation in secondary school organizations and activities.

Turning to size of schools from which the members of each group graduated, a significant difference appears to exist. The majority, 77, or 58.8 per cent, of Group A came from schools with enrollments of 0 to 749. Only 54, or 33.8 per cent, of Group B's members came from schools of this size. A Chi-square test score was 17.542. For significance at the .05 per cent level with 1 degree of freedom, a Chi-square of

only 3.841 is required. Thus, a significant difference existed between the groups with respect to the sizes of secondary schools from which they graduated. In comparing ACT scores with the sizes of high schools, it was found that 10, or 7.5 per cent of students who graduated from schools ranging in size from 0 to 749 made Composite ACT scores of 21 and over; none from schools of 750 to 1249 made such scores; one, or 1.6 per cent of the students from schools of 1250 to 1999 made as high a score; and two, or 5.7 per cent, from schools with enrollments of 2,000 and above made scores of 21 or over.

In the area of differences in the precollegiate achievement of the sexes, statistically significant differences were found between (1) the scores of men and women on the ACT Composite Standard test, and (2) the English section of ACT. Statistically insignificant differences between the sexes were found in the Mathematics test of the ACT battery.

In evaluating performance at the college level, the basic measures used were first semester grade-point averages and persistence into the second semester. Also reported in this area were decisions concerning the pursuance of work toward the baccalaureate and post-baccalaureate degrees, and selection of major subject fields. Also included here were data associating academic achievement with the socio-economic variables of high school size and type, parental occupation, family income, and educational attainment of parents.

In comparing grade-point averages, it was found that 77, or 58.7 per cent, of the students in Group A made scores above the median of 2.231. Seventy-six, or 47.5 per cent, from Group B earned grade points above the median.

A Chi-square test to determine the significance of difference between the scores of the two groups yielded a value of 3.983. For significance at the .05 level, a Chi-square must be equal to or greater than 3.841. Therefore, a significant difference existed in the grade-point averages of students comprising Groups A and B.

When it was sought to determine the relationship between grade-point averages and the sizes of schools from which the students had graduated, a Chi-square of 25.349 was found. A Chi-square equal to or greater than 16.919 is required for significance of difference at the .05 level with 9 degrees of freedom. Therefore, a significant difference was found to exist between grade-point averages and size of school.

A Chi-square test for association between grade-point averages and type of high school yielded a Chi-square of 7.874. For significance at the .05 per cent level with 9 degrees of freedom a Chi-square must be equal to or greater than 16.919. Since the computed Chi-square is considerably less than required, there was no significant difference in type of high school and grade-point averages. Thus, it may be assumed that no relationship existed between grade-point

averages and type (urban-large, urban-medium, small town, and rural) schools.

Thirty-five, or 16.5 per cent of the 209 Oklahoma high school graduates earned grade-point averages of 3.05 to 4.00, while only eight, or 9.8 per cent of the out-of-state students made averages in the highest category.

Tests for the significance of difference between the groups' intentions with respect to the baccalaureate degree revealed a Chi-square of .594 which is less than the required 3.841 at the .05 per cent level. Therefore, it appears that no difference existed between the intentions of the groups in plans to obtain this degree.

Students' intentions with respect to obtaining a post-bachelor's degree showed a Chi-square of .035. For significance at the .05 level, the required Chi-square must be equal to or greater than 3.841. Thus, no significant difference existed in the intentions of Groups A and B in their plans for obtaining a post-bachelor's degree.

In the matter of persistence, a Chi-square of .035 was found. Since this is less than the required Chi-square of 3.841, there was no significant difference between the groups with respect to persistence or continuation in school.

The Chi-square test for significance of difference between Groups A and B with respect to choice of major field of study yielded a Chi-square of 27.806. With 13 degrees of freedom at the .05 level, the required Chi-square must be at

least 22.362. Since the computed figure is higher than 22.362 a significant difference existed between the groups in selection of majors.

Turning now to college level academic achievement as it relates to sex, there was a distinct significance of difference in the grade-point averages of the women and men students. A Chi-square of 10.735 was found. For significance at the .05 per cent level a Chi-square of only 3.841 is required.

When testing for the association between decisions of men and women with respect to obtaining the baccalaureate degree, no significant difference was found. Chi-square was found to be .0435. To be significant at the .05 per cent level Chi-square must be at least 3.841.

The test for association between the decisions of members of both sexes concerning work for the post-bachelor's degree showed results similar to those above. A Chi-square of .107 was found, indicating no significant difference between the decisions of the men and women.

A Chi-square of .013 was found when persistence between the sexes was tested. This is considerably less than the required Chi-square of 3.841 at the .05 per cent level. Thus, there was no significant difference between the persistence of the men and women students.

In the area of academic achievement and socio-economic variables, statistically insignificant differences were found between academic achievement and occupations of parents,

between family income and academic achievement, and between educational attainment and academic achievement.

When the two groups were separated and the data for each group tested for association between academic achievement and the three socio-economic variables mentioned above, results were similar to those found for the combined groups. Insignificant relationships were found between achievement and the social and economic variables of each group with the exception of two variables for Group B. For the latter group, a significant relationship was found between ACT Composite scores and parental occupations, and between grade-point averages and family income.

CHAPTER V

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

The general purpose of this study was to examine the educational products of socially variant backgrounds, i.e., racially segregated vs. nonsegregated secondary education. The examination included an evaluation of data on two parts: (1) secondary school achievement, and (2) collegiate level performance.

The problem of the study was to describe the performances of Negro freshmen students at Langston University who came from segregated and nonsegregated high schools.

The research hypothesis being investigated was: Negro students at Langston University who enrolled as freshmen in the fall of 1969, who graduated from predominantly Negro (i.e., segregated) high schools will evidence different levels of performance than will Negro students at Langston University who enrolled as freshmen the same year but who graduated from nonsegregated high schools.

In an attempt to determine whether any differences existed between the two groups, the following questions were explored:

1. What are the characteristics of the population of the study in terms of sex, high school background, geographic origin, and socio-economic background?

2. How do these characteristics relate to measures of collegiate success as described by academic achievement, leadership, and persistence?

3. How do these characteristics relate to the segregated and nonsegregated groups?

In order to compare the performance of students from desegregated and segregated secondary schools, the subjects participating in the study were divided into two groups. The first group, designated as Group A, was composed of 131 students who graduated from schools in which the Negro enrollment ranged from 1.0 to 59.9 per cent. The second group, designated as Group B, included 160 students who came from schools with a Negro enrollment of 60.0 to 100.0 per cent. Group A was considered to be from desegregated schools, while Group B was considered as having graduated from predominantly Black or segregated schools.

Summary and Conclusions

Women students outnumbered by one the men students comprising Group A, while there were 18 more men than women in Group B. The study population consisted of 154 men and 137 women.

The majority of the students in both groups were single. One hundred sixteen students in Group A had no children or other dependents, and 148 from Group B reported no dependents. Most of both Group A and Group B reported their major source of support as being their families. Both groups reported the number of veterans as 3.8 per cent.

The majority of students in Group A came from small town schools, while most of Group B came from urban-medium type schools. The membership of both groups included many more Oklahoma high school graduates than out-of-state students.

In evaluating precollegiate academic performance of the groups, no significant differences were found between the ACT Composite and Mathematics test scores, nor in student participation in secondary school organizations and activities. Significant differences were found in the ACT English test scores, as well as a difference between the groups in the sizes of schools from which they graduated. The majority of students in Group A came from small schools, while most of those in Group B were from the larger schools. There was no significant difference between the performance of men and women of Group A on the ACT Mathematics test, however, the women of Group A made higher scores on the ACT English test. The same was true for Group B.

The collegiate level performance of the groups showed some differences. For example, there was a significant

difference in the grade-point averages of the two groups, in favor of Group A. There were also significant differences between the groups in their choices of major fields of study, and in their grade-point averages in comparison with the size of high schools from which they graduated.

Insignificant differences were found between the groups with respect to their intentions to study toward the baccalaureate and post-baccalaureate degrees, their persistence into the second semester, and to the types of secondary schools from which they came.

There was a significant difference between grade-point averages of the men and women, in favor of the women. No significant difference was found between the sexes in their intentions to obtain the bachelor's and post-bachelor's degrees, nor in their persistence.

Contrary to most other studies, no significant differences were found between academic achievement and the socio-economic variables of parental occupation, family income, and the educational attainment of parents.

It is quite possible that the preceding paragraph might provide the answer to the question of the appropriateness of conventional predictors of academic achievement in a contemporary situation. On the basis of findings of numerous studies, it would appear that the three socio-economic variables mentioned above would have a definite bearing on the academic achievement of students.

In terms of the great amount of time usually involved in educational and social change, the period between the 1954 Supreme Court decision regarding the desegregation of schools and the present time has been relatively short. In succeeding years, no doubt, more conclusive evidence will be available concerning the effects of desegregation on the scholastic achievement of Black students.

The findings of the study warrant the following conclusions: Within the limitations of this study, more similarities than differences exist between students from non-segregated and predominantly Black secondary schools; and four conventional predictors (the results of intelligence tests, parental occupation, family income, and educational attainment of parents) of academic achievement were not significant.

Recommendations

The present study was limited to one institution of higher education and extended over only one semester. While some of the observations may have a larger application than to this institution, similar studies in different sections of the country would be worthwhile. Therefore, the following recommendations are offered:

1. Additional research similar to the present investigation, involving several colleges and universities of different sizes and types.

2. Longitudinal studies of Black students from socially variant backgrounds, i.e., predominantly Black vs. nonsegregated secondary schools--from the freshman through the senior college years.
3. Additional research designed to determine the effects of desegregation on the nonintellectual aspects of the student personality and their relationship to individual educational progress.
4. Extensive re-examination of the methods by which the intellectual potentialities of disadvantaged youth are evaluated.

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APPENDIX I

LANGSTON UNIVERSITY
Langston, Oklahoma

Student Status Survey

Dear Student:

This questionnaire has been designed to secure information about students who are enrolled as freshmen at Langston University during the fall semester, 1969-70. The information is to be used in a study which we believe will be helpful to administrators, parents, counselors, and faculty as they guide the students in achieving their educational goals. Your cooperation and assistance in this endeavor will be greatly appreciated.

Please complete this form as accurately and completely as possible.

(Do not write
on lines below)

1. Please print your name: _____
Last First Middle
2. Your date of birth: _____
Month Day Year
3. Your permanent mailing address (where your mail
will always reach you):

Street City State
4. Sex: _____ Male; _____ Female.
5. Marital Status: _____ Single; _____ Married;
_____ Divorced or Separated; _____ Widowed.

- _____ 6. Number of Children _____; Number of other dependents _____.
- _____ 7. Are you a Veteran: _____ Yes; _____ No.
- _____ 8. Indicate the primary source of financial support that enables you to attend college this year.
 _____ Family; _____ Scholarship; _____ Yourself
- _____ 9. Name and address of the last high school attended:
 _____ City or Town: _____
 _____ County _____ State _____
- _____ 10. Date of graduation from high school:

 _____ Month _____ Day _____ Year _____
- _____ 11. Occupation of parents: _____ Father;
 _____ Mother.
- _____ 12. Which of the following is your best estimate of the approximate income category for your parents when you were in high school:
- (1) _____ Under \$1,000 (6) _____ \$ 9,000-\$10,999
 (2) _____ \$1,000-\$2,999 (7) _____ \$11,000-\$12,999
 (3) _____ \$3,000-\$4,999 (8) _____ \$13,000-\$14,999
 (4) _____ \$5,000-\$6,999 (9) _____ Over \$15,000
 (5) _____ \$7,000-\$8,999 (10) _____ Do not know
- _____ 13. Indicate your parents' highest educational attainment (circle the appropriate number in each column).
- | | <u>Father</u> | <u>Mother</u> |
|---|---------------|---------------|
| 8th grade or less. | 1 | 1 |
| Some high school work. | 2 | 2 |
| High school graduate | 3 | 3 |
| Some college work. | 4 | 4 |
| College graduate | 5 | 5 |
| Graduate or professional degree beyond bachelor's . . . | 6 | 6 |

_____ 14. Do you plan to obtain a bachelor's degree?

_____ Yes; _____ No.

_____ 15. If you plan to obtain a bachelor's degree, in what field will you major? _____

_____ 16. Do you plan to obtain a post-bachelor's degree?

_____ Yes; _____ No.

_____ 17. Please list high school activities in which you participated.

a) President, Chairman, or Co-Chairman of:

_____ Sponsor _____

_____ Sponsor _____

_____ Sponsor _____

_____ Sponsor _____

_____ b) Offices held in any organization, elected delegate to conventions, and sub-committee chairmanships:

_____ Sponsor _____

_____ Sponsor _____

_____ Sponsor _____

_____ Sponsor _____

_____ c) Committees you have worked on, departmental clubs, religious organizations, intramurals, etc.:

_____ Sponsor _____

_____ Sponsor _____

_____ Sponsor _____

_____ Sponsor _____

_____ Sponsor _____

_____ d) List organizations not reported above in
which you held membership:

_____ Sponsor _____

_____ Sponsor _____

_____ Sponsor _____

_____ Sponsor _____

APPENDIX II

EXTENT OF DESEGREGATION OF SECONDARY SCHOOLS FROM WHICH LANGSTON UNIVERSITY FRESHMEN STUDENTS GRADUATED

Group A

Per Cent of Desegregation												
Group	0.0 - 9.9		10.0 - 19.9		20.0 - 29.9		30.0 - 39.9		40.0 - 49.9		50.0 - 59.9	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
A	29	22.1	36	27.5	37	28.2	11	8.4	4	3.0	14	10.7

Group B

Per Cent of Desegregation											
Group	60.0 - 69.9		70.0 - 79.9		80.0 - 89.9		90.0 - 99.9		100.0		Total
	No.	%	No.	%	No.	%	No.	%	No.	%	
B	2	1.2	1	0.6	1	0.6	91	56.9	65	40.7	

APPENDIX III

Table 1. Percentile Ranks of ACT Test Standard Scores

SS	Eng. Test			Math. Test			Soc. S. Test			M. Sci. Test			Composite			SS
	Men	Wom-en	To-tal	Men	Wom-en	To-tal	Men	Wom-en	To-tal	Men	Wom-en	To-tal	Men	Wom-en	To-tal	
36																36
35																35
34																34
33																33
32				99		99										32
31				98		98	99	99	99	99		99				31
30				97	99	98	98	98	98	98	99	98				30
29				96	98	97	96	96	96	95	98	96	99			29
28		99		94	98	96	94	94	94	93	97	94	98	99	99	28
27		98	99	92	97	94	91	90	91	89	94	91	97	98	97	27
26	99	96	98	89	95	91	87	87	87	84	91	87	95	96	95	26
25	98	94	96	85	93	88	83	82	83	79	87	82	91	93	92	25
24	96	89	93	81	91	85	78	77	78	73	82	77	87	90	88	24
23	93	84	89	76	98	81	74	73	73	68	78	72	82	85	83	23
22	89	77	85	71	86	77	68	67	67	63	73	67	76	80	77	22
21	85	70	79	65	82	72	61	60	61	58	68	62	69	73	71	21
20	79	61	72	60	78	67	55	54	55	52	61	56	61	66	63	20
19	72	52	64	55	75	63	49	48	48	46	55	49	54	58	55	19
18	63	42	55	49	69	57	42	42	42	41	49	44	46	49	47	18
17	54	33	46	41	62	49	37	36	37	36	43	39	39	41	40	17
16	46	26	38	34	54	41	32	30	31	30	37	33	32	34	33	16
15	39	22	32	26	45	33	27	26	26	25	31	27	25	27	26	15
14	32	17	26	20	36	26	22	21	22	20	25	22	20	20	20	14
13	27	13	21	15	30	21	19	18	19	16	20	18	15	15	15	13
12	22	10	17	11	23	16	16	15	15	13	16	14	11	11	11	12

Table 1--Continued

	Eng. Test			Math. Test			Soc. S. Test			M. Sci. Test			Composite				
SS	Men	Wom- en	To- tal	Men	Wom- en	To- tal	Men	Wom- en	To- tal	Men	Wom- en	To- tal	Men	Wom- en	To- tal	SS	
11	17	8	14	8	18	12	13	12	12	10	12	11	8	8	8	11	
10	13	6	10	6	14	9	10	9	10	7	8	8	5	5	5	10	
9	9	4	7	5	11	7	8	7	7	5	6	5	3	3	3	9	
8	7	3	5	3	8	5	6	5	6	3	4	3	2	2	2	8	
7	5	2	4	2	6	4	4	4	4	2	2	2	1	1	1	7	
6	3	1	2	2	4	3	3	3	3	1	1	1				6	
5	2		1	1	3	2	2	2	2							5	
4	1				2	1	1	1	1							4	
3					1											3	
2																2	
1																1	
Mean	16.0	18.4	16.9	18.7	15.8	17.6	18.7	18.9	18.8	19.4	18.1	18.9	18.3	18.0	18.2		
S.D.	4.9	4.8	5.0	5.8	5.7	5.9	6.3	6.2	6.2	6.1	5.7	6.0	4.9	4.7	4.8		
Number of Colleges				118													
Number of Students				(Men) 33,737			(Women) 21,385			(Total) 55,122							
Source:	American College Testing Program, <u>College Student Profiles</u> (Iowa City: The American College Testing Program, Inc., 1966), p. 34.																

APPENDIX IV

PERCENTILE RANKS OF COLLEGE GRADE POINT AVERAGES
FOR FOUR SUBJECT FIELDS AND OVERALL

GPA	Eng. PR	Math. PR	Soc.S. PR	N.Sci. PR	Overall PR
4.0	98	95	97	97	99
3.9	95	90	95	94	99
3.8	95	90	95	94	99
3.7	95	89	95	94	98
3.6	95	89	94	93	97
3.5	93	88	93	92	96
3.4	92	87	92	91	94
3.3	91	86	91	90	93
3.2	91	86	91	90	91
3.1	91	86	91	90	89
3.0	82	76	83	82	86
2.9	72	66	75	74	83
2.8	72	66	75	74	80
2.7	72	65	75	74	76
2.6	71	65	74	73	72
2.5	66	63	70	70	67
2.4	61	60	66	66	63
2.3	61	60	65	65	58
2.2	60	59	64	65	52
2.1	60	59	64	65	47
2.0	44	45	48	49	41
1.9	27	31	33	34	36
1.8	27	31	33	34	31
1.7	27	30	32	33	26
1.6	27	30	31	33	23
1.5	23	28	27	30	19
1.4	20	26	24	27	16
1.3	19	26	24	26	14
1.2	19	26	23	26	11
1.1	19	26	23	26	10
1.0	13	19	16	18	8
0.9	8	11	9	11	7
0.8	8	11	9	11	6
0.7	8	11	9	11	5
0.6	8	11	9	11	4
0.5	7	11	8	10	3
0.4	6	10	7	9	3
0.3	6	10	7	9	2
0.2	6	9	7	9	2
0.1	6	9	7	8	1
0.0	3	4	3	4	1
Mean	2.11	2.11	2.01	1.99	2.14
S.D.	0.95	1.13	0.98	1.04	0.79

PERCENT OF STUDENTS IN VARIOUS COLLEGE
GPA CATEGORIES

GPA Category	Eng.	Math.	Soc.S.	N.Sci.	Overall
A (3.5-4.0)	7	12	7	8	5
B (2.5-3.4)	29	26	25	24	30
C (1.5-2.4)	42	35	42	39	47
D (0.5-1.4)	15	16	18	19	15
F (0.0-0.4)	7	11	8	10	3
Number of Colleges	121	70	107	91	125
Number of Students	35,807	15,153	27,883	22,030	39,560

Source: American College Testing Program, College Student Profiles (Iowa City: The American College Testing Program, Inc., 1966), p. 52.