To the Graduate Council:

I am sumbitting herewith a dissertation written by Lonell Anderson, Jr. entitled "An Analysis of Student Academic Achievement, Self-Concept and Self-Reliance as Related to School Social Structure and Social Inputs in Knox County and Knoxville City Schools." I have examined the final copy of this dissertation for form and content and recommend that it be accepted in partial fulfillment of the requirements for the degree of Doctor of Education with a major in Educational Administration and Supervision.

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C. Kenneth Tanner, Major Professor

We have read this dissertation
and recommend its acceptance:

Accepted for the Council:

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Vice Chancellor
Graduate Studies and Research

AN ANALYSIS OF STUDENT ACADEMIC ACHIEVEMENT, SELF-CONCEPT AND SELF-RELIANCE AS RELATED TO SCHOOL SOCIAL STRUCTURE AND SCHOOL SOCIAL INPUTS IN KNOX COUNTY AND KNOXVILLE CITY SCHOOLS

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ABSTRACT

The specified purpose of this study was to compare mean student academic achievement and socio-economic indicators in an urban population. Hence, the study was designed to determine if there was a significant relationship between school social structure and student academic achievement as measured by students' scores on the Tennessee Basic Skills Test which was administered in March of 1981.

From a population of 56 schools within the Knoxville City School System and the 45 schools within the Knox County School System, a sample of 100 students was drawn from three schools representing three distinct socio-economic levels. To determine the social structure of the schools selected for the study, the researcher used a revised version of Brookover's School Social Climate Questionnaire. The percentage of Black students in the student bodies of the three schools in the sample was obtained from information provided by the Knoxville City and Knox County schools central offices. Students' scores on the four sub-tests of the Tennessee Basic Skills Test were obtained from the three schools included in the sample. Certain socio-economic and geographical data used in the study were obtained from the Knoxville/Knox County Metropolitan Planning Commission. Duncan's Index of Occupational Status was utilized in order to obtain intervals of students' fathers' occupations.

In this study the computerized Statistical Package for the Social Sciences was employed for the analysis of the School Social

Climate Questionnaire, the percentage of Black students in the student body, and students' scores on the Tennessee Basic Skills Tests. Six of the eight null hypotheses developed for the study were rejected by applying the analysis of variance statistic, the Pearson product moment correlation, Chi Square, and Eta. From an assessment of the evidence obtained, it was concluded that student academic achievement was significantly related to (1) fathers' occupations, (2) school social structure, (3) self-concept, (4) size of the student body, and (5) the percentage of Blacks in the student body.

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CHAPTER I

INTRODUCTION

As society experiences periods of dynamic change, the schools in which our children learn to read and write become more complex and esoteric. The contributions that social forces make to a student's ability to learn simply cannot be ignored by educators. Indeed, these social forces greatly influence the knowledge, values, and behavior which students learn in or out of school. While it is important to consider to what extent social-economic status and race influence educational performance, attention must also be devoted to such variables as school social climate and social structure.

The role of education in American society has received conflicting judgements from educators and other scholars. Some see the schools as having little bearing on a child's achievement that is independent of his or her background and general social context. The inequalities imposed on children by their home, neighborhood, and peer environment are carried along to become the inequalities which confront them when they complete their schooling. Others insist that education operates primarily to induce variation in socio-economic status that is independent of initial status. Education contributes toward equalizing life chances, lifting the poor from their poverty, and maximizing the income power of the individuals processed through it.

Annual expenditures for public education have greatly increased in the United States despite the fact that there has been a steady

decline in student enrollments nationwide. Recently, public education has been confronted with challenges to give proof of its efficiency in terms of production functions and cost effectiveness. A council of despair has been created because of apparent deficiencies in educational outputs (student achievement). A report by the National Science Foundation warns that the number of students completing public education in the United States with only the most rudimentary notions of science, mathematics, and technology portends trouble in the decades ahead.[1]

Among schools in the United States and more specifically schools within certain school districts the variance in mean school achievement has been significant enough to warrant further analysis of school inputs, processes, and outputs. The study by Brookover, et al., revealed an interesting contrast between the majority black schools and the majority white schools, particularly the higher socio-economic status white schools. All the social structure variables were positively associated with mean school achievement in the majority black schools. In the majority white schools the correlations were quite different with the direction being reversed in two instances for the total white sample of 61 schools and in four out of five of the variables among the high socio-economic status white schools.[2]

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[1]National Science Foundation, "How the U.S. Compares with Other Countries," Educational Leadership, Vol. 38, No. 5 (February, 1981), p. 368.

[2]Wilbur Brookover, School Social Systems and Student Achievement: Schools Can Make A Difference (New York: J.F. Bergin Publishers, Inc., 1979), p. 79.

This study concerns itself with the social dimensions of scholastic attainment and seeks to determine the extent to which school social-cultural, socio-economic, racial and other variables significantly affect student academic achievement. Included among the social-cultural variables which may play important roles in student achievement are authority-control structures, task structures, reward systems, and peer group processes in schools. The study also examined the way relations between and among students affect the development of learning environments and how classroom and school campus interaction may promote or retard student academic achievement.

Many studies have examined the relationship between student body racial and socio-economic composition and student achievement, as this study also attempted. However, the present investigation went a step further, since it examined the social system of the school relative to its influence on school level differences in achievement.

An important variable which influences student achievement is the classroom reward structure. Student in-class behavior is determined to a large degree by peer norms and sanctions. In the case of competitive reward structures, for example, the interpersonal reward system is known to work against a high academic performance, because standing out as an academic achiever may lead to social disapproval. The classroom social structure is subsumed by the school climate, which is one of three sets of social system variables. The other two social system variables which contribute to explaining student academic achievement are inputs and social structure.

Brookover, commenting on the relative contribution of the two sub-sets of inputs, noted that the input set is made up of the two measures of student body composition--mean socio-economic status (SES), racial composition of the student body, and several other personnel inputs including school size and average daily attendance.[3]

The socio-economic origins of students are believed by some educators and researchers to account for some of the differences among students in the same school and between students of different elementary, middle and high schools. Sewell and Hauser believe that such social psychological intervening variables as high school rank, perceived expectations of significant others, and educational and occupational aspirations help mediate the effects of the socio-economic origins.[4] Coleman suggests that when the socio-economic origins of students are taken into account, schools are remarkably similar in the effect they have on the achievement of their students.[5]

It is a well known fact that when a student is praised for achievement by a significant other, the student tends to respond with an increase in achievement. In terms of SES, some writers assert that middle and upper class students received positive reinforcements from

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[3] Ibid.

[4] William H. Sewell and Robert Hauser, Education, Occupation, and Earnings: Achievement in the Early Career (London: Academic Press, 1975), p. 185.

[5] Diane Ravitch, "The Meaning of the New Coleman Report ," Phi Delta Kappan, Vol. 62, No. 10 (June, 1981), p. 719.

the teacher, whereas lower SES students are not granted these rewards. The behavior of the teacher plays a significant role, then, in the academic achievement of students. According to Davis and Dollard, the lower SES student sees the upper-middle-class children being accorded preference in classroom recitations and in intimate friendship relations with the teacher. The lower SES student is systematically punished by his teacher on status grounds. He is stigmatized by teachers and their favored students. If there is no reward for learning, there is no motive for work. The lower class child soon becomes a "dummy."[6]

On the other hand, Brazziel points out that "some of the more ordinary talent is found in the offspring of some of our more affluent families and that American working-class families still produce an oversized share of our gifted children."[7] This assertion by Brazziel is intended as a refutation of the hereditary aristocracy theory, which has as one of its corrollaries that lower socio-economic students cannot compete academically with middle and upper SES students.[8] According to Jencks the most important skill developed in school is verbal fluency and it is the skill with which schools have

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[6]Allison Davis and John Dollard, as quoted in Paul Wallin and Leslie C. Waldo, Social Class Background of 8th Grade Pupils, Social Class Composition of Their Schools, Their Academic Aspirations and School Adjustments (Stanford: Sociology Department, Stanford University, 1964), p. 40.

[7]William F. Brazziel, Quality E for All Americans (Washington, D.C.: Howard University Press, 1974), p. 127.

[8]Ibid.

the most varied success. Good teachers seem to contribute more to their students' verbal ability than do bad teachers.[9] He attributes this to the tendency for able teachers to be found in the same schools with able students, because "very few school boards seem to assign teachers on a color-blind basis."[10] Davis and Dollard take the analysis to the level of social class, pointing out that the teacher is a member of the class system. She/he is rewarded by the behavior of the good student,[11] because his/her habits are evidence that she/he is a proficient teacher and through the student she/he is able to obtain the approval of his upper-middle-class or upper-class parents.[12]

There are various and sundry explanations of the determinants of student academic achievement, with the emphasis being put on the source that is convenient to a particular point of view. This study seeks to discover the determinants of student achievement and its relation to such variables as fathers' occupation, peer group academic norms, student self-concept and the school social system in general. The sample of 100 students for the study was taken from the population of one high school in Knox County and two schools in the Knoxville City School System. The data taken from these samples were analyzed to determine the relation between the variables cited above.

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[10] Ibid., p. 22.

[11] Allison Davis and John Dollard, Children of Bondage (Washington: American Council on Education, 1940), p. 282.

[12] Ibid.

I. THE PROBLEM

Statement of the Problem

The major problem that this study focused on was: Is there an association between the academic achievement of Knox County and Knoxville City School students and the general nature of socio-economic status and school social climate of the two school systems. The specific purpose of the study was to compare mean student achievement and socio-economic indicators in a selected sample of an urban population.

Variables considered in this study were: (1) racial composition of the student body, (2) median family socio-economic status of the neighborhood in which the school was located, (3) an index of father's occupational status, and (4) school social climate and social structure.

Questions Pertinent to the Study

In an effort to solve the problem, the following questions needed to be answered as they related to the schools selected therein:

1. What relationship exists between student achievement and the socio-economic and cultural characteristics of the school social system?

2. What relationship exists between students' self-concept and their academic achievement?

3. What relationships exists between father's occupation and student academic achievement?

4. What conclusions, implications, and recommendations can be advanced as a result of this study?

Importance of the Study

This investigation can be considered useful if it makes a contribution to existing knowledge concerning the social factors that produce variations in learning. The study provides a challenge for the student of educational administration to explore those social factors which produce differences among behaviors that are learned and the presumed ability to learn. If the study revealed, for example, that student achievement was significantly influenced by school inputs such as size of school, average daily attendance and professional personnel per hundred students, this finding could have implications for educational equity. The author wanted to determine which variable(s) explain a much larger share of the variance in mean achievement over and above the other variables.

If, on the other hand, the study revealed no significant associations between student achievement and such independent variables as size of school, mean family income of neighborhood in which the school is located, etc., the argument could be advanced that in those schools which are receiving a greater disproportionate share of the educational resources but whose students are not achieving at a disproportionately greater academic level are not cost effective. Therefore, the outputs do not justify the inputs.

Brookover, et al. believed that school social systems may offer a potent source of exploration for school level differences in achievement.[13] The basic theory underlying their research was that children's achievement in academic subjects is a function of the social and cultural characteristics of the school social system. The variables they identified were the socio-economic and racial composition of the student body and a set of other personnel variables, including the school size and average daily attendance, the number of professional personnel per 1,000 students, and the teachers' qualifications in terms of experience, tenure in the particular school, training and the teachers' salaries.

Constraints of the Study

The following constraints were placed upon this study:

1. The study was delimited to schools within the Knoxville City and Knox County Districts.

2. There are inherent limitations of the measuring instruments and the statistical tests used.

3. Subjects were limited to students in each school selected for the study.

4. Students in this study represented the lower, middle, and upper socio-economic strata of the Knoxville and Knox County Communities.

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[13] Brookover, op. cit., pp. 50-59.

II. DEFINITION OF TERMS

Student achievement. The status of a student with respect to attained skills or knowledge as compared with other students or with the school's adopted standards.

Education. The aggregate of all the processes by means of which a person develops abilities, attitudes, and other forms of behavior of positive value in the society in which he or she lives.

Current expenditures per student in average daily attendance (A.D.A.). All amounts spent for administration, instructional services, plant operation and maintenance, fixed charges and other school services, e.g., attendance, health service, transportation, and food service.

Socio-economic background. The background or environment indicative of both the social and economic status of an individual or group.

City school districts. A geographical area, generally coterminous with a legally established municipality, of which the population may be relatively high in number and density and which has been designated as a local school unit, often by state authority, to be governed by a local school board in terms of powers and duties delegated by the state.

Output. Change in student behavior resulting from learning.

School social climate. The composite of norms, expectations, and beliefs of the social system.

III. THE ASSUMPTIONS OF THE STUDY

The following assumptions were considered basic to this study:

1. It was possible to assess and categorize student achievement as a measure of educational output in terms of certain independent variables having an influence on student achievement.

2. The validity and reliability of the research instruments used were sufficient for the purposes of this study.

3. The sample was adequate for the purpose of this study.

4. The persons responding to the research instrument were capable and willing to express their beliefs, opinions, and feeling.

5. The sample statistics were valid and reliable estimators of the population parameters.

6. The students are better informants concerning the school social climate and its norms and expectations that are relevant to student academic behavior in the school than other participants in the social system might be.

IV. HYPOTHESES

The following statistical hypotheses set forth in this study are stated in their null forms.

1. H_0: There is no association between father's occupation and student academic achievement.

H_1: There is an association between father's occupation and student academic achievement.

2. H_0: There is no association between school social structure and student achievement.

H_1: There is an association between school social structure and student achievement.

3. H_0: Predominantly Black schools do not differ from White schools with respect to school social structure.

H_1: Predominantly Black schools do differ from White schools with respect to school social structure.

4. H_0: There is no association between student self-concept and academic ability.

H_1: There is an association between student self-concept and academic ability.

5. H_0: There is no association between racial composition of the student body and student achievement.

H_1: There is an association between racial composition of the student body and student achievement.

6. H_0: There is no association between the percentage of Black students in the student body and father's occupation.

H_1: There is an association between the percentage of Black students in the student body and father's occupation.

7. H_0: There is no association between academic futility and father's occupation.

H_1: There is an association between student's sense of academic futility and father's occupation.

8. H_0: There is no association between student academic achievement and size of the student body.

H_1: There is an association between student academic achievement and size of the student body.

V. DESIGN OF THE STUDY

In the 1980 a total of fifty-six schools existed in the Knoxville City School System.[14] A total of forty-five schools existed in the Knox County School System.[15] Average daily attendance (A.D.A.) for the period ending 06-05-81 was 24,370 for the Knoxville City Schools.[16] The Fall 1980 grand total for Knox County Schools was 28,061 students.[17] The A.D.A. figures for Knoxville City Schools were somewhat misleading, for their grand total enrollment for the above period was 30,697 students, including 24,290 Whites and 6,407 Non-whites. Knox County Schools' grand total was composed of 27,423 Whites and 638 Non-whites.[18] The latter figure includes 9 Indians, 134 Asians, 29 Hispanics, and 46 Blacks.[19]

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[14]Pupil Personnel Department Monthly Attendance Report Period Ending 06-05-81. Knoxville City Schools, Knoxville, Tennessee, p. 1.

[15]Fall 1980 Elementary and Secondary School Civil Rights Survey, Individual School Report: Form AS/CR 102 and School System Summary Report: Form AS/CR 101, Knox County Schools, Knoxville, Tennessee, p. 1.

[16]Knoxville City Schools, op. cit., p. 1.

[17]Knox County Schools, op. cit., p. 1.

[18]Knoxville City Schools, op. cit., p. 1.

[19]Knox County Schools, op. cit., p. 1.

This study focused on Senior High school students in the Knox County and Knoxville City Schools. The total student population for the study included 8,970 Senior High school students in the Knoxville City School District. The 9,185 total high school students made up the Knox County School population in this study.

For this study the total White school population was 9,063 in Knox County and 7,042 in Knoxville City Schools. The Non-white high school population was 1,928 in Knoxville City Schools and 122 in Knox County Schools. The Knoxville City Schools selected for the sample included: School A, which has a total student population of 798, of which 780 are Non-white and 18 are White and School B, which has a total student population of 766, of which 336 are Non-white and 430 are White. The Knox County School selected for the study sample was: School C, which has a total student population of 2,309, of which 2,250 are White and 38 are Black.

The school population for this study included all fifty-six schools within the Knoxville City School District and the forty-five schools within the Knox County School System. A more detailed statement of the actual selection of sample schools is included in Chapter III.

School A is located in a neighborhood in which the mean family income is $8,305.33 and mean education is 11.5 years of school. The percentage of the neighborhood residents living in poverty is 24.4.[20]

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[20] Knoxville/Knox County Metropolitan Planning Commission, Poverty. (Knoxville, 1976), pp. 63-70.

School B is located in a neighborhood in which the mean family income is $6,278. The median educational level is 9.14 years. The percentage of Blacks in the Neighborhood is 40.3. The percentage of persons living in poverty in that neighborhood is 37.8.[21]

School C is located in a neighborhood in which the mean income is $14,901.25. The median educational level is 12.7 years. The percentage of Black residents in that neighborhood is 1.8, while 5.7 percent of the residents of that neighborhood are poverty stricken.[22]

School Social Climate Questionnaire

Participation in the study involved the completion of a revision of the SSCQ (See Appendix A) by the students in the selected schools. Certain biographic, geographic, and socio-economic data were also obtained in the administration of the SSCQ. It appears that the SSCQ has been the most popular and widely used technique for measuring the social climate of schools. Brookover, et al., found that the climate variables of the SSCQ did distinguish between low and high achieving schools with similar composition, demonstrating the predictive validity of climate variables and justifying further study of the contribution of school normative climate to student achievement.[23]

Major areas of interest in American education would include student achievement, student self-concept of academic ability, and

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[21] Ibid.

[22] Ibid.

[23] Brookover, op. cit., p. 20.

student self-reliance. These three outcome variables were examined using the SSCQ. Brookover demonstrated that although individual students' perceptions may vary within a school society, significant between-school variance also exists in most of the climate variables.[24] The school social climate variables examined by the SSCQ are as follows:

Student Climate

1. Sense of academic futility
2. Future evaluation and expectation
3. Perceived present evaluation and expectations
4. Perception of teacher push norms
5. Academic norms

Brookover and Erickson mentioned that there are many different ways to measure school climate, such as socio-economic status, race, student personality, and characteristics of school organization, but their conception of school academic climate has been expressed as follows:

> The school social climate encourages a composite of variables as defined and perceived by the members of this group. These factors may be broadly conceived as the norms of the social system and expectations held for various members as perceived by the members of the group and communicated to members of the group.[25]

The items in the SSCQ consist of a set of questions and statements and the respondent is asked to indicate to what extent the

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[24] Ibid., p. 21.

[25] Ibid., p. 19.

behavior described by each question or statement characterizes his or her school. The examples below illustrate the flavor of the items:

1. People like me will never do well in school even though we try hard.

2. You have to be lucky to get good grades in this school.

3. I can do well in school if I work hard.

4. In this school, students like me do not have any luck.

The scale used for each response was defined by five categories, e.g.: (1) Strongly agree, (2) Agree, (3) Not sure, (4) Disagree, and (5) Strongly disagree.[26]

The study by Bookover, et al., which produced the SSCQ rejects the conclusion that schools do not and (or) cannot make a difference in student achievement outcomes. As such, it was undertaken to examine the influence of socio-psychological characteristics of the school social system on the student learning outcomes in school.[27]

The independent variables consisted of: (1) input, (2) social structure, and (3) school climate. The dependent variables consisted of: (1) mean school achievement, (2) mean student self-concept of academic ability, and (3) mean student self-reliance.

Input Variables

The input variables consisted of the social composition of the student body and other personnel inputs into the social system. The

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[26] Ibid., p. 154, 174, and 181.

[27] Ibid., p. 135.

social composition of the student body is indicated by the mean socioeconomic status of the school and the racial makeup of the student body.

School Climate Variables

These variables include the schools' academic norms, expectations, and beliefs as defined and perceived by the students who make up the relevant school social system. These are naturally influenced by peer groupings and other significant interactions.

Mean School Achievement

As stated earlier, the measure of academic achievement is the average of the percentage of students mastering each of the four sections in the Tennessee School Proficiency Test.

Information About The Test

The Tennessee State Basic Skills Test, also referred to as the Tennessee State Proficiency Test, was administered to both Knoxville City and Knox County school students in March, 1981. All 9th, 10th, and 11th graders were responsible for passing the four sections of the test. These sections were Math, Spelling, Language and Reading. In order to obtain a passing score on the test each student needed to score a minimum of 70 points. The highest possible score was 100.

The components of the test are as follows:

Math	focused on the academic areas of four basic operations including fractions, decimals, percents, measurement and metric skills.
Spelling	included basic phonic skills of vowels, consonants, etc., in addition to choosing incorrectly spelled words, synonyms, homonyms, and figurative language for 11th graders.
Language	consisted of areas of subject/verb agreement, capitalization, parts of speech, double negatives and recognizing complete sentences.
Reading	entailed reading a passage of approximately 100 words or less and answering questions pertaining to the main idea, words in context, choosing the best title and predicting outcomes.

It has been proposed that those students who pass all sections of the test receive special recognition on their diplomas. Incidentally, the test is geared toward the 6th grade proficiency level of academic achievement.

Self-Concept of Academic Ability

The self-concept of academic ability focuses specifically on the students' perceptions of themselves as students. No attempt is made to measure a wide variety of self-concepts. Rather, the items measure the self-concept of the students' conceptions of themselves as students in comparison with other classmates and students whom they know.

Student Self-Reliance

These items are designed to determine the extent to which students are able to and desire to carry on activities by themselves and to solve problems on their own rather than have someone else help them.

Method of Obtaining Data

After the sample schools were determined by drawing a selected sample of Knoxville City and County schools, the researcher made arrangements by telephone with the central office of the districts and the principal of each school for a personal visit to further explain the study and to distribute copies of the SSCQ. From this instrument came much of the data to be used in the study. The school social climate and student achievement data were obtained by administering the SSCQ.

Sources of Data

The data were obtained from the following sources:

1. Administration of SSCQ to students,
2. Knoxville City Schools Pupil Personnel Department,
3. Knox County Schools Personnel Department,
4. Knoxville Metropolitan Planning Commission, and
5. Students' scores on the Tennessee State Basic Skills Test.

Organization of the Study

Chapter I contains the introduction to the study, statement of the problem, questions pertinent to the study, importance of the study, constraints of the study, definition of appropriate terms, basic assumptions, hypotheses tested, design of the study, and a brief outline of the organization of the study.

Chapter II reviews the literature pertinent to the problem.

Chapter III contains a detailed outline of the research design and methodology.

Chapter IV presents and analyzes the data.

Chapter V presents the summary, findings, conclusions, implications, and recommendations derived from the study.

CHAPTER II

REVIEW OF THE LITERATURE

I. INTRODUCTION

According to Aristotle education is important in the

> . . . Formation of character; not knowledge for its own sake or the art of making money and getting on in life, but the creation of law-abiding citizens who w4uld listen to reason and conduct themselves well.[28]

In the United States the school was created as a distinctively local institution to meet local needs. In the original Federal Constitution, there was no mention of any form of education for the people, neither did the subject occur in the debates of the Federal Constitutional Convention. By 1800, six of the fourteen state constitutions made no mention of schools or education, leaving the responsibility of formal instruction in the hands of a few private and religious institutions.[29] One must conclude, therefore, that education in the early years of the development of the United States was an endeavor of the people in the communities which housed the schools. So, it was only natural for the school district to have become the unit for educational organization.[30] The school board, itself, consisted of a few farmers

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[28]Thomas Marshall, M.A., Aristotle's Theory of Conduct (London: T. Fisher UNWIN I Adelphi Terrace. MCMVI) (December, 1905), p. 575.

[29]Ellwood P. Cubberly, Public School Administration (New York: Houghton Mifflin Company, 1916), p. 3.

[30]Ibid., pp. 4 and 5.

and merchants who were quite capable of handling the rather simplistically easy matters of their schools. But those days are gone now, and with them those easy problems of school management. Today public secondary education and the academic achievement of our students have become two of the major problems facing the United States at the present time. A review of the literature would provide ample proof of the importance of education to the economic, social, and political progress of a nation. Lee DuBridge expressed it very aptly when he stated that:

> A technologically advanced nation requires an educated body of citizens. When every man on the street is concerned about nuclear war, fallout, about automation, or space: when every family has possession of dozens of modern technology, ranging from an automobile to a television set, automatic toaster, an electric clock; when every citizen must vote for candidates for public office, who in turn must make decisions on matters of national defense, atomic power, space exploration, the regulation of industry, communication, and transport, it is clear that an educated citizenry is an essential national requirement.[31]

Many more writers have addressed themselves to the role of education in the advancement of society in general and American society in particular. Space does not allow for the inclusion of even a sample of all of their theoretical assumptions here. The earliest research on student socio-economic status dates back to 1941 when August B. Hollingshead studied "Elmtown," a community in the Midwest, the members of which accused Hollingshead and his wife of being sent there to collect

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[31]Lee DuBridge, Education is Good Business, as quoted by Percy E. Burrup, Financing Education in a Climate of Change (Boston: Allyn and Bacon,. Inc., 1977), p. 21.

information for "our government."[32] Hollingshead's findings indicated "that students from upper-status homes received preferential treatment"[33] in the educational system within the "Elmtown" school district.

Coleman's now famous studies raised the question as to whether or not there exists equality of educational opportunity. Since the beginning of public schools in the United States, equality of opportunity has meant many things. Among these Coleman lists:

> 1. Providing a "free education" up to a given level which constituted the principal entry point to the labor force.
> 2. Providing a "common curriculum" for all children, regardless of background.
> 3. Partly by design and partly because of low population density, providing that children from diverse backgrounds attend the "same school."
> 4. Providing equality within a given "locality," since local taxes provided the sources of support for schools.[34]

One of the most important assumptions which escapes the above conceptions of equal educational opportunity is that opportunity must be ascertained as to whether or not a student is exposed to a particular curriculum. The assertion implied is that there is a very high association between opportunity and level of curriculum.[35]

Educational production function studies usually include statistical analyses which relate observed student outcomes to characteristics

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[32] August B. Hollingshead, Elmtown's Youth and Elmtown Revisited (New York: John Wiley & Sons, Inc., 1949, 1975), p. 12.

[33] Ibid.

[34] James S. Coleman, "Responsibility of the Schools: A Sociologist's Perspective," in Charles A. Tesconic, Jr. and Emanuel Hurwitz, Jr., Education for Whom? (New York: Dodd, Mead and Company, 1974), p. 100.

[35] Ibid., p. 101.

of the students, their families, other students in the school, as well as characteristics of schools.[36] Educational production input analysis is, in the main, influenced by data availability rather than an underlying conceptual model. An example of a model that is generally accepted is the following:

Eq. 2.1

$A_{it} = f(B_i(t), P_i(t), S_i(t), I_i)$,

where

A_{it} = educational achievement of the ith student at time t,

$B_i(t)$ = vector of family background influences cumulative to time t,

$P_i(t)$ = vector of influences or peers cumulative to time t,

$S_i(t)$ = vector of school inputs cumulative to time t,

I_i = vector of initial endowments of ith student.[37]

This equation states that the achievement of an individual (ith) student at time t, A_{it} is some function f of his characteristics, of his peers $P_i(t)$, of his initial endowments or innate abilities I_i, and of the quality of educational inputs throughout the student's lifetime $S_i(t)$.[38]

From the perspective of educational management, the above conceptual model is most useful when emphasis is put on the confluence

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[36] Eric A. Hanushek, "Concept and Empirical Issues in the Estimation of Educational Production Functions," The Journal of Human Resources, XIV (Summer, 1979), p. 354.

[37] Ibid.

[38] Ibid., p. 17.

of differ inputs to education. The model says nothing of the kinds of interactions which occur among the vectors or about certain associations such as better schools existing in higher-income neighborhoods. Associations of these kinds are produced through further specification of the concept model.[39] A model such as the one just discussed is useful if education is analyzed in terms of a production process in which the allocation of educational resources (inputs) occurs within the context of an economic distributional system which aims at an efficient level of operation.

II. STUDENT ACHIEVEMENT AND SOCIO-ECONOMIC STATUS

Warner made the observation that in many school districts achievement and intelligence tests are used as a method of grouping students according to ability. He states that these tests tend to favor middle and upper socio-economic status children because the test items are taken from middle class life.[40] In order to succeed on these tests, the students must come from "family backgrounds that encourage reading, traveling, talking, museum visiting, and so on."[41]

Jencks points out that the way a family brings up its children is influenced by its SES.[42] If the children are not brought up with

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[39] Ibid., p. 17.

[40] W. Loyd Warner, et al., Who Shall Be Educated? (New York: Harper and Brothers Publishers, 1944), p. 81.

[41] Ibid.

[42] Christopher Jencks, Inequality (New York: Basic Books, Inc., 1972), p. 78.

at least a "vicarious familiarity with middle-class life and culture," they are not likely to succeed on the typical intelligence and achievement tests.[43] Although some attempts have been made to construct culture fair tests, the same differences that exist between rich and poor children on culturally biased tests have been observed in culture fair tests. Many attempts have been made to explain this phenomenon. Some scholars argue that this phenomenon reflects genetic differences between rich and poor children. The argument is made that if economically successful parents have more than their share of favorable genes, their children will also have more than their share of such genes.[44] This argument is based on the consensus among certain researchers that test scores have some genetic determinants, that social mobility exists in the United States, and that test scores influence a student's potential for upward mobility. It is at this point that the connection is usually made between being rich and smart--between being poor and retarded. Most correlations between father's occupation and test scores yield coefficients between .20 and .40.[45]

Conversely, there are studies which demonstrate moderately high multiple correlations between father's occupation and reading comprehension (.53) and arithmetic computation (.50).[46] These correlations

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[43] Ibid., p. 79.

[44] Ibid.

[45] Ibid., p. 323.

[46] John B. Fotheringham and Dorothy Creal, "Family Socio-economic and Educational-Emotional Characteristics as Predictors of School Achievement," The Journal of Educational Research, Vol. 73, No. 6 (July/August, 1980), p. 312.

have led certain researchers to conclude that "the major influences on the differences in academic achievement among children is the family."[47] According to Jencks, if the United States government suddenly created a system in which new members of the upper-middle class were selected wholely on the basis of test scores, one upper-middle class child in three would be able to maintain his or her parents' occupational attainments and economic privileges. He derived this estimate from the following assumptions: (1) the top fifth of the occupational hierarchy's children averages 1.4 standard deviations above the mean; (2) the correlation between the father's occupation and student achievement is 0.32; (3) the children of the top fifth therefore average (1.4) (0.32) = 0.45 standard deviations above the mean on tests; (4) the cutting point for the top fifth is 0.85 standard deviations above the mean; and (5) the standard deviation of the scores of the top fifth is: $1 - 0.32^2$ = 95 percent of the overall standard deviation.[48] this elaboration by Jencks was intended to give credence to his assertion that if the high socio-economic status class wanted to pass along its privileges to its children, establishing a system in which privilege depended on a test score would not be a wise move.[49]

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[47] Ibid., p. 316.

[48] Jencks, op. cit., p. 118.

[49] Ibid., p. 81.

Coleman found evidence that family background accounted for a large portion of the variance in students' academic achievement.[50] This led him to conclude that "schools bring little influence to bear on a child's achievement that is independent of his background and general social context."[51] Bowles and Levin assert that Colemen's research design was overwhelmingly biased in a direction that would damper the importance of school characteristics.[52] Employing a multiple regression analysis, Brookover found that mean SES composition adds little to the explained variance in student academic achievement after the effect of climate variables has been controlled.[53]

III. SCHOOL SOCIAL STRUCTURE AND STUDENT ACADEMIC ACHIEVEMENT

Coleman's study found that per pupil expenditures, books in the library and a number of other facilities and curricular measures show very little relation to achievement if the social background and attitudes of individual students and their schoolmates are held constant.[54] Coleman also found that the effect of a student's peers on his or her own achievement level is more important than any other

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[50] James S. Coleman, et al., Equality of Educational Opportunity, (Washington: U. S. Office of Education, 1966), p. 325.

[51] Ibid.

[52] Samuel Bowles and Henry M. Levin, "The Determinants of Scholastic Achievement--An Appraisal of Some Recent Evidence," The Journal of Human Resources, Vol. 3, No. 1 (Winter, 1968), pp. 4-8.

[54] Coleman, op. cit., p. 325.

school influence.[55] The study went even further to say that the school social structure is more highly related to academic achievement, independently of the student's own social background, than is any school factor.[56]

Coleman derived his findings on the influence of fellow students from a set of regressions which showed that after controlling for the student's background and attitude, the curriculum, facilities, and staff characteristics of the school, the characteristics of the school social structure accounted for a significant increase in the proportion of variance in achievement that was explained. In general, student academic achievement and social class are highly correlated with the social characteristics and achievement levels of the student's classmates. Subsequent to combining the five structure variables in his study by standard scores Brookover found that the relationship between school social structure and student academic achievement in his sample was .447 in the representative state sample.[57] Conversely, the correlation between school social structure and mean school achievement in the White school sample was only .068.[58]

The school social structure is a composite of other variables that collectively characterize the school social system. These

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[55] Ibid.

[56] Ibid.

[57] Ibid.

[58] Ibid., p. 49.

variables were identified by Brookover and they are as follows: (1) the socio-economic status and racial composition of the student body; (2) the extent to which students are permitted to move about and vary their locations in the classroom social structure; (3) the students' perception of their ability to function successfully in the system; (4) their perceptions of others' expectations and evaluations of them; and (5) the norms of the school social system.[59] Brookover found that more than 85 percent of the between-school variance in mean reading and math achievement in the representative state sample of schools in his study was explained by the above combination of social system variables. It explained nearly 90 percent of the variance in achievement of majority Black schools. Somewhat less of the variance in student academic achievement among the White schools was explained by the combination of social system variables, but 66 percent of the variance in achievement between schools with predominantly White students was explained by the same combination of social system variables.[60]

Smith and Sanders found in their research that classroom social structure had a direct effect on student achievement in science.[61] Brookover concluded that the school social structure serves as a direct casual link in the productions of achievement behavior in reading and

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[59] Ibid., pp. 137-138.

[60] Ibid., p. 139.

[61] Lyle R. Smith and Kay Sanders, "The Effects on Students' Achievement and Student Perception of Varying Structure in Social Studies Content." The Journal of E Research, Vol. 74, No. 5 (May/June, 1981), p. 333.

mathematics.[62] His analysis of the social structure variables in his study demonstrated that students' perceptions of others' evaluations and expectations of them explained most of the between-school variance in mean self-concept of academic ability. In most studies which investigated the influence of school social structure on student academic achievement, students' self-concept is not very highly associated with actual scores on tests that measure academic ability.

Brookover discovered essentially no correlation between mean self-concept and mean academic ability among the schools in his subsamples except for a slight negative relationship in the low SES White school sample. This led him to conclude that any positive relationship between students' self-concept of academic ability and school achievement is an in-school phenomenon.[63]

Reck, in her study of Appalachian school children postulated that the school constituted a specific social setting that influences development of an individual's self-concept and that the self-concept that the students carry to the school significantly effects how they function academically in school.[64]

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[62] Brookover, op. cit., p. 142.

[63] Ibid., p. 145.

[64] Una Mae Lange Reck, "Self-Concept, School, and Social Setting: A comparison of Rural Appalachian and Urban Non-Appalachian Six Graders," The Journal of Educational Research, Vol 74, No. 1, (September/October, 1980), p. 50.

Her investigation indicated that the rural Appalachian sample expressed a significantly less positive self-concept than did the sample of urban students. Reck's finding of no significant relationship between self-concept and academic achievement and socio-economic status led her to conclude that the differences that she did find were due to the different social settings from which the two samples were drawn.[65]

The influence of self-concept on student achievement has been a concern of many researchers. Reitzes and Mutran[66] and Johnson[67] investigated the relationship between students' self-concept and academic performance in separate studies. Simpson's paper examined the impact of classroom structure on the self conception of academic ability.[68] Research conducted by Moreland, Miller, and Laucka[69]

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[65] Ibid., p. 51.

[66] Donald C. Reitzes and Elizabeth Mutran, "Significant Others and Self Conceptions: Factors Influencing Educational Expectations and Academic Performance," Sociology of Education, Vol 53, No. 1 (January, 1980), p. 21.

[67] Dona S. Johnson, "Naturally Acquired Learned Helplessness: The Relationship of School Failure to Achievement Behavior, Attributions, and Self-Concept," The Journal of Educational Psychology, Vol. 73, No. 2 (April, 1981), p. 175.

[68] Carl Simpson, "Classroom Structure and the Organization of Ability," Sociology of Education, Vol. 54, No. 2 (April, 1981), p. 120.

[69] Richard Moreland, John Miller, and Frances Laucka, "Academic Achievement and Self-Evaluation of Academic Performance." The Journal of Educational Psychology, Vol. 73, No. 3 (June, 1981), p. 335.

focused on academic achievement and how it is influenced by SES and self-concept of academic performance. The debate between Winnie and Walsh[70] on one side and Gauthier and Yarworth[71] on the other side of the issue yielded some very stimulating discussion and potential for research in the are of self-concept and school structure as related to sociological status.

IV. SOCIO-ECONOMIC STATUS (SES) AND EDUCATIONAL OPPORTUNITY

According to Innes, education in a society such as the United States is governed by principles of selectivity. A minority of students are selected for intensive "academic" instruction which prepares them for the upper echelons of the occupational hierarchy, while the majority are instructed in elementary knowledge and practical skills in less well-equipped institutions. This selective process is at work from the first days of the students' careers. These two types of schooling prepare youth for entry into two very different labor markets--manual and nonmanual. Innes conceptualized schools in the United States as playing significant roles in shaping the expectations of the

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[70]Philip H. Winne and John Walsh, "Self-Concept and Participation in School Activities Reanalyzed," The Journal of Educational Psychology, Vol. 72, No. 2 (April, 1980), p. 161.

[71]William J. Gauthier, Jr. and Joseph Yarworth, "Conceptual and Methodological Considerations in Self-Concept and Participation in School Activities Reanalyzed," The Journal of Educational Psychology, Vol. 72, No. 2 (April, 1980), p. 167.

"subordinate class" in keeping with their position in the social hierarchy.[72]

Innes drew the conclusion that schools in the United States not only channel students into "appropriate" routes, but they also instill "suitable" levels of aspirations, expectations, and self-concept. He made the observation that the traditional democratic ideology of the public school, with the same curriculum offered to all children was overtaken by the "progressive" insistence that education should be tailored to suit the needs of "particular children." This led him to conclude that low SES students are channeled into vocational programs on the pretext of providing an education that will be relevant to the adult life of these students, while an academic curriculum is preserved for those destined for the nonmanual class. Accordingly, "objective" educational testing and counseling also play their part in this structure.[73]

Giddens made the observation that lower SES families are larger in average size than those of middle and upper SES families, and the amount of direct parental contact is lower--a phenomenon which, in so far as it influences the verbal facility of students in such families, may have lasting effects upon academic achievement. He stated that

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[72]Max Innes, "The Objective and Subjective Components of Class in Relation to Schooling in Industrial Societies: The Contribution of Giddens and Parkin," Educational Theory, Vol. 29, No. 4 (Fall, 1979), p. 307.

[73]Ibid., p. 308.

parental attitudes toward academic achievement among low SES families tends to be unfavorable. Regarding the schools, Giddens pointed out that poor equipment and poor facilities in the underprivileged areas are associated with badly qualified teaching staffs and an educational environment in which problems of control assume precedence over student academics as such.[74]

Does the public school exist for the purpose of stimulating academic achievement in order to facilitate occupational opportunity and upward mobility for all students? Kozol answered this question in the negative by quoting from one who represented the high class (SES) position holders--namely Horace Mann, who made the argument for public schools as agents of indoctrination and SES stratification in straightforward terms:

> Finally, in regard to those who possess the largest shares in the stock of worldly goods, could there, in your opinion, be any police so vigilant and effective, for the protection of all the rights of persons, property and character, as such a sound and comprehensive education and training as our system of common schools could be made to impart. . . . Would not the payment of a sufficient tax to make such training universal, be the cheapest means of self-protection and insurance.[75]

Bowles and Gintis observed that the schools themselves do not add to or subtract from the overall degree of socio-economic inequality. Rather, they are institutions which serve to perpetuate the social relationships of economic life through which these patterns are set, by

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[74]Anthony Giddens, The Class Structure of the Advanced Societies, (New York: Harper & Row Publishers, 1975), pp. 184-185.

[75]Jonanthan Kozol, The Night is Dark and I am Far From Home, (Boston: Houghton Mifflin Company, 1975), p. 3.

facilitating a smooth integration of youth into the labor force. According to Bowles and Gintis, this role takes a variety of forms. First, schools foster legitimate inequality through the ostensibly meritocratic manner by which they reward and promote students, and allocate them to distinct positions in the occupational hierarchy. Secondly, the schools create and reinforce patterns of SES and racial identification among students which allow them to relate "properly" to their eventual standing in the hierarchy of authority and status in the production process. The third role that Bowles and Gintis attribute to the schools is that of fostering types of personal development compatible with the relationships of dominance and subordinacy in the economic sphere. They create surpluses of skilled labor sufficiently extensive to render effective the prime weapon of the employer in disciplining labor--the power to hire and fire.[76]

V. THE SOCIO-ECONOMIC STATUS AND ACADEMIC ACHIEVEMENT OF BLACK STUDENTS

The touchy issues of whether Whites are more "intelligent" than Blacks or whether upper SES students are more "intelligent" than lower SES students could be a priori regarded as pseudo-problems, because the answers could logically be derived from the way the problems are posed. Almost throughout, achievement tests measure verbal ability or the

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[76]Samuel Bowles and Herbert Gintis, Schooling in Capitalist America, (New York: Basic Books, Inc., Publishers, 1976), p. 11.

ability to deal with various kinds of abstractions.[77] They are almost always validated against criteria of school achievement, such as teacher ratings, grades and examinations.[78] All these criteria are derived from certain either generally accepted and/or dominant values. Academic achievement is defined by the dominant socio-cultural reference system. Moreover, in the value structure guiding the system, overriding priority has been attached to the ability to achieve academically. Therefore one should not be surprised to find that high SES students have higher scores on achievement tests than low SES students or that Whites perform better than Blacks.[79]

Jensen quoted Duncan's 1968 study on socio-economic background and occupational status where it is stated that:

> "Intelligence" is a socially defined quality. . . . Had the first IQ tests had been devised in a hunting culture, "general intelligence" might well have turned out to involve visual acuity and running speed, rather than vocabulary and symbol manipulation.[80]

Jensen went on to state that the "predominant importance of intelligence is derived, not from any absolute criteria or God-given consideration , but

from social demands."[81]

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[77]Torstlen Husen, Social Influences on Educational Attainment, (Paris: Organization for Economic Co-operation and Development, 1975), p. 69.

[78]Ibid.

[79]Ibid.

[80]Arthur R. Jensen, "How Can We Boost IQ and Scholastic Achievement?" Harvard Educational Review, Vol. 39, No. 1 (Winter, 1969), p. 14.

[81]Ibid.

Concerning the problem of Black and White differences in student academic achievement, Jensen made the following statement:

> There is an increasing realization among students of the psychology of the disadvantaged that the discrepancy in their average performance (i.e., Blacks as compared to White population) cannot be completely or directly attributed to discrimination or inequalities in education. It seems not unreasonable in view of the fact that intelligence variation has a large genetic component, to hypothesize that genetic factors may play a part in this picture.[82]

Existing surveys of IQ distribution show fairly consistently that Blacks score on the average, one SD below Whites on most intelligence tests. If correction is made for SES, the difference is reduced from 15 to 11 IQ points.[83]

The logic advanced in proving that racial differences in student academic achievement have a large genetic component could also be employed in analyzing social class differences because upper and middle SES students score higher than lower SES students on academic achievement tests. The difference usually amounts to 10 to 15 points.[84] Most contemporary educational researchers and social investigators no longer adhere to a simplistic environmental determinism, just as contemporary biologists no longer embrace a genetic determinism. In both fields there is an increasing recognition of the importance of an interaction between the organism and the environment.

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[82] Ibid.

[83] Husen, op. cit., p. 70.

[84] Ibid.

Anastasi did not agree with people who maintained that interest in the heredity-environment issue had faded away. According to her, the traditional questions about heredity and environment may be intrinsically unanswerable. The questions "Which one?" and "How much?" need to be replaced by the more basic and appropriate question, "How?"[85] The task that lay ahead for research was, she envisioned, to explore the modus operandi of genetic and environmental factors. The traditional way of conceiving the operation of the two sets of factors has been to regard them as acting in an additive way. But geneticists, as well as others, have pointed out that such a model is untenable. The two sets of factors interact along a continum of directness. A most obvious example is the effects of discrimination against members of a social class or race of people in terms of opportunities for academic achievement. In the long run this will lead to group differences which are correlated with genetic background without necessarily being casually affected by them.

Anastasi further stated that heredity may influence behavior, such as academic achievement, through the mechanism of social stereotypes. A wide variety of inherited physical characteristics have served as the visible cues for identifying such stereotypes. These cues thus lead to behavioral restrictions of opportunities and--at a more sub level--to social attitudes and expectancies. The individual's own self-concept tends gradually to reflect such expectancies. All of these

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[85]Anne Anastasi, "Heredity, Environment, and the Question 'How'," Psychological Review, Vol. 65, No. 4, (1958), p. 197.

influences eventually leave their mark upon one's abilities and inabilities, one's emotional reactions, goals, ambitions, and outlook on life.[86]

Anastasi quoted the geneticist Dobzhansky who illustrated this type of mechanism by means of a dramatic hypothetical situation. He pointed out that, if there were a culture in which the carriers of blood group AB were considered aristocrats and those of blood group O laborers, then the blood group genes would become important hereditary determinants of behavior. The association between blood group and behavior would be specific to that culture. Such specificity is an essential property of the casual mechanism under consideration.[87]

Bowles and Gintis raised the question of whether the fact that a large component of the differences in IQ among Whites is genetic can be interpreted as meaning that a similar component of the differences in IQ between Blacks and Whites is determined by the former's inferior gene pool. They answered their own question in the negative. According to Bowles, the degree of heretability is an "average," even among Whites. For any two individuals and a fortiori, any two groups of individuals, observed IQ differences may be due to any proportion in genes and environment—it is required that they average properly over the entire population. As an example they pointed out that all of the differences in IQ between identical twins are environmental, and

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[86] Ibid., p. 198.

[87] Ibid.

presumably a great deal of the differences between adopted brothers is genetic. Similarly, they pointed out that one cannot say whether the average differences in IQ between Irish and Puerto Ricans is genetic or environmental. In the case of Blacks, however, the genetic school's "inferiority" influence is even more tenuous.[88]

Bowles and Gintis asserted that even accepting Jensen's estimates of the heritability of IQ, the Black/White academic achievement difference could easily be explained by the average environmental differences between the races.[89] Recourse to further experimental investigation will not resolve this issue, for the "conceptual experiment" which would determine the genetic component of Black/White differences in academic achievement cannot be performed. Could one take a pair of Black identical twins and place them in random environments? Clearly not. Placing a Black student in a White home, in an overtly racist society, will not provide the same environment as placing a White student in that house. Similarly, looking at the differences in IQ's of unrelated Black and White students raised in the same home (whether Black, White or mixed) will not tell one the extent of genetic differences since such children cannot be treated equally, and environmental differences must continue to exist.[90]

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[88] Bowles and Gintis, op. cit., p. 317.

[89] Ibid.

[90] Ibid., p. 318.

CHAPTER III

DESIGN AND METHODOLOGY

I. INTRODUCTION

This chapter describes procedures utilized to investigate the relationship between student achievement and certain school social climate variables in a sample of schools within two school districts. This chapter consists of a discussion of the population and sample of schools from which the data were collected, the various arrangements and methods for visiting the schools and administering the questionnaires, the scoring procedures which were followed, and the methods of statistical analysis employed in the study.

III. THE POPULATION AND SAMPLE

The population which this study was concerned consisted of the fifty-six schools within the Knoxville City School District and the forty-five schools within the Knox County School System. From this population a selected sample of three schools was drawn. The schools were selected on the basis of the percent of Black students in student body and socio-economic status of the neighborhoods in which the three schools were located. The racial description of schools and the socio-economic status of the neighborhood which housed the schools were outlined in Chapter I.

Initial contact letters (see Appendix C and D) were then mailed to the Knoxville City and County superintendents and principals of the

three randomly schools selected on March 20, 1981. In the letters the author briefly explained the purpose of the study and other pertinent information to the superintendent and the principals, requested their participation in the study, and informed them that they would be contacted by the telephone within two weeks to formally seek their cooperation and to schedule a time for school site visitation.

In reporting the findings of this study, schools are identified by a code number which was randomly assigned to the schools.

III. DATA GATHERING PROCEDURES

Approximately nine days after the initial contact letters were mailed to the superintendents and principals were contacted by telephone for the purpose of further explaining the study, and if the superintendents and principals agreed, time was arranged to personally visit the schools.

The principals of the three schools were visited between April 1-15, 1981. The purpose of the visit was to explain the study in more detail and to seek the cooperation of the principals and teachers. Because of the high level of interest of the principals and teachers in the nature and possible results of the present study, their cooperation was generously offered to the researcher.

IV. THE INSTRUMENT AND SCORING PROCEDURES

The primary instrument used in this study was a revised version of the School Social Climate Questionnaire (SSCQ) which was completed by

students of the participating schools. The first two pages of the SSCQ asked for certain biographical data which was collected from each respondent. Among the criteria established for selecting the SSCQ was that the questionnaire for the study must be self-administering, easily understood by the respondents, of reasonable length, yet designed to provide significant data for the study, and adaptable to the Knox County and City School Systems.

Permission to use the SSCQ was sought by the researcher. A copy of the letter from J. F. Bergin Publishers, Incorporated granting permission to use the SSCQ appears in Appendix D.

The School Social Climate Questionnaire

The students' SSCQ consisted of seventy-two Likert-type statements which, when administered to students yields a description of the school social climate. The questionnaire, self-administering and requiring about thirty minutes to complete gives a measure of the school climate variables. Since school social climate is the composite of beliefs, expectations, and norms which characterize the school social system as perceived by members of the social system, the questionnaire was administered to those social systems members in order to obtain their perceptions of their school social system's characteristics.[91]

The present study used a revised version of the SSCQ because the original was constructed for use by elementary school teachers, students and principals. The present study focused only on senior high school

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[91]Brookover, et al., op. cit., p. 19.

students. The student SSCQ was designed to measure students' perceived expectations and evaluations, school norms, students' sense of control, and perception of teachers' academic norms.[92] The revised version of the SSCQ may be found in Appendix A.

IV. SOCIO-ECONOMIC DATA

Socio-economic data on the neighborhoods in which the sample schools were located were obtained from a report published by the Knoxville/Knox County Community Action Committee, made available to the researcher by the Knoxville/Knox County Metropolitan Planning Commission.[93]

Question number eight on the SSCQ was designed to ascertain the occupations of the students' fathers.[94] These occupations were then taken to Duncan's Index of Occupational Status in order for each occupation reported on the SSCQ to be given a numerical value.[95] The numerical value representing fathers' occupations were correlated with the students' scores on the Tennessee State Basic Skills Test, both of which can be classified as nominal and interval level data,

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[92] Ibid., p. 20.

[93] Knoxville/Knox County Metropolitan Planning Commission, op. cit., p. 27.

[94] Brookover, et al., op. cit., p. 150.

[95] Peter M. Blau and Otis Dudley Duncan, The American Occupational Structure (New York: John Wiley & Sons, Inc., 1967), pp. 122-123.

respectively. The appropriate statistical measure for that data is the analysis of variance.[96]

Biographical Information

Biographical data were obtained from each respondent in the participating schools at the time of completing the SSCQ. The biographical section of the student SSCQ asked for eight kinds of information: (1) respondent's name, (2) age of last birthday, (3) sex, (4) grade, (5) teacher's name, (6) the name of the school, (7) years of attendance at the school, and (8) father's occupation. Each bit of this information was coded and placed in the Statistical Package for the Social Sciences (SPSS) for computer analysis.[97] The University of Tennessee, Knoxville Computing Center facilitated this task.

V. THE METHOD OF STATISTICAL ANALYSIS

In this study an analysis was made of the correlation between mean school achievement, as measured by the Tennessee State Basic Skills Test, and father's occupation. Three outcome variables were examined in this research: the mean achievement of students in the 9th, 10th, and 11th grades in the schools studied, the mean self-concept of academic ability of the students, and the mean self-reliance of the students. Prior to performing analysis of the data to assess the relationship

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[96]Dean J. Champion, Basic Statistics for Social Research (Scranton: Chandler Publishing Company, 1970), pp. 121-133.

[97]Borman H. Nie, et al., Statistical Package for the Social Sciences (New York: McGraw-Hill Book Company, 1975), p. 3.

between racial and socio-economic composition variables and climate variables, an attempt was made to correlate school mean achievement and the social climate variables.[98]

Testing the Hypotheses

The general hypothesis of this study, as stated in the null form, was that cultural or social-psychological normative climate and the student status-role definitions which characterized the school social system explain little or none of the variance in student academic achievement, self-concept of academic achievement, self-concept of academic ability, and self-reliance. Of course, the research hypothesis, H_1: asserted the opposite state of affairs. According to Williams, the research hypothesis is: a statement expressing differences or relationships among phenomena, the acceptance or nonacceptance of which is based on resolving a logical alternation with a null hypothesis.[99]

The statistics used for testing the relationship between student achievement and school social system was the correlation coefficient. According to Williams, a particular ratio among the deviations of variables about the mean of the distribution is what underlies a correlation coefficient.[100] Analysis of variance was employed to determine if there was a relationship among fathers' occupations and

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[98]Brookover, et al., op. cit., pp. 33-35.

[99]Frederick Williams, Reasoning With Statistics (New York: Holt, Rinehart and Winston, 1979), p. 54.

[100]Ibid., pp. 124-125.

student academic achievement as measured by scores on the Tennessee Basic Skills Test. The key point in analysis of variance is contributed by the F ratio.[101] The Scheffe procedure was employed to denote significant differences among groups at the .05 level.[102] Analysis of variance and the Scheffe procedure were also employed to determine if a relationship existed among the percentage of Blacks in the Student body and student academic achievement.

The nonparametric Chi-square statistic was used to test for a significant relationship between student academic achievement and the percentage of Blacks in the student body.[103]

VI. SUMMARY

The design and procedure of the study was explained in this chapter. Initial selection of the sample schools which were used in the study was explained, and the method of data collection was outlined. The instrument used in data collection was described. In the final section of the chapter, the methods of testing the hypotheses were presented.

The following chapter contains the statistical findings in detail.

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[101] Ibid., p. 81.

[102] Ibid., p. 84.

[103] Champion, op. cit., p. 153.

CHAPTER IV

PRESENTATION AND ANALYSIS OF THE DATA

I. INTRODUCTION

The statistical results analyzed and presented in this Chapter were gleaned from the procedures discussed in Chapter III. The characteristics of the data presented in this Chapter were also discussed in the previous Chapter. The variables which characterize the school social system are described and explained in this Chapter. First of all, the socio-economic-status and racial composition of the school student body will be analyzed, the former being indexed by the mean rating of fathers' occupation--the later being determined by the percentage of Black students in the school student body. In addition to the composition of the student body, the focus of this Chapter will also be on the analyses of a number of other personnel inputs, including the number of Black students in the school.

Secondly, a set of variables characterizing certain aspects of the school social structure were analyzed. These include student status role definitions, which include the extent to which students are differentiated and grouped for different instructional programs and the extent to which students are permitted to move about in the classroom social structure .

Lastly, the school climate variables which characterize the school social system were analyzed. These variables describe the

students' perceptions of others' expectations and evaluations of them and the norms of the school social system. Also described by the school climate variables are the norms of the school social system.[104]

II. SUMMARIZATION OF THE DATA

A summarization of the data obtained from and relative to the 100 students in the sample is presented in this section. The schools are identified by a randomly assigned code number in each of the summary tables. They are categorized by low, middle and upper SES.

III. TESTING OF HYPOTHESES AND ANALYSIS OF DATA

Father's Occupation and Student Achievement Data

Hypothesis I. The first hypothesis was concerned with whether there were significant differences among the 100 students fathers' occupations and the students' academic achievement, as measured by their scores on the Tennessee Basic Skills Test. To test this hypothesis, an analysis of variance was performed with fathers' occupations as the independent variable and students' scores on the Basic Skills Test as the dependent variables. The maximum possible range of scores assigned to fathers' occupations was from two to ninety nine.[105] A rank of

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[104] Brookover, et al., op. cit., pp. 137-139.

[105] Blau and Duncan, op. cit., pp. 122-123.

one was assigned to the interval 80-90; a rank of two was assigned to the interval of 60-79; a rank of three was assigned to the interval 30-59; a rank of four was assigned to the interval 15-20; a rank of five was assigned to the interval of 0-2. The possible maximum range of scores on the Basic Skills Test was from zero to one hundred. Table I contains scores on the index of occupational status.

As Table I indicates, the score interval 90-96 contains occupational titles such as architects, dentists, and surgeons. Relative to tabular hierarchy, those occupational titles are the highest in status. Occupational titles such as coal mine laborers, porters and operatives are contained within the interval 0-4. These occupational titles represent low status jobs in the American work world. Other intervals in Table I can be read similarly for the remainder of the occupational titles.

For purposes relative to the present study, Table II was constructed in order to illustrate the classification and intervals for students' fathers' occupations. As Table II indicates, professional persons are contained in the 80-99 interval, while unskilled workers occupy the 0-2 interval. Other occupations in Table II can be read similarly for the remainder of the intervals.

Table III illustrates the analysis of variance of students' fathers' occupational status by students' composite scores on the Basic Skills Test. Variable X89 represents students' composite scores on the Basic Skills Test, while variable X7 represents students' fathers' occupational status.

TABLE I

INDEX OF OCCUPATIONAL STATUS

Score Interval	Title of Occupation (Frequency per 10,000 Males in 1960 Experienced Civilian Labor Force in Parentheses
25 to 39	Salaried and self-employed managers and proprietors, eating and drinking places (43); salesmen and sales clerks, retail trade 9274); book-binders (3); radio and television repairmen (23); firemen, fire protection (30); policemen and detectives, private (34)
30 to 34	Building managers and superintendents (7); self-employed proprietors, gasoline service stations (32); boilermakers (6); machinists (111); millwrights (15); plumbers and pipe fitters (72); structural metal workers (14); tinsmiths, coppersmiths, and sheet metal workers (31); deliverymen and routemen (93); operative, printing, publishing and allied industries (13); sheriffs and bailiffs (5)
25 to 29	Messengers and office boys (11); newsboys (41); brickmasons, stonemasons, and tile setters (45); mechanics and repairmen, n.e.c. (266); plasters (12); operatives, drugs and medicine manufacturing (2); ushers, recreation and amusement (2); laborers, petroleum refining (3)
20 to 24	Telegraph messengers (1); shipping and receiving clerks (59); bakers (21); cabinetmakers (15); excavating , grading, and road machine operators (49); railroad and car shop mechanics and repairmen (9); tailors (7); upholsterers (12); bus drivers (36); filers, grinders, and polishers, metal (33); welders and flame-cutters (81)
15 to 19	Blacksmiths (5); carpenters (202); automobile mechanics and repairmen (153); painters (118) attendants, auto service and parking (81); laundry and dry cleaning operatives (25); truck and tractor drivers (362); stationary firemen (20); operatives, metal industries (103); operatives, wholesale and retail trade (35); barbers (38); bartenders (36); cooks, except private household (47)

TABLE I (Continued)

Score Interval	Title of Occupation (Frequency per 10,000 Males in 1960 Experienced Civilian Labor Force in Parentheses
10 to 14	Farmers (owners and tenants)(52); shoemakers and repairers, except factory (8); dyers (4); taxicab drivers and chauffeurs (36); attendants, hospital and other institution (24); elevator operators (11); fishermen and oystermen (9); gardeners, except farm, and groundskeepers (46); longshoremen and stevedores (13); laborers, machinery manufacturing (10)
5 to 9	Hucksters and peddlers (5); sawyers (20); weavers, textile (8); operatives, footwear, except rubber, manufacturing (16); janitors and sextons (118); farm laborers, wage workers (241); laborers, blast furnaces, steel works, and rolling mills (26); construction laborers (163)
0 to 4	Coal mine operative and laborers (31); operatives, yarn, thread and fabric mills (30); porters (33); laborers, saw mills, planning mills, and millwork (21)
90 to 96	Architects (7); dentists (18); chemical engineers (9); lawyers and judges (45); physicians and surgeons (47)
85 to 89	Aeronautical engineers (11); industrial engineers (21); salaried managers, banking and finance (30); self-employed proprietors, banking and finance (5)
80 to 84	College presidents, professors and instructors (31); editors and reporters (14); electrical engineers (40); pharmacists (19); officials, federal public administration and postal service (13); salaried managers, business services (11)
75 to 79	Accountants and auditors (87); chemists (17); veterinarians (3); salaried managers, manufacturing (133); self-employed proprietors, insurance and real estate (9)
70 to 74	Designers (12); teachers (105); store buyers and department heads (40); credit men (8); salaried managers, wholesale trade (41); self-employed proprietors, motor vehicles and accessories retailing (12); stock and bond salesmen (6)

TABLE I (Continued)

Score Interval	Title of Occupation (Frequency per 10,000 Males in 1960 Experienced Civilian Labor Force in Parentheses
65 to 69	Artists and art teachers (15); draftsmen (45); salaried managers, motor vehicles and accessories retailing (18); self-employed proprietors, apparel and accessories retail stores (8); agents, n.e.c. (29); advertising agents and salesmen, manufacturing (93); foremen, transportation equipment manufacturing (18)
60 to 64	Librarians (3); sports instructors and officials (12); postmasters (5); salaried managers, construction (31); self-employed proprietors, manufacturing (35); stenographers, typists, and secretaries (18); ticket, station, and express agents (12); real estate agents and brokers (33); salesmen, wholesale trade (106); foremen, machinery manufacturing (28); photoengravers and lithographers (5)
55 to 59	Funeral directors and embalmers (8); railroad conductors (10); self-employed proprietors, wholesale trade (28); electrotypers and stereotypers (2); foremen, communications, utilities, and sanitary services (12); locomotive engineers (13)
50 to 54	Clergymen (43); musicians and music teachers (19); officials and administrators, local public administration (15); salaried managers, food and dairy products stores (21); self-employed proprietors, construction (50); bookkeepers (33); mail carriers (43); foremen, metal industries (28); toolmakers, and die-makers and setters (41)
45 to 49	Surveyors (10); salaried managers, automobile repair services and garages (4); office machine operators (18); linemen and servicemen, telephone, telegraph and power (60); locomotive firemen (9); airplane mechanics and repairmen (26); stationary engineers (60)
40 to 44	Self-employed proprietors, transportation (8); self-employed proprietors, personal services (19); cashiers (23); clerical and kindred workers, n.e.c. (269); electricians (77); construction foremen (22); motion picture projectionnists (4); photographic process workers (5); railroad switchmen (13); policemen and detectives, government (51)

TABLE II

CLASSIFICATION AND INTERVALS FOR FATHERS' OCCUPATIONS

Classification	Intervals
1. Professional Persons	(80-99)
2. Proprietors, managers, administrators and officials	(60-79)
3. Clerical and Kindred workers	(30-59)
4. Skilled workers and foremen	(15-29)
5. Semi-skilled workers	(3-14)
6. Unskilled workers a. Laborers b. Janitors c. Maintenance d. Unemployed	(0-2)

TABLE III

ANALYSIS OF VARIANCE OF STUDENT SCORES ON BASIC SKILLS TEST AND FATHERS' OCCUPATIONS*

SOURCE	D.F.	SUM OF SQUARES	MEAN SQUARES	F RATIO	F PROB.
BETWEEN GROUPS	5	54923.1370	10984.6250	4.248	0.0016
WITHIN GROUPS	94	243067.9023	2585.8286		
TOTAL	99	297991.0000			

*VARIABLE X89 (Denotes Student's Scores on Basic Skills Test) by VARIABLE X7 (Denotes Fathers' Occupations).

As Table III indicates, there were five degrees of freedom for the between groups and 94 df for the within groups. The test for the hypothesis that there is no significant differences among fathers' occupations and student academic achievement is the F test, consisting of the ratio of the between groups variance to the within group variance.[106] The F value of 4.248 was large enough to reject the null hypothesis which stated there were no significant differences among the students' scores on the Basic Skills Test and fathers' occupational status.

Table IV displays students' fathers' occupational groups, which number one through six. As noted in Table II, pages 53, 54 and 55, group 1 represents professional while group 6 represents unskilled workers. The mean for each group in Table IV represents students' scores on the Basic Skills Test as they relate to students' fathers' occupations. As indicated in Table IV, the Skills Test score mean for group 1 was 354.9521, while the mean for group 6 was 294.0000. Since there were four sub-tests of the Basic Skills Test, it was possible to obtain an average sub-test score for each occupational status group. The sub-test mean for group 1 was 88.7, while group 6 had an average of 73.5 yielding a difference of 15.2 points.

After the analysis of variance in Table III, page 57, produced a significant F ratio between students' fathers' occupations and students'

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[106]Champion, op. cit., pp. 118-122.

TABLE IV

FATHERS' OCCUPATIONAL GROUPS

GROUP	COUNT	MEAN	STANDARD DEVIATION	STANDARD ERROR	MINIMUM	MAXIMUM	95 PCT CONF INT FOR MEAN		
GRP01	21	354.9521	39.7950	8.6840	253.0000	399.0000	336.8376	TO	373.0664
GRP02	12	344.5833	57.8438	16.6980	205.0000	398.0000	307.8311	TO	381.3352
GRP03	11	336.7271	29.1927	8.8019	302.0000	391.0000	317.1150	TO	356.3389
GRP04	16	322.1875	52.5245	13.1311	197.0000	389.0000	294.1990	TO	350.1758
GRP05	9	327.3333	37.5333	12.5111	256.0000	385.0000	298.4827	TO	356.1836
GRP06	31	294.0000	61.4859	11.0432	128.0000	385.0000	271.4468	TO	316.5530
TOTAL	100	325.0800	54.8636	5.4864	128.0000	399.0000	314.1938	TO	335.9661
	FIXED EFFECTS MODEL		50.8510	5.0851			314.9834	TO	335.1765
	RANDOM EFFECTS MODEL			11.4501			295.6467	TO	354.5129

scores on the Basic Skills Test, an a posteriori constrast test was employed to compare all possible pairs of group means.[107]

The specific test employed for this purpose was the Scheffe test, which is appropriate for any level of significance (Alpha). The level of significance used throughout the present study is the .05 level.

In order to determine if the Scheffe test was appropriate, the Bartlett-Box F, a test for homogeneity of variance, was employed.[108] According to Tanner, if the Bartlett-Box F value is larger than the adopted level of significance, it is permissible to proceed with the Scheffe procedure.[109] As Figure 1 indicates, the Bartlett-Box F P value is .069, which is larger than the .05 level of significance adopted by this study. Therefore, it was advisable to proceed with the Scheffe procedure.

Figure 2 displays the Scheffe procedure. According to Figure 2, the occupational groups that are significantly different from each other as they relate to students' scores on the Basic Skills Test are group 1 and group 6. The first hypothesis is therefore rejected and for the sample it may be concluded that there is an association between fathers'

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[107] Nie, op. cit., pp. 427-428.

[108] Based on the advice of Dr. C. Kenneth Tanner, Professor, Educational Administration and Supervision, The University of Tennessee, Knoxville, in a series of meetings between June, July and August, 1981.

[109] Ibid.

TEST FOR HOMOGENEITY OF VARIANCES

COCHRANS C = MAX. VARIANCE/SUM(VARIANCES) = 0.2754, P = 0.194 (APPROX.)
BARTLETT-BOX F = 2.052, P = 0.069
MAXIMUM VARIANCE / MINIMUM VARIANCE = 4.436

FIGURE 1

BARTLETT-BOX TEST FOR HOMOGENEITY OF VARIANCE

VARIABLE X89
BY VARIABLE X7 *

MULTIPLE RANGE TEST

SCHEFFE PROCEDURE
RANGES FOR THE 0.050 LEVEL -

4.81 4.81 4.81 4.81 4.81

THE RANGES ABOVE ARE TABLE RANGES. THE VALUE ACTUALLY COMPARED WITH MEAN(J)-MEAN(I) IS..
35.9571 * RANGE * SQRT(1/N(I) + 1/N(J))

(*) DENOTES PAIRS OF GROUPS SIGNIFICANTLY DIFFERENT AT THE 0.050 LEVEL

MEAN	GROUP	GRP 6	GRP 4	GRP 5	GRP 3	GRP 2	GRP 1
294.0000	GRP06						
322.1875	GRP04						
327.3333	GRP05						
336.7271	GRP03						
344.5833	GRP02						
354.9521	GRP01	*					

*VARIABLE X89 (Denotes Students Scores on Basic Skills Test by Variable X7 (Denotes Father's Occupations).

FIGURE 2

SCHEFFE PROCEDURE

occupations (professional and unskilled) and student academic achievement.

Hypothesis II. There is no association between school social structure and student achievement.

The scattergram displayed in Figure 3 was employed to determine if there was an association between school social structure and student achievement. The correlation of -.12 (significance = .13) indicated no significant relationship between school social structure and student achievement. School social structure is indexed by X88. Student academic achievement is indexed by variable X89. Because no significant relationship was found between school social structure and student achievement, the null hypothesis was not rejected.

Hypothesis III. Predominantly Black schools do not differ from White schools with regards to the school social structure.

In order to test this hypothesis a crosstabulation was employed in order to arrive at a joint frequency distribution of cases according to the percentage of Blacks in the student body and school social structure. In Figure 4 the variable X75 represents the percentage of Blacks in the student body and the variable SOST signifies school social structure.[110]

The distribution produced by the crosstabulation in Figure 4 was subjected to summarization by Pearson's R, which yielded a coefficient of -0.1838. As Figure 4 indicates the significance was 0.0373. Since

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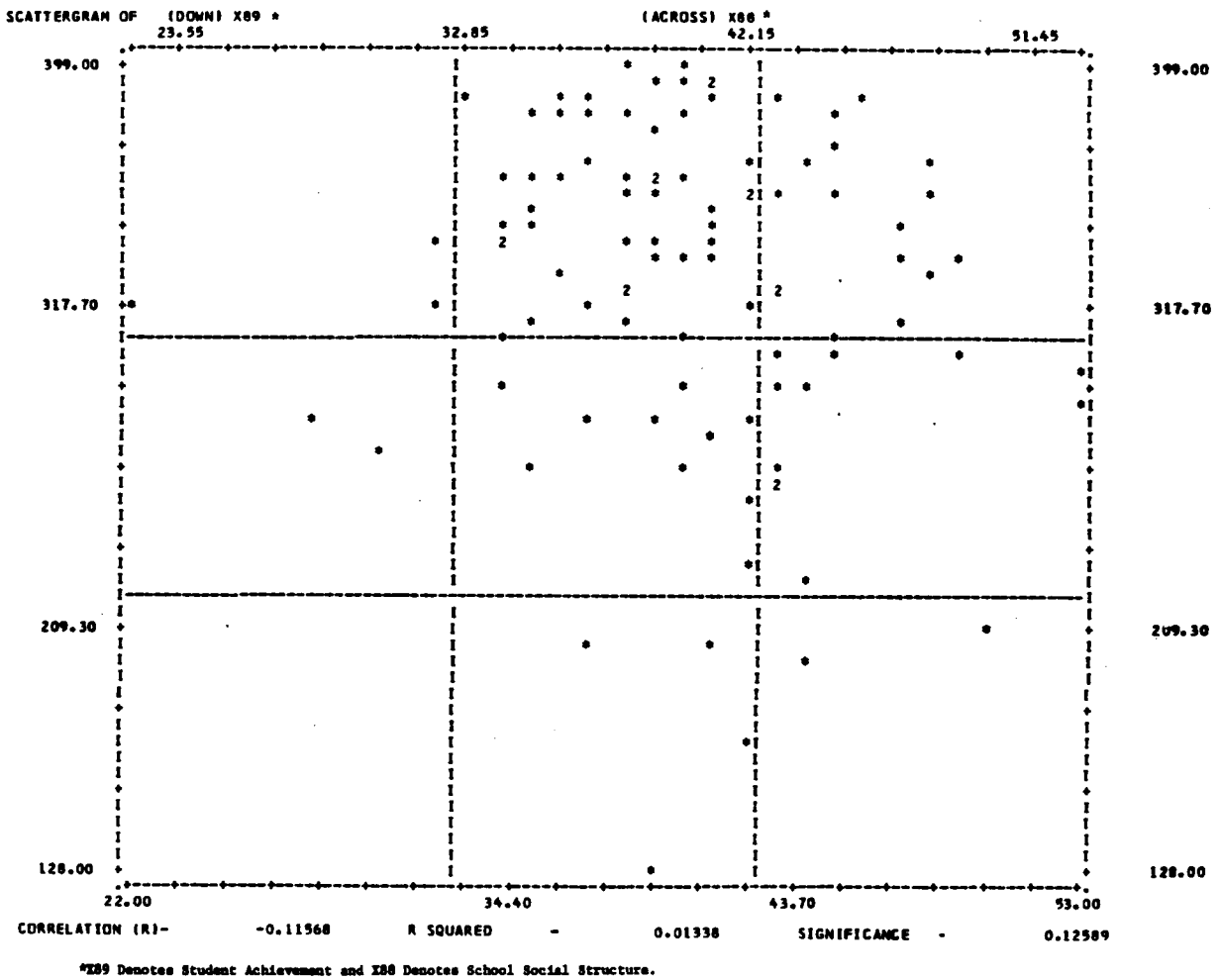
[110] Ibid.



*X89 Denotes Student Achievement and X88 Denotes School Social Structure.

FIGURE 3

SCATTERGRAM OF SCHOOL SOCIAL STRUCTURE
AND STUDENT ACHIEVEMENT

```
* * * * * * * * * * * * * * * * * *   C R O S S T A B U L A T I O N   O F   * * * * * * *
   X75 *                                                    BY  SOST *
* * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *

                    SOST
            COUNT  I
           ROW PCT I                                  ROW
           COL PCT I                                 TOTAL
           TOT PCT I      1.I      2.I      3.I
X75        --------I--------I--------I--------I
               2.  I     3  I    30  I     0  I    33
                   I   9.1  I  90.9  I   0.0  I  34.7
                   I  11.5  I  45.5  I   0.0  I
                   I   3.2  I  31.6  I   0.0  I
                  -I--------I--------I--------I
              44.  I     8  I    16  I     0  I    24
                   I  33.3  I  66.7  I   0.0  I  25.3
                   I  30.8  I  24.2  I   0.0  I
                   I   8.4  I  16.8  I   C.0  I
                  -I--------I--------I--------I
              98.  I    15  I    20  I     3  I    38
                   I  39.5  I  52.6  I   7.9  I  40.0
                   I  57.7  I  30.3  I 100.0  I
                   I  15.8  I  21.1  I   3.2  I
                  -I--------I--------I--------I
           COLUMN      26       66        3       95
            TOTAL    27.4     69.5      3.2    100.0

    3 OUT OF      9 ( 33.3%) OF THE VALID CELLS HAVE EXPECTED CELL FREQUENCY LESS THAN 5.0.
MINIMUM EXPECTED CELL FREQUENCY =  0.758
CHI SQUARE =     14.63595 WITH   4 DEGREES OF FREEDOM   SIGNIFICANCE =  0.0055
CRAMER'S V =     0.27755

CORRELATION (R) -0.18                  SIGNIFICANCE - 0.0373
```

*X75 Denotes Percentage of Blacks in the Student Body and SOST Denotes School Social Structure.

FIGURE 4

CROSSTABULATION OF PERCENTAGE OF BLACKS IN THE STUDENT BODY BY SCHOOL SOCIAL STRUCTURE

the latter figure is less than the .05 Alpha selected for the present, it was concluded that the association between the percentage of Blacks in the student body and school social structure is significant at the .05 level. With n - 2 = 98 degrees of freedom, the correlation coefficient must be equal to or greater than 0.1685 in order to be significant at the .05 level.[111] Since the Pearson R in Figure 4 is -0.018383, the null hypothesis which posted no association between the percentage of Blacks in the student body and school social structure can be rejected at the .05 level of significance.

Hypothesis IV. There is no association between student self-concept and academic ability.

The scattergram presented in Figure 5 displays the plotted relationship between student self-concept (variable X87) and academic ability (variable X89). The correlation between the two variables is indexed by a coefficient of -0.20942, as indicated in Figure 3, page 64. This correlation was significant at the .05 level, making it possible to reject the null hypothesis which stated that there was no association between student self-concept and academic ability.

Hypothesis V. There is no association between racial composition of the student body and student achievement.

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[111]Allen L. Edwards, An Introduction to Linear Regression and Correlation (San Francisco: W. H. Freeman and Company, 1976), p. 86 and 201.

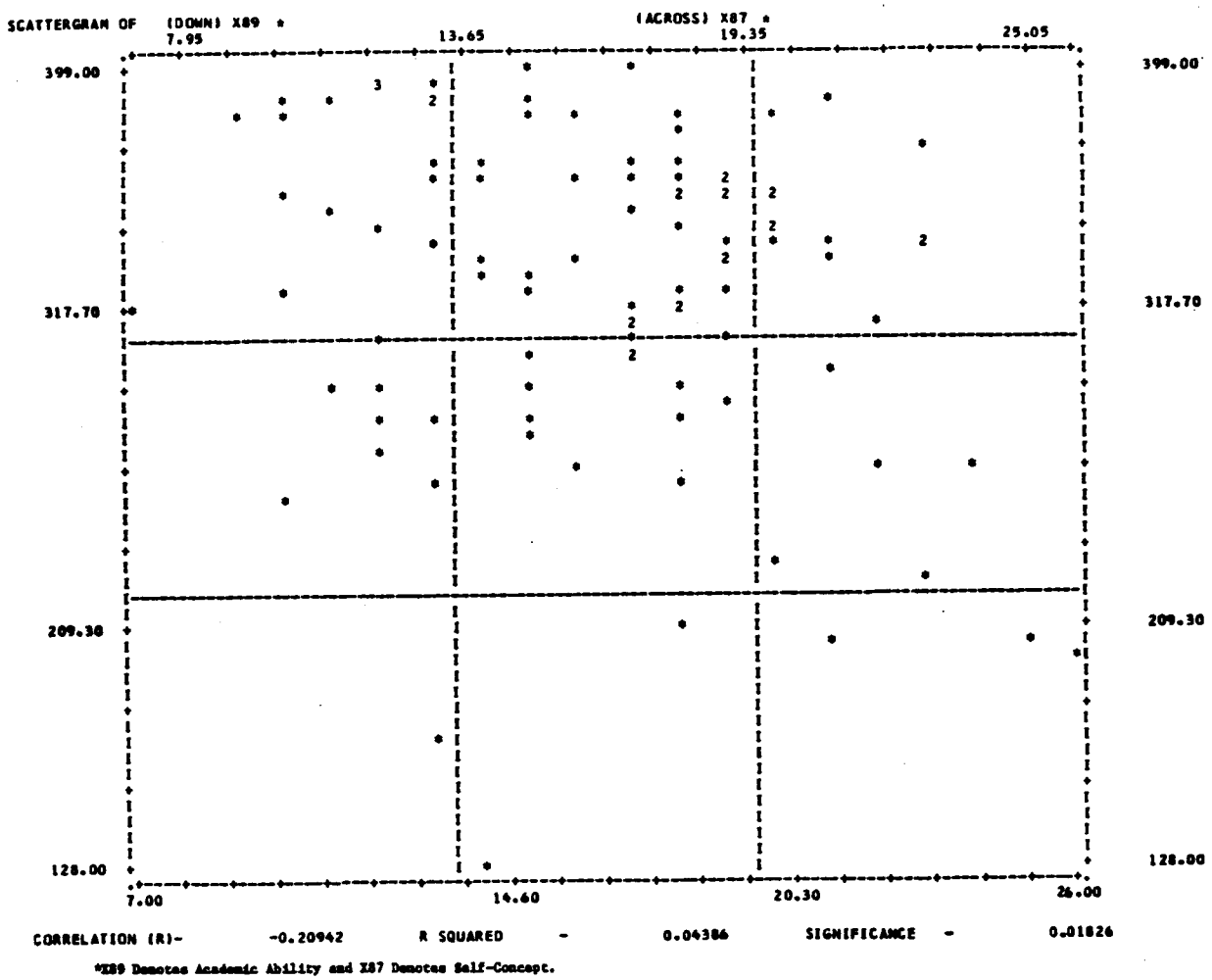

FIGURE 5

SCATTERGRAM OF THE RELATIONSHIP BETWEEN SELF-CONCEPT AND ACADEMIC ABILITY

In order to test this hypothesis, an analysis of variance was conducted among the percentages of Blacks in the student bodies and each of the four subtests of the Basic Skills Test. These analyses are displayed in Table V through VIII and Figure 6.

Table V displays the analysis of variance among the percentage of Blacks in the student body and scores on the math subtest of the Tennessee Basic Skills Test. Variable X71 signifies math subtest scores and variable X75 denotes the percentage of Blacks in the student body.

With 2 degrees of freedom for MS between and 92 MS mean square, the F ratio must be greater than the tabular value of 3.1 in order to reject the null hypothesis.[112] The F value in Table V is 13.397, which is large enough to suggest that perhaps there is no association among the racial composition of the student body and scores on the math subtest.

In order to determine which groups were significantly different at the .05 level, the Scheffe test was applied, since homogeneity of variance existed. In Figure 6 the Scheffe procedure indicates that groups 02 and 98 are significantly different at the .05 level. Group 02 denotes the school which was 2 percent Black, while 98 represents the school which was 98 percent Black.

Table VI contains the analysis of variance between scores on the Spelling subtest and the percentage of Blacks in the student body. Variable X72 represents scores on the Spelling subtest and variable X75

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[112]Champion, op. cit., pp. 119 and 285.

TABLE V

ANALYSIS OF VARIANCE FOR THE PERCENTAGE OF BLACKS IN THE STUDENT BODY AND MATH TEST SCORES*

SOURCE	D.F.	SUM OF SQUARES	MEAN SQUARES	F RATIO	F PROB.
BETWEEN GROUPS	2	6821.5898	3410.7947	13.297	0.0000
WITHIN GROUPS	92	23598.8047	256.5085		
TOTAL	94	30420.3906			

*VARIABLE X71 Denotes Math Test Scores and X75 Denotes Percentage of Blacks in the Student Body.

TABLE VI

ANALYSIS OF VARIANCE FOR THE PERCENTAGE OF BLACKS IN THE STUDENT BODY AND SPELLING SCORES *

SOURCE	D.F.	SUM OF SQUARES	MEAN SQUARES	F RATIO	F PROB.
BETWEEN GROUPS	2	2365.6720	1182.8359	8.128	0.0006
WITHIN GROUPS	92	13388.2334	145.5243		
TOTAL	94	15753.9023			

*VARIABLE X72 Denotes Spelling Scores and X75 Denotes Percentage of Blacks in the Student Body.

TABLE VII

ANALYSIS OF VARIANCE FOR THE PERCENTAGE OF BLACKS IN THE STUDENT BODY AND LANGUAGE SCORES*

SOURCE	D.F.	SUM OF SQUARES	MEAN SQUARES	F RATIO	F PROB.
BETWEEN GROUPS	2	7760.7104	3880.3552	19.851	0.0000
WITHIN GROUPS	92	17983.2639	195.4702		
TOTAL	94	25743.9727			

*VARIABLE X73 Denotes Language Scores and X75 Denotes Percentage of Blacks in the Student Body.

TABLE VIII

ANALYSIS OF VARIANCE FOR THE PERCENTAGE OF BLACKS IN THE STUDENT BODY AND READING SCORES*

SOURCE	D.F.	SUM OF SQUARES	MEAN SQUARES	F RATIO	F PROB.
BETWEEN GROUPS	2	7736.5496	3868.2747	21.886	0.0000
WITHIN GROUPS	92	16260.3848	176.7433		
TOTAL	94	23996.9336			

*VARIABLE X74 Denotes Reading Scores and X75 Denotes Percentage of Blacks in the Student Body.

VARIABLE X71 Deonotes Math Scores *
BY VARIABLE X75 Denotes Percentage of Blacks

MULTIPLE RANGE TEST

SCHEFFE PROCEDURE
RANGES FOR THE 0.050 LEVEL -

3.52 3.52

THE RANGES ABOVE ARE TABLE RANGES. THE VALUE ACTUALLY COMPARED WITH MEAN(J)-MEAN(I) IS..
11.3249 * RANGE * SQRT(1/N(I) + 1/N(J))

(*) DENOTES PAIRS OF GROUPS SIGNIFICANTLY DIFFERENT AT THE 0.050 LEVEL

MEAN	GROUP	G R P 9 8	G R P 4 4	G R P 0 2
67.7895	GRP98			
77.7500	GRP44			
87.4242	GRP02	*		

FIGURE 6

SCHEFFE PROCEDURE FOR PERCENTAGES OF
BLACKS AND MATH SCORES

indicates the percentage of Blacks in the student body. With 2 degrees of freedom for between groups and 92 df for within groups, the F value must exceed 3.1 in order to reject the null hypothesis. Since the F value in Table VI, page 70, was 8.128 the null hypothesis might have been rejected the .05 level if the variances were homogeneous. It was concluded that since homogeneity did not exist, no conclusion could be made regarding the racial composition of the student bodies in the sample and scores on the Spelling subtest.

Table VII, page 71, contains the analysis of variance between scores on the Language subtest and the percentage of Blacks in the student body. Variable X73 denotes students' scores on the Language subtest and variable X75 represents the percentage of Blacks in the student body. The F ratio in Table VII, page 71, is 19.851, which is sufficiently large enough to reject the null hypothesis. However, since the test for homogeneity failed, no conclusion was made with respect to students' scores on the Language subtest and the racial composition of the student body.

Table VIII, page 72, contains the analysis of variance between students' scores on the Reading subtest and the percentage of Blacks in the student body. Variable X74 represents students' scores on the Reading subtest, while variable X75 represents the percentage of Blacks in the student population. With 2 df for MS between and 92 df for MS mean the F ratio of 21.886 is sufficient for rejecting the null hypothesis if the groups were homogeneous. Since homogeneity was not

found no conclusion was made with respect to Reading subtest and the racial composition of the student body.

Hypothesis VI. There is no association between the percentage of Black students in the student body and fathers' occupation.

In order to test this hypothesis the statistic Eta was employed. The crosstabulation which yielded the Eta coefficient appears in Figure 7. Fathers' occupation is indicated by variable X7, while variable X75 denotes the percentage of Black students in the student body. Eta was chosen since the measure of association of fathers' occupation is nominal level data, while the percentage of Black students in the student body represents interval level data.[113]

As Figure 7 indicates, the value for Eta with percentage of Black students in the student body equals .64. With fathers' occupation Eta equals .66144. Both of these coefficients indicate a substantial relationship[114] between the percentage of Black students in the student body and fathers' occupation. This made it possible to reject the null hypothesis which stated that there was no association between the percentage of Black students in the student body and fathers' occupation.

Hypothesis VII. There is no association between academic futility and fathers' occupation.

---

[113]Nie, et al., op. cit., p. 230.

[114]Williams, op. cit., p. 128.

* C R O S S T A B U L A T I O N O F * * * *
X75 BY X7
* *

X75	COUNT / ROW PCT / COL PCT / TOT PCT	X7 1.	2.	3.	4.	5.	6.	ROW TOTAL
2.		18	8	3	1	1	2	33
		54.5	24.2	9.1	3.0	3.0	6.1	34.7
		85.7	72.7	27.3	7.1	11.1	6.9	
		18.9	8.4	3.2	1.1	1.1	2.1	
44.		2	1	4	5	2	10	24
		8.3	4.2	16.7	20.8	8.3	41.7	25.3
		9.5	9.1	36.4	35.7	22.2	34.5	
		2.1	1.1	4.2	5.3	2.1	10.5	
98.		1	2	4	8	6	17	38
		2.6	5.3	10.5	21.1	15.8	44.7	40.0
		4.8	18.2	36.4	57.1	66.7	58.6	
		1.1	2.1	4.2	8.4	6.3	17.9	
COLUMN TOTAL		21 22.1	11 11.6	11 11.6	14 14.7	9 9.5	29 30.5	95 100.0

11 OUT OF 1 B (61.1%) OF THE VALID CELLS HAVE EXPECTED CELL FREQUENCY LESS THAN 5.0.

ETA = 0.64297 WITH X75 DEPENDENT = 0.66144 WITH X7 DEPENDENT.

FIGURE 7

CROSSTABULATION OF PERCENTAGES OF BLACKS BY STUDENTS' FATHERS' OCCUPATIONS

Table IX contains an analysis of variance of fathers' occupation by student academic futility. The students' fathers' occupations are indexed by variable X7, while variable X86 denotes student academic futility. With 5 degrees between group df and 94 within df, the F ratio 0.183 is too small to reject the null hypothesis. It was therefore concluded that there is no association between fathers' occupation and student academic futility.

Hypothesis VIII. There is no association between student academic achievement and size of the student body.

Figures 8 through 10 contain crosstabulations of size of the student body by each of the four subtests of the Basic Skills Test.

Figure 8 contains the crosstabulations of size of the student body by scores on the math subtest. Size of the student body is indicated by X76, while the variable MATH denotes scores (1 = Pass, 2 = Fail) on the math subtest. From the available measures of association in Figure 8, Chi square was selected because its assumptions were met by the cell frequencies in the figure. None of the cells contained frequencies of less than five cases. Had there been any cells with frequencies less than five cases, the assumption for Chi square would not have been met.

An examination of Chi square of 14.71735 with 2 degrees of freedom, reveals that the .05 level of significance chosen for this study was satisfied. In fact the 0.0006 Alpha is more significant than the Alpha selected for the present study. It was therefore possible to reject the null hypothesis which posited no relationship between student

TABLE IX

ANALYSIS OF VARIANCE OF TATHERS' OCCUPATIONS
AND STUDENT ACADEMIC FUTILITY*

SOURCE	D.F.	SUM OF SQUARES	MEAN SQUARES	F RATIO	F PROB.
BETWEEN GROUPS	5	26.1299	5.2260	0.183	0.9683
WITHIN GROUPS	94	2679.9228	28.5098		
TOTAL	99	2706.0525			

*VARIABLE X86 Denotes Student Academic Futility and X7 Denotes Fathers' Occupations.

```
* * * * * * * * * * * * * * * * * * CROSSTABULATION OF * * * * * * * * * * * * * * * * * * *
X76*                                                    BY MATH
* * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
```

X76	MATH 1.	MATH 2.	ROW TOTAL
766.	16	8	24
ROW PCT	66.7	33.3	24.0
COL PCT	25.0	22.2	
TOT PCT	16.0	8.0	
798.	16	22	38
ROW PCT	42.1	57.9	38.0
COL PCT	25.0	61.1	
TOT PCT	16.0	22.0	
2309.	32	6	38
ROW PCT	84.2	15.8	38.0
COL PCT	50.0	16.7	
TOT PCT	32.0	6.0	
COLUMN TOTAL	64	36	100
	64.0	36.0	100.0

```
CHI SQUARE =     14.71735 WITH   2 DEGREES OF FREEDOM   SIGNIFICANCE =  0.0006
CRAMER'S V =     0.38363
CONTINGENCY COEFFICIENT =     0.35818
LAMBDA (ASYMMETRIC) =  0.25806 WITH X76       DEPENDENT.          =  0.16667 WITH MATH      DEPENDENT.
LAMBDA (SYMMETRIC) =  0.22449
UNCERTAINTY COEFFICIENT (ASYMMETRIC) =  0.07076 WITH X76       DEPENDENT.          =  0.11673 WITH MATH      DEPENDENT.
UNCERTAINTY COEFFICIENT (SYMMETRIC) =  0.08811
KENDALL'S TAU B =    -0.19825  SIGNIFICANCE =  0.0185
KENDALL'S TAU C =    -0.21760  SIGNIFICANCE =  0.0185
GAMMA =    -0.33333
SOMERS'S D (ASYMMETRIC) = -0.23611 WITH X76       DEPENDENT.          = -0.16646 WITH MATH      DEPENDENT.
SOMERS'S D (SYMMETRIC) = -0.19526
ETA =  0.32633 WITH X76       DEPENDENT.          =  0.38363 WITH MATH      DEPENDENT.
PEARSON'S R =-0.32633  SIGNIFICANCE =  0.0005
```

*X76 Denotes Size of Student Body
MATH Denotes Mathematics Test Scores

FIGURE 8

CROSSTABULATION OF SIZE OF STUDENT BODY AND SCORES ON MATH TEST

```
* * * * * * * * * * * * * * * * * C R O S S T A B U L A T I O N   O F * * * * * * * * * * * * * * * * * * *
X76 *                                                    BY  SPLL
* * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
```

X76	SPLL 1.	SPLL 2.	ROW TOTAL
766.	23	1	24
	95.8	4.2	24.0
	26.1	8.3	
	23.0	1.0	
798.	28	10	38
	73.7	26.3	38.0
	31.8	83.3	
	28.0	10.0	
2309.	37	1	38
	97.4	2.6	38.0
	42.0	8.3	
	37.0	1.0	
COLUMN TOTAL	88	12	100
	88.0	12.0	100.0

```
    3 OUT OF      6 ( 50.0%) OF THE VALID CELLS HAVE EXPECTED CELL FREQUENCY LESS THAN 5.0.
MINIMUM EXPECTED CELL FREQUENCY =  2.880
CHI SQUARE =     11.92766 WITH    2 DEGREES OF FREEDOM    SIGNIFICANCE =  0.0026
CRAMER'S V =     0.34536
CONTINGENCY COEFFICIENT =     0.32644
LAMBDA (ASYMMETRIC) =  0.14516 WITH X76       DEPENDENT.          =  0.0      WITH SPLL      DEPENDENT.
LAMBDA (SYMMETRIC) =  0.12162
UNCERTAINTY COEFFICIENT (ASYMMETRIC) =  0.05576 WITH X76       DEPENDENT.          =  0.16381 WITH SPLL      DEPENDENT.
UNCERTAINTY COEFFICIENT (SYMMETRIC) =  0.08320
KENDALL'S TAU B =    -0.08290  SIGNIFICANCE =  0.1915
KENDALL'S TAU C =    -0.06160  SIGNIFICANCE =  0.1915
GAMMA =    -0.21508
SOMERS'S D (ASYMMETRIC) = -0.14583 WITH X76       DEPENDENT.          = -0.04712 WITH SPLL      DEPENDENT.
SOMERS'S D (SYMMETRIC) = -0.07123
ETA =  0.22133 WITH X76       DEPENDENT.          =  0.34536 WITH SPLL      DEPENDENT.
PEARSON'S R =-0.22133   SIGNIFICANCE =  0.0134
```

*X76 Denotes Size of Student Body
SPLL Denotes Spelling Test Scores

FIGURE 9

CROSSTABULATION OF SIZE OF STUDENT BODY AND SCORES ON THE SPELLING TEST

```
* * * * * * * * * * * * * * * * * * CROSSTABULATION OF * * * * * * * * * * * * * * * * * * * * *
X76 *                                                  BY  LANG
* * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
```

X76	COUNT / POW PCT / COL PCT / TOT PCT	LANG 1.	LANG 2.	ROW TOTAL
766.		18	6	24
		75.0	25.0	24.0
		23.4	26.1	
		18.0	6.0	
798.		23	15	38
		60.5	39.5	38.0
		29.9	65.2	
		23.0	15.0	
2309.		36	2	38
		94.7	5.3	38.0
		46.8	8.7	
		36.0	2.0	
COLUMN TOTAL		77	23	100
		77.0	23.0	100.0

```
CHI SQUARE =     12.62741 WITH   2 DEGREES OF FREEDOM   SIGNIFICANCE =  0.0018
CRAMER'S V =     0.35535
CONTINGENCY COEFFICIENT =     0.33484
LAMBDA (ASYMMETRIC) =  0.20968 WITH X76       DEPENDENT.          =  0.0      WITH LANG      DEPENDENT.
LAMBDA (SYMMETRIC) =  0.15294
UNCERTAINTY COEFFICIENT (ASYMMETRIC) =  0.06592 WITH X76       DEPENDENT.          =  0.13175 WITH LANG      DEPENDENT.
UNCERTAINTY COEFFICIENT (SYMMETRIC) =  0.08787
KENDALL'S TAU B =    -0.22529  SIGNIFICANCE =  0.0089
KENDALL'S TAU C =    -0.21680  SIGNIFICANCE =  0.0089
GAMMA =    -0.43499
SOMERS'S D (ASYMMETRIC) = -0.30604 WITH X76       DEPENDENT.          = -0.16585 WITH LANG      DEPENDENT.
SOMERS'S D (SYMMETRIC) = -0.21512
ETA =  0.32773 WITH X76       DEPENDENT.          =  0.35535 WITH LANG      DEPENDENT.
PEARSON'S R =-0.32772  SIGNIFICANCE =  0.0004
```

*X76 Denotes Size of the Student Body
LANG Denotes Language Test Scores

FIGURE 10

CROSSTABULATION OF SIZE OF STUDENT BODY AND SCORES ON THE LANGUAGE TEST

academic achievement (as measured by scores on the Math subtest) and the size of the student body.

The figures 766, 798, and 2309 represent the sizes of the three schools' student bodies. The number 1 and 2 above the cells represent those students who either passed or failed the particular subtest (in this case, MATH), with 1 representing those who passed and 2 those who failed the subtest. As Figure 8, page 79, indicates in the school with 766 students 16 passed and 8 failed the math subtest. The pass/fail cutoff score was 70. The school with 798 students had 16 students to pass and 22 to fail the math subtest. The school with 2,309 students had 32 students to pass and 6 students to fail the math subtest.

In Figure 9, page 80, 50 percent of the valid cells had expected cell frequencies of less than five, rendering it not feasible to obtain a valid measure of association between size of the student body and scores on the spelling subtest. Size of the student body was represented by variable X76. Students' scores on the spelling subtest were denoted by variable SPLL.

Figure 10, page 81, contains the crosstabulations of size of the student body by scores on the language subtest. Scores on the language subtest were denoted by variable LANG, while variable X76 represented size of the student body. Since the assumption concerning the appropriate level of measurement and expected cell frequency were met, the Chi square statistic was employed to determine if there was a significant relationship between student academic achievement (as

measured by scores on the language subtest) and the size of the student body.

Figure 11 represents the crosstabulations of size of the student body by students' scores on the Reading subtest. Size of the student body is denoted by variable X76, while students' scores on the reading subtest is indexed by variable READ.

As Figure 11 indicates the sample of size 24 from the school with 766 students had 17 students who passed the reading subtest and 7 who failed. The school whose total enrollment was 798 had 21 students in the sample size of 38 who passed the subtest while 17 students at the same school failed it. The school with 2,309 students had 37 students from the sample size of 38 who passed the subtest and 1 student who failed it. The observed Chi square value of 18.25729 with 2 degrees of freedom was significant at the .0001 level of significance. Since the Alpha level set for the present study was .05 the null hypothesis which posited no association between student academic achievement (as measured by students' scores on the reading subtest) and size of the student body was rejected in favor of the research hypothesis which stated that there was an association between student academic achievement and size of the student body.

V. SUMMARY

In this Chapter the data collected in the research has been presented and analyzed. The first section of the Chapter contains a summarization of the pertinent data obtained regarding student academic

```
* * * * * * * * * * * * * * * * * C R O S S T A B U L A T I O N   O F * * * * * * * * * * * * * * * * * * *
X76 *                                                    BY  READ
* * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
```

X76	READ COUNT ROW PCT COL PCT TOT PCT	1.00	2.00	ROW TOTAL
766.		17	7	24
		70.8	29.2	24.0
		22.7	28.0	
		17.0	7.0	
798.		21	17	38
		55.3	44.7	38.0
		28.0	68.0	
		21.0	17.0	
2309.		37	1	38
		97.4	2.6	38.0
		49.3	4.0	
		37.0	1.0	
COLUMN TOTAL		75 75.0	25 25.0	100 100.0

```
CHI SQUARE =     18.25729 WITH   2 DEGREES OF FREEDOM   SIGNIFICANCE =  0.0001
CRAMER'S V =     0.42729
CONTINGENCY COEFFICIENT =    0.39297
LAMBDA (ASYMMETRIC) =  0.25806 WITH X76       DEPENDENT.          =  0.0      WITH READ      DEPENDENT.
LAMBDA (SYMMETRIC) =  0.18391
UNCERTAINTY COEFFICIENT (ASYMMETRIC) =  0.10199 WITH X76       DEPENDENT.          =  0.19549 WITH READ      DEPENDENT.
UNCERTAINTY COEFFICIENT (SYMMETRIC) =  0.13405
KENDALL'S TAU B =    -0.28602  SIGNIFICANCE =  0.0013
KENDALL'S TAU C =    -0.28320  SIGNIFICANCE =  0.0013
GAMMA =    -0.51982
SOMERS'S D (ASYMMETRIC) = -0.37760 WITH X76       DEPENDENT.          = -0.21665 WITH READ      DEPENDENT.
SOMERS'S D (SYMMETRIC) = -0.27533
ETA =  0.40207 WITH X76       DEPENDENT.          =  0.42728 WITH READ      DEPENDENT.
PEARSON'S R =-0.40207  SIGNIFICANCE =  0.0000
```

*X76 Denotes the Size of the Student Body
READ Denotes Reading Test Scores

FIGURE 11

CROSSTABULATION OF SIZE OF STUDENT BODY AND SCORES ON THE READING TEST

achievement as measured by students' scores on the Tennessee Basic Skills Test and socio-conomic status. The latter was indexed by scores assigned to the students' fathers' occupations.

Following the summarization of the data, a presentation and analysis of data with respect to each of the eight hypotheses were provided. The correlations and significant differences among the variables and the findings relative to the hypotheses were indicated. Each hypothesis was concerned with the association between student academic achievement and school social structure. Specifically, in addition to a score on each subtest, scores on the following variables were obtained: (1) fathers' occupations, (2) school social structure, (3) percentage of Black students at the schools, (4) student self-concept, and (5) students' sense of academic futility.

There were significant differeances among students' fathers' occupations as they relate to student academic achievement. A post hoc analysis indicated that the academic achievement of students whose fathers were professional persons was significantly different from students whose fathers were unskilled workers. No significant relationship was found between school social structure and student academic achievement. There was no significant differences among schools of various sizes and school social structure. A significant negative correlation was found between student academic achievement and student self-concept.

There was a significant difference between the schools regarding the racial composition of the student body and student

academic achievement, as measured by scores on the math subtest. The post hoc analysis revealed a significant difference between schools A and C. No significant relationships were found between the percentage of Blacks in the student body and student academic achievement, as measured by students' scores on the spelling, language, and reading subtests.

No significant differences were found between fathers' occupations and students' sense of academic futility. A significant relationship was found between size of the student body and student academic achievement as measured by scores on the math subtest. The relationship between size of the student body and student academic achievement as measured by scores on the language subtest was significant. There was a significant relationship between size of the student body and student academic achievement as measured by scores on the reading subtest.

The reliability coefficients of the variables contained in the revised version of the SSCQ was .83. This coefficient (Cronbach's Alpha) may be interpreted as an index of how well the SSCQ measured school social structure, fathers' occupations, and student self-concept. The analysis of the reliability is presented in Table X.

TABLE X

ANALYSIS OF VARIANCE FOR RELIABILITY COEFFICIENTS

SOURCE OF VARIATION	SS	DF	MEAN SQUARE	F	PROBABILITY
BETWEEN PEOPLE	393.27006	81	4.85519		
WITHIN PEOPLE	7451.56452	5002	1.48972		
BETWEEN MEASURES	2931.13946	61	48.05147	52.52212	0.00000
RESIDUAL	4520.42506	4941	0.91488		
TOTAL	7844.83458	5083	1.54335		

GRAND MEAN = 2.59107

RELIABILITY COEFFICIENTS 62 ITEMS

ALPHA = 0.81157 STANDARDIZED ITEM ALPHA = 0.82789

CHAPTER V

SUMMARY, FINDINGS, CONCLUSIONS, IMPLICATIONS AND RECOMMENDATIONS

I. INTRODUCTION

The previous chapters in this study served to divide the content of the study into four interrelated parts. Chapter I introduced the problem with which the study was concerned and provided a general background for the study. A review of relevant literature pertaining to the research problem was presented in Chapter II. Chapter III outlined the design and methodology for the study. In Chapter IV the data were presented and analyzed. Chapter V, the present chapter, is devoted to a brief summary of the study, a discussion of findings drawn from the study, a presentation of conclusions and implications gleaned from the research, and a review of recommendations suggested by the investigator.

II. SUMMARY

Purpose of the Study

The purpose of this study was to compare mean student achievement and social economic indicators in an urban population. Variables pertinent to this study, and investigated therein, included: (1) racial composition of the student body, (2) father's occupational status, and (3) school social climate and social structure .

Hypotheses

In an attempt to accomplish the purpose of the study, the following null hypotheses were tested:

1. There is no association between father's occupation and student academic achievement.

2. There is no association between school social structure and student achievement.

3. Predominantly Black schools do not differ from White schools with respect to school social structure.

4. There is no association between student self-concept and academic ability.

5. There is no association between racial composition of the student body and student achievement.

6. There is no association between the percentage of Black students in the student body and father's occupation.

7. There is no association between academic futility and father's occupation.

8. There is no association between student academic achievement and size of the student body.

Design and Methodology of the Study

The design of the study was developed to determine if a relationship existed between student academic achievement and certain socio-economic indicators such as father's occupation. The study also investigated the extent to which a relationship existed between student academic achievement and school social climate variables. The population for the study consisted of the 24,370 students in the Knoxville City School System who attended the 56 schools which make up that system

and the 28,061 students in the Knox County School System. That system is composed of 45 schools.

This study included data taken from the administration of the School Social Climate Questionnaire (SSCQ), students' scores on the Tennessee State Basic Skills Test, and information obtained from the Knoxville Metropolitan Planning Commission. A total of 100 students from the schools were administered a revised version of the SSCQ, the results of which were analyzed in conjunction with their scores on the Basic Skills Test. These schools were selected according to high, medium and low socio-economic status.

An attempt was made to determine whether any significant relationship existed among student's (1) academic achievement, (2) father's occupation, (3) sense of academic futility, and (4) overall school social climate.

III. FINDINGS

This section contains a summary of the results of testing the eight hypotheses. The same test statistics, those given by the Pearson r, Analysis of Variance, Eta, Chi square and the Scheffe Multiple Range Test were used in testing the hypotheses and are not repeated in this report of the findings for each hypothesis.

The null hypothesis, that there is no significant relationship and differences among fathers' occupations and students' academic

achievement was rejected by the data. The analysis of variance and corresponding F tests yielded F values that were larger than the table values.

The second null hypothesis that there is no association between social structure and student academic achievement as measured by scores on the Basic Skills subtests was substantiated by the data. The associations between school social structure and the subtest were not significant.

The third null hypothesis that there is no association between the percentage of Black students in the student body and school social structure was rejected since there was a significant correlation between those two variables.

Hypothesis number four which stated no significant association between student self-concept and academic ability was rejected since the correlation coefficients on student self-concept and the four subtest scores were significant. All correlations between these variables were significant.

The fifth null hypothesis, that there is no association between the percentage of Black students in the student body and student academic achievement on math was rejected. However, this hypothesis was not rejected for spelling, language and reading. There was a negative association between the percentage of Black students in the student body and scores on the math subtest. There was a small negative association between percentage of Black students in the student body and scores on the spelling subtest.

The sixth null hypothesis which posited no relationship between percentage of Black students in the student body and students' fathers' occupations was rejected due to the positive correlation coefficient between the two variables.

The seventh null hypothesis which stated there is no association between students' sense of academic futility and fathers' occupations was not rejected by the nonsignificant correlation coefficient obtained in the two variables.

The eighth and last null hypothesis which stated that there was no association between student academic achievement and size of the student body was rejected. It was concluded that there was a significant relationship between student academic achievement and size of the student body.

IV. CONCLUSIONS

Data reported in this study of 100 students revealed that six of the eight null hypotheses could be rejected (hypothesis number five contained four sub hypotheses). From an assessment of the evidence gathered, it was concluded that school social structure was significantly related to student academic achievement, as measured by students' scores on the four Basic Skills subtests.

Further, it was found that six of the selected dimensions of school social structure were significantly related to student academic achievement among the sample 100 students. There was a significant

relationship between student academic achievement and school social structure, fathers' occupation, and student self-concept. There was also a significant relationship between percentage of Black students in the student body and fathers' occupations. The association between percentage of Black students in the student body and student academic achievement was significant for math, but the data did not reveal a significant relationship between the percentage of Black students and spelling, language, and reading. This finding does not parallel the literature, but is explained by the fact that the sample for this study contained a higher level of socio-economic status among Blacks than previous studies.

The findings of a significant relationship between student academic achievement and fathers' occupations leads to the conclusion that, for this sample of 100 students from Knoxville City and Knox County schools, a student will succeed in school relative to his or her family's socio-economic status. There were some very low and very high scores from all three schools in the sample, and the socio-economic status of the neighborhoods in which the schools are located show extreme differences.

The finding of a significant relationship between students' self-concept and academic achievement leads to the conclusion that whatever the student's opinion of his or her academic ability, this opinion is related to his or her actual academic ability.

One school in the sample, school C is located in a neighborhood in which the mean family income is $15,677.43. School A is housed in a

section of town in which the average family annual income is $8,305.33. School B is located in a neighborhood where the mean family yearly income is $4,696.33. The racial composition of the schools is as follows:

School C	2 percent Black
School A	98 percent Black
School B	44 percent Black

There was a significant association between fathers' occupations and student achievement on the four subtests. Put another way, while being well off economically does not automatically confer genius--it does appear to be associated with higher scores on standardized tests.

V. DISCUSSION AND IMPLICATIONS

Discussion

In this study it was discovered that a significant relationship existed between student academic achievement and school social structure. There was an association between the percentage of Black students in the student body and student academic achievement on math. The relationship between the percentage of Black students in the student body and students' fathers' occupations was significant. The finding of a significant relationship between fathers' occupations and student academic achievement reaffirms the previous analysis in that the percentage of Black Students in the student body is significantly

associated with the students' academic achievement and socio-economic status.

As stated at the outset, this study was not designed to settle the controversy over the purpose of education and whether educational attainment bridges the gap between the poor and the rich. It is obvious that all holders of advanced degrees do not enjoy high socio-economic rank and that all holders of wealth do not hold advanced degrees. What is rather noteworthy, however, is the finding that low socio-economic status students were unable to compete successfully with middle and high socio-economic status school children and teenagers. While it could be argued that wealth does not make one smarter, it is obvious that it makes the learning experience more comfortable.

Implications

1. The consistent tendency of low socio-economic class and Black students to perform less well in school than the children of middle and upper socio-economic status parents , calls for attention and explanation.

2. The concept of under-achievement presents a considerable range of problems, since there is no way of measuring potential as distinct from actual ability. Studies of environmental factors in student academic achievement usually operate on the basis of the discrepancy, which is demonstratable, between achievement and ability as measured by tests such as the Basic Skills Test.

3. There is no doubt that achievement tests are probably the best way of estimating potentiality, but in so far as they are not themselves free from the effects of environment they cannot be said to be true measures of potentiality.

VI. RECOMMENDATIONS

This study presented more questions than answers. The findings, conclusions, and implications presented in the study suggest recommendations for further research.

1. This writer believes the SSCQ to be a valuable research tool and recommends that it continues to be employed in a variety of educational settings. However, much more attention needs to be paid to what actually happens inside schools on a practical daily basis--in classrooms, in testing encounters, at recess, in teachers' lounges--and the conditions that exist in the neighborhoods from which the students come.

2. There is a need for a solid foundation of evidence based on examinations of the actual processes of education. There is a need to show how such variables as teacher-student ratios, classroom size, teaching styles, social class, ethnicity, and teachers' attitudes influence student academic achievement.

3. It is felt that future research with the SSCQ should involve the use of teacher and principal questionnaires in addition to the student questionnaires this study employed so as to obtain a more broader perspective on the school social system.

4. Finally, the use of the term occupation can be somewhat misleading. Occupation is not synonymous with class. It is not the economic basis of classes. Occupation and class are related, but still they are independent concepts at their roots. The relation of the two can be studied and understood only after recognizing this independence. Some men do not work but they are yet independently wealthy, while other men who do not work are dependent on society for their subsistence. The two, although sharers of the same occupational category, are none-the-less members of different classes.

BIBLIOGRAHPY

BIBLIOGRAPHY

Barr, W. Monford. American Public School Finance. New York: Houghton Mifflin Company, 1916.

Benson, Charles S. Education Finance in the Coming Decade. Bloomington: Phi Delta Kappa, Inc., 1975

Blau, Peter M. and Otis Dudley Duncan. The American Occupational Structure. New York: John Wiley & Sons, Inc., 1967.

Bowles, Samuel and Henry Levin. "The Determinants of Scholastic Achievement--An Appraisal of Some Recent Evidence." The Journal of Human Resources. 3:10, Winter, 1968.

Brazziel, William F. Quality Education for All Americans. Washington, D.C.: Howard University Press, 1974.

Brookover, Wilbur. School Social Systems and Student Achievement:Schools Can Make A Difference. New York: J. F. Bergin
Publishers, Inc., 1979.

Brown, Harold M. "Race and Status in School Spending: Chicago 1961-1966." The Journal of Human Resources. 6:4, Winter, 1971.

Burrup, Percy E. Financing Education in a Climate of Change. Boston: Allyn and Bacon, Inc., 1977.

Champion, Dean J. Basic Statistics for Social Research. Scranton: Chandler Publishing Company, 1970.

Cohn, Elchanan, Stephen D. Millman, and It-Keong Chew. Input-Output Analysis in Public Education. Cambridge: Ballinger Publishing Company, 1975.

Coleman, James S. "Responsibility of the Schools: A Sociologist's Perspective." Education for Whom? by Charles A. Tesconic, Jr. and Emanuel Hurwitz, Jr. New York: Dodd, Mead and Company, 1974.

Coleman, James S. "Equality of Educational Opportunity: Reply to Bowles and Levin." The Journal of Human Resources. 3:246, Spring, 1968.

Coleman, James S. Equality of Educational Opportunity. Washington, D.C.: U. S. Office Of Education, 1966.

Cubberly, Ellwood P. Public School Administration. New York: Houghton Mifflin Company, 1916.

Davis, Allison and John Dollard. Children of Bondage. Washington: D.C.: American Council on Education, 1940.

Davis, Allison and John Dollard. Quoted in Social Class Background of 8th Grade Pupils, Social Class Composition of their Schools, their Academic Aspirations and School Adjustment by Paul Wallin and Leslie C. Waldo. Stanford: Sociology Department, Stanford University, 1964.

Dubridge, Lee. "Education is Good Business." Quoted in Financing Education in a Climate of Change by Percy E. Burrup. Boston: Allyn and Bacon, Inc., 1977.

Hanushek, Eric A. "Conceptual and Emirical Issues in the Estimation of Educational Production Functions." The Journal of Human Resources. 14:354, Summer, 1979.

Hanushek, Eric A. Education and Race, An Analysis of the Educational Production Process. Lexington: D. C. Heath & Company, 1972.

Herriot, Robert E. and Nancy Hoyt St. John. Social Class and the Urban School. New York: John Wiley & Sons, Inc., 1966.

Hollingshead, August B. Elmtown's Youth and Elmtown Revisited. New York: John Wiley & Sons, Inc., 1949, 1975.

Jencks, Christopher. "Education: The Racial Gap." The New Republic. 155:21, October, 1966.

Katzman, Martin T. "Distribution and Production in a Big City Elementary School System." Yale Economic Essays. 8:202-203, Spring, 1968.

Knox County Schools. Fall 1980 Elementary and Secondary School Civil Rights Survey, Individual School Report: Form AS/CR 102 and School Summary Report: Form AS/CR 101. Knoxville, Tennessee.

Knoxville/Knox County Metropolitan Planning Commission. Poverty. 1975.

Levin, Henry M. "A Cost-Effectiveness Analysis of Teacher Selection." The Journal of Human Resources. 5:25-28, Winter, 1970.

Mandel, Allan S. Resource Distribution Inside School Districts. London: Lexington Books, 1975.

Marshall, Thomas M. A. Aristotle's Theory of Conduct. London: T. Fisher UNWIN I Adelphi Terrace. MCMVI, 1905.

Michelson, Stephen. "Equal School Resource Allocation." The Journal of Human Resources. 7:283-284.

National Science Foundation. "How the U. S. Compares with Other Countries." Educational Leadership. 38:368, February, 1972.

Owen, John D. "The Distribution of Education Resources in Large American Cities." The Journal of Human Resources. 7:28, Winter, 1972.

Pupil Personnel Department Monthly Attendance Report. Period Ending 06-05-81. Knoxville City Schools, Knoxville, Tennessee.

Ravitch, Diane. "The Meaning of the New Coleman Report." Phi Delta Kappan. 62:179, June, 1981.

Sewell, William H. and Robert M. Hauser. Education, Occupation, and Earnings: Achievement in the Early Career. London: Academic Press, 1975.

Williams, Frederick. Reasoning with Statistics. New York: Holt Rinehart and Winston, 1979.

APPENDIXES

APPENDIX A

(Revised)

Questionnaires

STUDENT QUESTIONNAIRE

School Social Climate Study

a b c

sponsored by
Michigan State University

Dr. Wilbur Brookover, Project Director

DIRECTIONS: **We are trying to learn more about students and their work in schools. We would, therefore, like for you to respond to the following questions. This is not a test of any sort and will not affect your work in school. Your teacher and your principal *will not* see your answers. There are no right or wrong answers; we simply want you to tell us your answer to each question.**

1. Name _____

PLEASE ANSWER THE FOLLOWING QUESTIONS BY CIRCLING THE NUMBER ON THE RIGHT OF YOUR BEST ANSWER TO THE QUESTION. PICK ONLY ONE ANSWER FOR EACH QUESTION!!!

2. How old were you on your last birthday?

9 years old — 1.
10 years old — 2.
11 years old — 3.
12 years old — 4.
13 years old — 5.

3. Are you a boy or girl?

boy — 1.
girl — 2.

4. What grade are you in?

3rd grade — 1.
4th grade — 2.
5th grade — 3.
6th grade — 4.
7th grade — 5.

5. Please write your teacher's name.

_____

6. Please write the name of your school.

_____

7. How many years have you been at this school?

Less than 1 year—1.
2 years — 2.
3 years — 3.
4 years — 4.
5 years — 5.
6 years — 6.
7 years or more — 7.

8. What type of work does your father do? (Give a short description of his job.)

_____

_____

_____

_____

THE FOLLOWING QUESTIONS ARE TO BE ANSWERED BY CIRCLING THE NUMBER ON THE RIGHT OF THE CORRECT ANSWER. REMEMBER, NO ONE WILL SEE YOUR ANSWERS EXCEPT THOSE OF US FROM MICHIGAN STATE UNIVERSITY, SO PLEASE TELL US JUST WHAT YOU THINK. (Pick only one answer for each question.)

9. If you could go as far as you wanted in school, how far would you like to go?

Finish grade school — 1.
Go to high school for a while — 2.
Finish high school — 3.

Go to college for a while — 4.
Finish college — 5.

10. Sometimes what you *want* to happen is not what you *think* will happen. How far do you *think* you will go in school?

Finish grade school — 1.
Go to high school for a while — 2.
Finish high school — 3.
Go to college for a while — 4.
Finish college — 5.

11. How many students in this school try hard to get a good grade on their weekly tests?

Almost all of the students — 1.
Most of the students — 2.
Half of the students — 3.
Some of the students — 4.
Almost none of the students — 5.

12. How many students in this school will work hard to get a better grade on the weekly tests than their friends do?

Almost all of the students — 1.
Most of the students — 2.
Half of the students — 3.
Some of the students — 4.
Almost none of the students — 5.

13. How many students in this school don't care if they get bad grades?

Almost all of the students — 1.
Most of the students — 2.
Half of the students — 3.
Some of the students — 4.
Almost none of the students — 5.

14. How many students in this school do more studying for weekly tests than they have to?

Almost all of the students — 1.
Most of the students — 2.
Half of the students — 3.
Some of the students — 4.
Almost none of the students — 5.

15. If most of the students here could go as far as they wanted in school, how far would they go?

3rd grade — 1.
4th grade — 2.
5th grade — 3.
6th grade — 4.
7th grade — 5.

5. Please write your teacher's name.

_____

6. Please write the name of your school.

_____

7. How many years have you been at this school?

Less than 1 year—1.
2 years — 2.
3 years — 3.
4 years — 4.
5 years — 5.
6 years — 6.
7 years or more — 7.

8. What type of work does your father do? (Give a short description of his job.)

_____

_____

_____

_____

THE FOLLOWING QUESTIONS ARE TO BE ANSWERED BY CIRCLING THE NUMBER ON THE RIGHT OF THE CORRECT ANSWER. REMEMBER, NO ONE WILL SEE YOUR ANSWERS EXCEPT THOSE OF US FROM MICHIGAN STATE UNIVERSITY, SO PLEASE TELL US JUST WHAT YOU THINK. (Pick only one answer for each question.)

9. If you could go as far as you wanted in school, how far would you like to go?

Finish grade school — 1.
Go to high school for a while — 2.
Finish high school — 3.

Go to college for a while — 4.
Finish college — 5.

10. Sometimes what you *want* to happen is not what you *think* will happen. How far do you *think* you will go in school?

Finish grade school — 1.
Go to high school for a while — 2.
Finish high school — 3.
Go to college for a while — 4.
Finish college — 5.

11. How many students in this school try hard to get a good grade on their weekly tests?

Almost all of the students — 1.
Most of the students — 2.
Half of the students — 3.
Some of the students — 4.
Almost none of the students — 5.

12. How many students in this school will work hard to get a better grade on the weekly tests than their friends do?

Almost all of the students — 1.
Most of the students — 2.
Half of the students — 3.
Some of the students — 4.
Almost none of the students — 5.

13. How many students in this school don't care if they get bad grades?

Almost all of the students — 1.
Most of the students — 2.
Half of the students — 3.
Some of the students — 4.
Almost none of the students — 5.

14. How many students in this school do more studying for weekly tests than they have to?

Almost all of the students — 1.
Most of the students — 2.
Half of the students — 3.
Some of the students — 4.
Almost none of the students — 5.

15. If most of the students here could go as far as they wanted in school, how far would they go?

Finish grade school — 1.
Go to high school for a while — 2.
Finish high school — 3.
Go to college for a while — 4.
Finish college — 5.

16. How important is it to you to be a good student?

Very important — 1.
Important — 2.
Somewhat important — 3.
Not very important — 4.
Not important at all — 5.

17. How important do most of the student in this *class* feel it is to do well in school work?

They feel it is very important — 1.
They feel it is important — 2.
They feel it is somewhat important — 3.
They feel it is not very important — 4.
They feel it is not important at all — 5.

18. How important do you think most of the students in this *school* feel it is to do well in school work?

They feel it is very important — 1.
They feel it is important — 2.
They feel it is somewhat important — 3.
They feel it is not very important — 4.
They feel it is not important at all — 5.

19. How many students in this *class* think reading is a fun thing to do and read even when they don't have to?

Almost all of the students — 1.
Most of the students — 2.
About half of the students — 3.
Some of the students — 4.
None of the students — 5.

20. How many students in this *school* make fun of or tease students who get real good grades?

Almost all of the students — 1.
Most of the students — 2.
About half of the students — 3.
Some of the students — 4.
None of the students — 5.

21. How many students don't do as well as they could do in school because they are afraid *other students* won't like them as much?

Almost all of the students — 1.
Most of the students — 2.
About half of the students — 3.
Some of the students — 4.
None of the students — 5.

REMEMBER, PLEASE ANSWER THE FOLLOWING QUESTIONS BY CIRCLING THE NUMBER WHICH BEST ANSWERS THE QUESTION FOR YOU. PICK ONLY ONE ANSWER FOR EACH QUESTION.

22. How many students don't do as well as they could do in school because they are afraid *their friends* won't like them as much?

Almost all of the students — 1.
Most of the students — 2.
About half of the students — 3.
Some of the students — 4.
None of the students — 5.

23. How many students in this school would study hard if their work wasn't graded by the teachers?

Almost all of the students — 1.
Most of the students — 2.
About half of the students — 3.
Some of the students — 4.
None of the students — 5.

24. People like me will not have much of a chance to do what we want to in life.

Strongly agree — 1.
Agree — 2.
Disagree — 3.
Strongly disagree — 4.

25. People like me will never do well in school even though we try hard.

Strongly agree — 1.
Agree — 2.
Disagree — 3.
Strongly disagree — 4.

26. I can do well in school if I work hard.

Strongly agree — 1.
Agree — 2.
Disagree — 3.
Strongly disagree — 4.

27. In this school, students like me don't have any luck.

Strongly agree — 1.
Agree — 2.
Disagree — 3.
Strongly disagree — 4.

28. You have to be lucky to get good grades in this school.

Strongly agree — 1.
Agree — 2.
Disagree — 3.
Strongly disagree — 4.

29. Think of your friends. Do you think you can do school work better, the same or poorer than your friends?

Better than all of them — 1.
Better than most of them — 2.
About the same — 3.
Poorer than most of them — 4.
Poorer than all of them — 5.

30. Think of the students in your class. Do you think you can do school work better, the same or poorer than the students in your class?

Better than all of them — 1.
Better than most of them — 2.
About the same — 3.
Poorer than most of them — 4.
Poorer than all of them — 5.

31. When you finish high school, do you think you will be one of the best students, about the same as most or below most of the students?

One of the best — 1.
Better than most of the students — 2.
Same as most of the students — 3.
Below most of the students — 4.
One of the worst — 5.

32. Do you think you could finish college?

Yes, for sure — 1.
Yes, probably — 2.
Maybe — 3.
No, probably not — 4.
No, for sure — 5.

33. If you went to college, do you think you would be one of the best students, same as most or below most of the students?

One of the best — 1.
Better than most of the students — 2.
Same as most of the students — 3.
Below most of the students — 4.
One of the worst — 5.

34. If you want to be a doctor or a teacher, you need more than four years of college. Do you think you could do that?

Yes, for sure — 1.
Yes, probably — 2.
Maybe — 3.
No, probably not — 4.
No, for sure — 5.

35. Forget how your teachers mark your work. How good do you think your own work is?

Excellent — 1.
Good — 2.
Same as most of the students — 3.
Below most of the students — 4.
Poor — 5.

36. What kind of grades do you think you really can get if you try?

Mostly A's — 1.
Mostly B's — 2.
Mostly C's — 3.
Mostly D's — 4.
Mostly E's — 5.

37. How far do you think your best friend believes you will go in school?

Finish grade school — 1.
Go to high school for a while — 2.
Finish high school — 3.
Go to college for a while — 4.
Finish college — 5.

38. How far do you think your best friend believes you will go in school?

Finish grade school — 1.
Go to high school for a while — 2.
Finish high school — 3.
Go to college for a while — 4.
Finish college — 5.

NOW WE WOULD LIKE TO ASK SOME QUESTIONS ABOUT THE TEACHERS IN THIS SCHOOL. ANSWER THESE QUESTIONS AS YOU ANSWERED THE OTHER ONES BY CIRCLING THE NUMBER. REMEMBER, NO TEACHER WILL SEE YOUR ANSWERS, SO BE AS HONEST AS YOU CAN.

39. Of the teachers that you know in this school, how many tell students to try hard to do better on tests?

Almost all of the teachers — 1.
Most of the teachers — 2.
Half of the teachers — 3.
Some of the teachers — 4.
Almost none of the teachers — 5.

40. How many teachers in this school tell students to try and get better grades than their classmates?

Almost all of the teachers — 1.
Most of the teachers — 2.
Half of the teachers — 3.
Some of the teachers — 4.
Almost none of the teachers — 5.

41. Of the teachers that you know in this school, how many don't care if the students get bad grades?

Almost all of the teachers — 1.
Most of the teachers — 2.
Half of the teachers — 3.
Some of the teachers — 4.
Almost none of the teachers — 5.

42. Of the teachers that you know in this school, how many tell students to do extra work so that they can get better grades?

Almost all of the teachers — 1.
Most of the teachers — 2.
Half of the teachers — 3.
Some of the teachers — 4.
Almost none of the teachers — 5.

43. Of the teachers that you know in this school, how many make the students work too hard?

Almost all of the teachers — 1.
Most of the teachers — 2.
Half of the teachers — 3.

Some of the teachers — 4.
Almost none of the teachers — 5.

44. Of the teachers that you know in this school, how many don't care how hard the student works, as long as he passes?

Almost all of the teachers — 1.
Most of the teachers — 2.
Half of the teachers — 3.
Some of the teachers — 4.
Almost none of the teachers — 5.

45. How far do you think *the teacher you like the best* believes you will go in school?

Finish grade school — 1.
Go to high school for a while — 2.
Finish high school — 3.
Go to college for a while — 4.
Finish college — 5.

46. How good of a student does *the teacher you like the best* expect you to be in school?

One of the best — 1.
Better than most of the students — 2.
Same as most of the students — 3.
Not as good as most of the students — 4.
One of the worst — 5.

47. Think of your teacher. Would your teacher say you can do school work better, the same or poorer than other people your age?

Better than all of them — 1.
Better than most of them — 2.
Same as most of them — 3.
Poorer than most of them — 4.
Poorer than all of them — 5.

48. Would your teacher say that your grades would be with the best, same as most or below most of the students when you graduate from high school?

One of the best — 1.
Better than most of the students — 2.
Same as most of the students — 3.
Below most of the students — 4.
One of the worst — 5.

49. How often do teachers in this school try to help students who do badly on their

school work?

They always try to help — 1.
They usually try to help — 2.
They sometimes try to help — 3.
They seldom try to help — 4.
They never try to help — 5.

50. Compared to students in other schools, how much do students in this school learn?

They learn a lot more in this school — 1.
They learn a little more in this school — 2.
About the same as in other schools — 3.
They learn a little bit less in this school — 4.
They learn a lot less in this school — 5.

51. Compared to students from other schools, how well will most of the students from this school do in high school?

They will be among the best — 1.
They will do better than most — 2.
They will do about the same as most — 3.
They will do poorer than most — 4.
They will be among the worst — 5.

52. How important is it to teachers in this school that their students learn their school work?

It is the most important thing to the teachers — 1.
It is very important to the teachers — 2.
It is somewhat important to the teachers — 3.
It is not very important to the teachers — 4.
It is not important at all to the teachers — 5.

53. Think about the teachers you know in this school. Do you think the teachers in this school care more, or less, than teachers in other schools about whether or not their students learn their school work?

Teachers in this school care a lot more — 1.
Teachers in this school care a little more — 2.
There is no difference — 3.
Teachers in this school care a little less — 4.
Teachers in this school care a lot less — 5.

54. Does your teacher think you could finish college?

Yes, for sure — 1.
Yes, probably — 2.
Maybe — 3.

Probably not — 4.
No, for sure — 5.

55. Remember you need more than four years of college to be a teacher or doctor. Does your teacher think you could do that?

Yes, for sure — 1.
Yes, probably — 2.
Maybe — 3.
Probably not — 4.
No, for sure — 5.

NOW WE WOULD LIKE YOU TO ANSWER SOME QUESTIONS ABOUT YOUR PARENTS. ANSWER THEM THE SAME WAY YOU ANSWERED THE OTHER ONES.

56. How far do you think your parents believe you will go in school?

Finish grade school — 1.
Go to high school for a while — 2.
Finish high school — 3.
Go to college for a while — 4.
Finish college — 5.

57. How good of a student do your parents expect you to be in school?

One of the best — 1.
Better than most of the students — 2.
Same as most of the students — 3.
Not as good as most of the students — 4.
One of the worst — 5.

58. Think of your parents. Do your parents say you can do school work better, the same or poorer than your friends?

Better than all of them — 1.
Better than most of them — 2.
Same as most of them — 3.
Poorer than most of them — 4.
Poorer than all of them — 5.

59. Would your parents say that your grades would be with the best, same as most or below most of the students when you finish high school?

One of the best — 1.
Better than most of the students — 2.
Same as most of the students — 3.
Not as good as most of the students — 4.
One of the worst — 5.

60. Do your parents think you could finish college?

Yes, for sure — 1.
Yes, probably — 2.
Maybe — 3.
No, probably not — 4.
No, for sure — 5.

61. Remember, you need more than four years of college to be a teacher or doctor. Do your parents think you could do that?

Yes, for sure — 1.
Yes, probably — 2.
Maybe — 3.
No, probably not — 4.
No, for sure — 5.

READ EACH STATEMENT BELOW. CIRCLE THE NUMBER OF THE ANSWER THAT TELLS HOW OFTEN THE STATEMENT IS TRUE FOR YOU.

62. I can talk to other students while I work.

Always — 1.
Often — 2.
Sometimes — 3.
Seldom — 4.
Never — 5.

63. In class, I can move about the room without asking the teacher.

Always — 1.
Often — 2.
Sometimes — 3.
Seldom — 4.
Never — 5.

64. In class, I have the same seat and I must sit next to the same students.

Always — 1.
Often — 2.
Sometimes — 3.
Seldom — 4.
Never — 5.

65. When I am working on a lesson, the other students in my class are working on the same lesson.

Always — 1.
Often — 2.

Sometimes — 3.
Seldom — 4.
Never — 5.

66. In most of my classes, the teacher tells me what I must work on; I have no choice.

Always — 1.
Often — 2.
Sometimes — 3.
Seldom — 4.
Never — 5.

67. In class, the teacher stands in front of the room and works with the class as a whole.

Always — 1.
Often — 2.
Sometimes — 3.
Seldom — 4.
Never — 5.

68. If your teacher gave you a hard assignment, would you rather figure out how to do it by yourself or would you want your teacher to tell you how to do it?

I almost always prefer figuring it out for myself — 1.
I usually prefer figuring it out for myself — 2.
Sometimes I prefer figuring it out for myself — 3.
I usually like the teacher to tell me how to do it — 4.
I always like the teacher to tell me how to do it — 5.

69. When your teachers give you difficult assignments, do they usually give you too much help or not enough?

They almost always give too much help — 1.
They usually give too much help — 2.
They give just enough help — 3.
They usually don't give enough help — 4.
They almost never give enough help — 5.

70. Suppose you had some free time and wanted to do something fun but all your friends were busy and couldn't play with you. Do you think you could find something fun to do all by yourself?

Yes, it would be easy — 1.
Yes, if I tried hard — 2.
Maybe — 3.
No, probably not — 4.
No, it is never fun to be alone — 5.

APPENDIX B

LETTER REQUESTING CITY SUPERINTENDENT'S COOPERATION

May 6, 1981

Dr. James A. Newman, Superintendent
Knoxville City Schools
101 E. 5th Avenue
Knoxville, TN 37917

Dr. Newman,

I am convinced that you are well aware of the nation-wide interest in improving the quality of education and student achievement. As a student of education, my interest and concern lie along the same line. We need more research into these areas of concern.

For my study I would like to administer the School Social Climate Questionnaire, developed by Dr. Wilbur Bookover et al at Michigan State University in 1979.

I have delimited myself to a random sample of about one-third of the schools within your district. The results should give us some indication as to the different variables influening student achievement. Of course, the findings will be shared with you and other pertinent administrators and educators.

In order for the research project to be meaningful and successful I earnestly solicit your professional assistance.

Cordially,

Lonell Anderson

Lonell Anderson

LA:jj

APPENDIX C

LETTER REQUESTING COUNTY SUPERINTENDENT'S COOPERATION

May 6, 1981

Mr. Earl Hoffmeister
Knox County Schools
P.O. Box 2188
Knoxville, Tennessee 37915

Mr. Hoffmeister,

I am convinced that you are well aware of the nation-wide interest in improving the quality of education and student achievement. As a student of education, my interest and concern lie along the same line. We need more research into these areas of concern.

For my studv I would like to administer the School Social Climate Questionnaire, developed by Dr. Wilbur Brookover et al at Michigan State University in 1979.

I have delimited myself to one school within your district. The results should give us some indication as to the different variables influencing student achievement. Of course, the findings will be shared with you and other pertinent administrators and educators.

In order for the research project to be meaningful and successful I earnestly solicit your professional assistance.

Cordially,

Lonell Anderson

Lonell Anderson

LA:vw

APPENDIX D

PERMISSION TO USE THE SSCQ

The University of Tennessee
303 Henson Hall
615/974-6638

College of Educatic
Knoxville, Tennessee
37916

May 6, 1981

Permissions Department
J.F. Bergin Publishers, Inc.
65 South Oxford Street
Brooklyn, New York 11217

I am writing to obtain your permission to use the School Social Climate Study Questionnaires for my doctoral dissertation. The Questionnaire is in Appendix A of Dr. Wilbur Bookover, et al's book "Schools Social Systems and Student Achievement: Schools Can Make A Difference", Published in 1979 by Praeger Publishers.

Please advise me of any requirements that I must meet in order to obtain permission to use the School Social Climate Study in my research.

Yours Sincerely,

Lonell Anderson

Lonell Anderson
Candidate for the Ed.D.
Educational Administration
and Supervision

PERMISSION GRANTED: pending permission from Dr. Brookover
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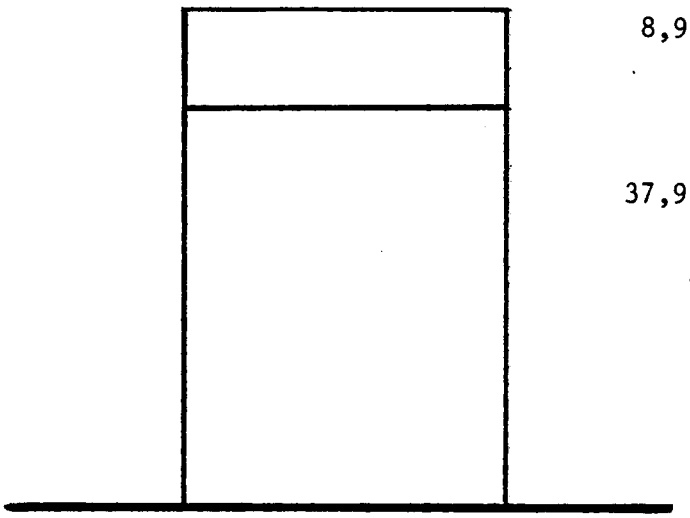
APPENDIX E

46,902 POOR PERSONS



APPENDIX F

THE POOR BY RACE

About 81% of the poor persons in Knox County are white. Blacks represent 8.6% of the population but compose 19% of the 46,902 poor persons. A Black person is 2½ times more likely to be poor than a white person, but there are more than four times as many white poor as Black poor.

RACE	TOTAL NUMBER	NUMBER IN POVERTY	PERCENT IN POVERTY
White & others	277,401	37,966	13.7
Black	25,978	8,936	34.4
	303,379	46,902	15.5

Median income, all families	$10,969
Median income, Black families	$ 6,536

1/20/76

VITA

Lonell Anderson, Jr. was born in Castleberry, Alabama on November 22, 1944. He attended elementary school in Pensacola, Florida and was graduated from Washington High School in June 1963. From January 1964 to January 1966 he attended Washington Junior College. After a two year tour of duty with the United States Army, he resumed his studies at Knoxville College, and in January 1971 he received a Bachelor of Arts degree in Psychology.

The author received the Master's of Science degree with a major in College Student Personnel from The University of Tennessee, Knoxville, in December 1978. He received the Doctor of Education degree with a major in Educational Administration and Supervision in March 1982.

The author is a member of Kappa Delta Pi. He is married to the former Vanessa Marie Wilson of Oxon Hill, Maryland.