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A Study of the Effect of School Socio-Economic Composition on Student Achievement

Van Kampen

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A STUDY OF THE EFFECT OF SCHOOL SOCIO-ECONOMIC
COMPOSITION ON STUDENT ACHIEVEMENT

by

Ruth Van Kampen

A Thesis
Submitted to the
Faculty of the School of Graduate
Studies in partial fulfillment
of the
Degree of Master of Arts

Western Michigan University
Kalamazoo, Michigan
April, 1970

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ACKNOWLEDGEMENTS

I would like to express my thanks to Professors Edsel Erickson, Lewis Walker and Donald Bouma for their helpful assistance with the writing of this thesis. Thanks also go to the many others of the staff of the Sociology Department at Western Michigan University for advice and encouragement; and to the Sociology Department and the University for the benefits of a scholarship.

Ruth Van Kampen
VAN KAMPEN, Ruth
A STUDY OF THE EFFECT OF SCHOOL SOCIO-ECONOMIC COMPOSITION ON STUDENT ACHIEVEMENT.

Western Michigan University, M.A., 1970
Sociology, general

University Microfilms, A XEROX Company, Ann Arbor, Michigan
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CHAPTER I

INTRODUCTION AND THEORETICAL BACKGROUND

Introduction

A current social problem of major concern is the plight of the disadvantaged student. Recently, especially since the declaration of war on poverty by the federal government, national attention has been focused upon the curing of this particular social illness, that is, the problem of unequal educational opportunity for American children.

The propagation of democratic principles and ideals historically has led many to adopt and cling to the belief that the American educational system provides equal opportunities for all of its citizens, whether they are from north or south, from city or farm, have black skin or white, are rich or poor. This belief, however, has been shown to be a myth, and is being replaced by a new awareness that due to different social conditions there have been and still are vast differences in American students' educational opportunities. With this knowledge also comes the realization that if different learning situations are produced by different social settings, student achievement levels can vary accordingly.

A growing recognition of the need to develop human resources in
fuller measure than has been done in the past, demands that researchers make a continuing effort to isolate crucial educational variables.

A current concern of many sociologists is with studies which entail both systemic and individual variables. Recent efforts relating the social class composition of the school to the performance of the participants in the school are illustrative of this concern and the focus of this study. Perhaps the relevancy of this study has been enhanced by current social problems interests.

Is it possible that the socio-economic status level of a school affects the academic achievement of students, when controlling for the socio-economic status of the individual subjects? That is the major research question of this study. In other words, are students from the lower class likely to perform at a higher level when they are in middle or upper-class schools? And, conversely, will middle or upper-class students perform at a lower level when they attend lower-class schools? Put another way, are the proportions of poor and more affluent students in a school a factor in the students' performance?

Theoretical Background and Related Literature

The following review of related research and theoretical literature is concerned with three areas. The first deals with
the theoretical issues and past research relating to the independent variable, the socio-economic composition level of the school; the second is a discussion of theoretical issues related to the dependent variable, academic achievement; and the third section is a presentation of theoretical assumptions concerning the relationship between school socio-economic composition and academic achievement.

School Socio-Economic Composition

Research to date in the area of social stratification has been primarily concerned with the assessment of individuals and families in order to set up and utilize stratification systems, and very little has been done by way of classification of social systems, institutions and sub-systems such as schools.¹

Relatively recent demographic shifts are bringing changes in the social class composition of large cities.² The migration into the older inner-city by lower-class families, and the emergence of many middle-class suburbs tends to increase social class segre-


²loc. cit., p. 12.
gation in and near these large cities. This trend brings a corresponding change in many schools, creating greater homogeneity of social class within many schools and greater stratification between schools. Havighurst has noted this phenomena by calling attention to a decreasing percentage of "mixed-class schools" and an increasing percentage of either lower or middle-class schools. As stated previously, a few recent studies have begun to use social class composition of the school as a contextual and conditional variable, viewing the school as a social system, categorizing it according to social class composition and determining the effects of this composition on certain collective behaviors of the members of the system. Gross identifies the social class composition of urban schools as an important area in need of intensive sociological study.

Of the few studies done in this area, major contributions have been made by Gross and Herriott (1965), Herriott and St. John (1966), Coleman (1966), and Wilson (1963).

By classifying schools according to the principal's estimates

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1 *ibid.*

2 *loc. cit., p. 24-25.*

of family income, Gross and Herriott\textsuperscript{1} found that in 152 schools in 39 cities, the greater the percentage of students within a school whose fathers' incomes were over $5000, the smaller the percentage of students who averaged one or more years behind grade level in reading ability in that school.

Herriott and St. John\textsuperscript{2} assessed the social class "composition" or "mix" of approximately 500 urban schools to examine the inter-relationships of teachers and principals and their views of pupils and parents. Principal's estimates of student home characteristics regarding income, education and occupation were combined to compute a school socio-economic status score for each school.

This research also examined certain parental, teacher and pupil attitudes and behavior which were found in previous studies to be highly correlated with students' socio-economic status. They found that in low social class schools 43% of the pupils were retarded one or more years in reading ability as compared to 10% in schools of highest social class; that teacher morale was lower in schools of lower social class, indicating that pupils in these

\textsuperscript{1}Gross, Neal, Herriott, Robert E., \textit{Staff Leadership in the Public Schools}. New York: John Wiley & Sons, Inc., 1965, p. 43.

schools have less contented teachers; and that teaching performance, teaching methods and the maintenance of discipline was somewhat poorer in schools of lowest social class. Significant differences in indices of home stability and parental support of the school were found between schools of highest and lowest social class. For example, the percentage of parents who were interested in the school work of their children was smaller in schools of lower social class.¹

The authors summarize their findings with the following statement:

A very large percentage of a long list of characteristics were found to vary significantly, and, for the most part, monotonically by school social class, and the direction of the variation is without exception to the disadvantage of pupils in schools of low social class.²

In a study commissioned by the United States Department of Health, Education and Welfare, carried out by Coleman, et al.,³ it was found that school characteristics have an effect on student achievement. In this study the average minority pupil's achievement was found to be more affected by the particular school he

¹loc. cit., pp. 204-207.
²ibid.
attended than the average white student's, indicating also that school characteristics affect different students' achievement levels in different degrees.

In a related study, Wilson¹ found that in addition to the social class of the home, the social class climate of the school apparently affects academic achievement and occupational aspirations. Wilson showed that there was gross retardation among elementary pupils in depressed areas, and that certain social processes within the school were found to reinforce and sustain different levels of achievement.

Accordingly, the present study is an attempt to determine the effect of the social class level of the school on student achievement, while controlling for the individual socio-economic status of the students.

In this study the school is viewed as a sub-system within the larger social structure. Characteristics of such sub-systems may be acquired from two main sources: (1) from the characteristics of the individuals who make up its staff and student body, and (2) from such factors as the type of neighborhood and community in which it is located. This study uses the student body

as a source for the measurement of the characteristic of school social class.

Indicators of social class for this study are based on the classic work by Warner which identifies the following six variables as correlative to the measurement of social class, when compared with the ratings of local judges: occupation, amount of income, house type, dwelling area and level of education. Of these six, occupation, education and income have become traditionally accepted as the three major properties of social class.

Blalock and Blalock make statements about the validity of these indicators as follows:

We may argue that education and income are adequate predictors of occupational prestige, since they reflect the training required and the rewards supplied by an occupation... Several writers on social stratification have concluded on quite different bases that occupation is the rank system which is the best representative of social status.

Work begun by the National Opinion Research Center and greatly extended by Duncan provides some empirical justifica-


tion for an unidimensional prestige ranking of occupations, and occupation has become a widely used indicant of the social status level of individuals.

In the present study the socio-economic status of a school is based on the proportions of students in that school with high, medium, and low social status rankings. As an indicator for the measurement of the variable of students' socio-economic status, Duncan's Socio-Economic Status (SES) scale was used. With this scale students were assigned social status rank on the basis of their father's occupation.

**Academic Achievement**

Traditionally, academic performance level has been viewed largely as a function of intelligence, which in turn was assumed to be an inherited and organically fixed capacity to learn. Whether or not learning ability is to some degree fixed is not an objective of this research. Recent research, however, reports findings which show that socio-cultural environments play an important part in effecting the learning levels of students. Studies have been conducted to test the general proposition that student interaction with others in the socio-cultural environment accounts for

---

much of the variation in learning to read, write and make mathematical computations.¹

The term academic achievement, as commonly used, may be defined as "some measure of the level of scholastic work of a student."² Performance has traditionally been translated into a convenient symbol which can readily be used to evaluate students. These symbols generally take the form of verbal ratings, such as excellent, fair, poor; numerical values or alphabetical letters.

Several problems arise in the attempts by researchers to measure performance. Lavin³ places these problems into three main categories. The first is uncontrolled sources of variation in the grades themselves, involving, for example, the fact that some students take more difficult courses than others. A second is the variation in criteria of different teachers. The use of essay tests, objective tests and oral discussion, and the values assigned each of these types of participation, for instance, creates considerable variation in the basis upon which a student is graded, and thus in the grades themselves. Third, Lavin states that

²loc. cit., p. 18.

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grades are also a function of student-teacher relationships, and the subjectivity of teachers contributes a third major source of variation.

The first mentioned source of variation, that of students taking different courses, is less difficult to deal with methodologically than the other two, since information about which courses students are enrolled in is available from school records.

The uses of different criteria in grading and the subjectivity of teacher attitudes are less easily defined and measured. Teaching methods vary according to a diverse assortment of philosophies of teaching. The kinds of testing procedures used by a teacher also vary widely. The types of tests used by an individual teacher and differential ratings of different types of tests are largely a matter of the teacher's individual decisions.

Teacher-student relationships may be said to vary as teacher and student characteristics vary. Male teachers' attitudes toward female students may be different than their attitudes toward male students; the converse may also be true. Good students may be looked upon more favorably by teachers than students who do less well academically. Middle-class teachers having in common certain background factors with middle-class students tend to create a bond of identity and agreement which is not necessarily present across social class lines. A shared interest in a particular
academic area of study between teacher and student may also influence the teacher's attitude toward certain students.

The above-described factors are examples of the kinds of individual situations which provide a variety of student-teacher relationships. It is not illogical to assume that these relationships are reflected in the grades given to students by teachers, nor that grades are to some extent a measure of the teachers' evaluations of students rather than of actual student performance.

In other words, though a normally distributed range of grades is found within a school, these grades may be in part an expression and reflection of student-teacher relationships and not an accurate measure of student performance.

In order to avoid, insofar as it is possible to do so, using a measure of academic achievement which would reflect the student-teacher relationship, this study uses students' scores on standardized tests. Inasmuch as reading skill is generally considered to be the most relevant skill taught in a school, in that other skills often depend on reading ability, it was decided that a standardized test of reading achievement should be employed as a measure of our main dependent variable, academic achievement.

As one of the exploratory questions, however, this study did use the grade-point average of a student's school grades for certain subjects taken in the tenth grade to measure teachers'
evaluations of students' performance. This allows for the observation of a comparable distribution of performance by schools without using it as the major operational variable.

Relationship Between School Socio-Economic Composition and Academic Achievement

Theoretically there are several ways in which the social class level of the school may affect the academic performance of the student within that school. This section draws on the work of McPartland¹ for its theoretical alternatives. The three situational factors which will be presented here as theoretical alternatives are: (1) social stigma, (2) student environment, and (3) relative standing in class.

Social Stigma

One basic theoretical assumption of this study is that society's expectations of individuals are dependent upon the categorizing of the person as a member of a social category, such as woman, teacher, Negro, farmer, etc. This assumption is upheld by the work of Goffman.² Persons may be categorized on the basis of personal cues or social cues. Personal cues refer to

¹McPartland, James, The Segregated Student in Desegregated Schools: Sources of Influence on Negro Secondary Students. Baltimore, Maryland: Johns Hopkins University, 1968.

characteristics such as skin color, eye shape, hair form or the person's behavior. Examples of social cues could be place of employment, area of residence or school attended.

This study also draws upon Goffman's concept of "stigma," which he defines as "an attribute that is deeply discrediting."¹ Once a person has been categorized, society's expectations for that category can be held for him as an individual. If a particular category is believed by society to carry a stigma, this stigmatization may be said to apply to the individuals in that category. This study holds that the community's expectations for the school will also be held for the students as members of the system. The argument is that lower class schools are "stigmatized" by society as inferior, and that students in a lower class school will be aware of an unfavorable attitude with which the community views their school. Awareness of this community stigmatization will have a depressing effect on the students' own opinion of the quality of his school, on his expectations for results which the school is able to produce, and consequently on his expectations for himself as a member of that system.

Reasons that a school may be judged inadequate by a community include such things as physical appearance of the plant

¹ loc. cit., p. 3.
and facilities, past record of accomplishment as compared with others in the total school system, quality of instructional program and staff, social class level of the families of the student body, or of the neighborhood in which it is located or which it serves.

Social stigma, then, is one situational factor which may serve to differentiate community and student attitudes toward schools, and subsequently to affect student performance.

Student Environment

Another factor which influences student behavior is the student environment within the school.

By student environment is meant the standards, norms and values set by the students to influence behavior in their school. A growing literature of careful research has demonstrated that schools can differ widely in the interests and standards adopted by the student body and that individual students are strongly influenced by the characteristics and viewpoints of their fellow students.¹

McPartland² discusses three major ways in which the standards, norms and values of one's fellow students can affect the students' academic growth, all of which are relevant to this study.

First, the standards set by students provide a model for individuals in the school. The peer group at the secondary level is believed to constitute an important reference group, and rewards

¹McPartland, op. cit., p. 55.

²loc. cit., p. 56.
for adopting the norms of this group are strong and highly valued. Secondly, learning may be a result of stimulation provided by students who are energetic and highly qualified. Third, teachers may direct their level of instruction to the general level of student development in their classes.

These three effects of student environment may be manifested in lower class schools in a negative way and thereby affect student performance negatively. If standards are set by students who are neither highly qualified nor high achievers, and if teachers gear the instructional level and the rate of exposure to materials to this general level of student development, the overall effect will be to lower the rate of achievement of the students.

Relative Standing in Class

The previous discussion of the influence of the characteristics of fellow students on academic performance assumed the function of the student reference group to be normative, as a source of reinforcers of standards. Student reference groups may also provide a comparison function, acting as a comparison point against which the person can evaluate himself and others.¹ This theoretical assumption regarding the function of the reference group

elaborates the ideal that students will use their relative achievement level in their own school as a criteria for evaluating their own ability, rather than using some absolute standard which would take into account school differences.

Kelly's theoretical framework contributes to the assumptions of this study that the school serves as a frame of reference for the student by providing a "point of comparison" for the evaluation of his own academic performance, and therefore that certain characteristics of the school, such as social class level, will affect students' academic performance.

Purpose

This study is primarily concerned with the isolated effect of one aspect of the social milieu upon student achievement. That aspect, a system variable, is the socio-economic composition of the school.

In terms of sheer quantity of research, the variable most studied in relation to student achievement has been the students' individual socio-economic status. Measures of student academic behavior have been consistently found to be correlated with the

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1 ibid.

2 Lavin, op. cit., p. 123.
socio-economic status of the particular student. However, other variables may also be operating to affect achievement. Only recently have a few studies been done that center upon the socio-economic composition of the school as a factor affecting the achievement of students.

Major Research Objectives

This research views the school as a social sub-system, and the major research objective is to assess the effects of one systemic characteristic of this sub-system, its socio-economic composition, upon the academic behavior of the students as members of the sub-system. If school socio-economic composition is found here to have an impact on student achievement and these findings are confirmed in other research, there may be serious implications for schools as well as for social science theory. (See Chapter IV for Implications.)

General Hypothesis

The main hypothesis of this study is that the academic achievement levels of students vary positively and systematically with the socio-economic composition level of the school when individual socio-economic status is controlled.

\[ \text{loc. cit., p. 125.} \]
In order to test this hypothesis, data were analyzed once for lower socio-economic students in lower and middle-upper socio-economic composition level schools; for middle-socio-economic status students in lower and middle-upper socio-economic composition level schools; and for upper socio-economic status students in lower and middle-upper socio-economic composition level schools.

**Exploratory Questions**

In addition to the basic objectives of this study, the availability of data allows the asking of several exploratory questions relevant to the effect of the socio-economic composition of the school on: (a) teacher evaluations of student performance, (b) student occupational aspirations, (c) student occupational plans, (d) student educational aspirations, and (e) student educational plans.

The data will be analyzed once for lower socio-economic status students in lower and middle-upper socio-economic composition level schools; once for middle socio-economic status students in lower and middle-upper socio-economic composition schools, and once for upper socio-economic status students in lower and middle-upper socio-economic composition level schools.

The exploratory questions of this study are as follows:

1. Does the socio-economic composition level of the school influence teachers' evaluations of student performance when controlling for the effect of students' individual socio-economic status?
2. Does the socio-economic composition level of the school influence students' occupational aspirations and plans when the students' individual socio-economic status is controlled?

3. Does the socio-economic composition level of the school influence students' educational aspirations and plans when controlling for the effect of students' individual socio-economic status?

Answers to the above questions also make it possible to ask comparative questions about these variables:

4. What is the relative contribution of school socio-economic composition level to students' academic performance in comparison to the effect on students' aspirations and plans?

5. Do students' achievement levels, as measured by standardized tests, and teachers' evaluations of student performance, as measured by students' grades, both show the same kind of relationship to socio-economic composition of school?

As previously stated (see Related Research section), it is held by this study that teachers' evaluations of student performance, as measured by students' grades, are likely to be a reflection of student-teacher relationships, rather than a clear indication of achievement in school. The efficacy of the effect of school socio-economic composition level, using student grades rather than achievement test scores as the dependent variable will be examined by exploratory question number 5.
Summary

This study is based on the previously elaborated assumptions that the three situational factors, social stigma, student environment and relative standing in class, because of their association with the socio-economic composition of schools, result in the association of the socio-economic composition of schools with academic achievement levels of students.

The remaining chapters are addressed to the collection and analysis of data, testing operational hypotheses of the following general hypothesis:

The academic achievement levels of students vary positively and systematically with the socio-economic composition level of the school when individual socio-economic status is controlled.

The main exploratory questions concern the impact of socio-economic composition of the school on (1) teacher evaluations, (2) students' occupational plans and aspirations, and (3) students' educational plans and aspirations. Also examined is the relative impact of school composition on student performance in contrast to student aspirations and plans, and students' actual performance in contrast to student aspirations and plans.
CHAPTER II
RESEARCH DESIGN AND METHODOLOGY

This chapter includes a description of the site and of the popu-
lation discussion of instrumentation, and a description of the data
collection techniques and methods of analysis used in this study.

Data for this study were gathered in a mid-western city.¹ According to the United States Census of 1960 the total population for this city was 177,313. At the time the data was drawn there were approximately 34,000 pupils and 1500 professional educators in the school system which serves all grade levels from kinder-
garten through a two-year junior college.

The population studied consisted of all the secondary students from four out of five public high schools in the above described city whose birthdays fell between May 1, 1949 and November 1, 1949.² The school records were used to identify those students

¹Data used in this study were originally collected as a part of a series of student socio-economic status studies by the Center for Sociological Research at Western Michigan University under the direction of Edsel L. Erickson.

²There are five public high schools in this city; however, funds were not available to complete the study. The fifth high school is considered by the researchers to be similar enough to two of the other schools observed so that its inclusion would not greatly alter the findings.
whose birthdays fell between these dates. All of the respondents were 16 years of age at the time the data were collected.\(^1\) Since all age cohorts could not be studied, it was arbitrarily decided to take this age group for the initial pilot study.

The total number of students on whom data were collected was 462. Of this number, counselors identified 384 as white, 77 as black, and 1 as Mexican-American.

Data for this study were gathered from school records and questionnaires. Students assembled in rooms other than their classrooms and the questionnaires were administered by trained researchers during one class period in the spring of 1965.

The major independent variable of this study is the socio-economic composition of the school. Postulating (as previously stated — see Chapter I) that the school can acquire characteristics from the characteristics of individual students as members of the sub-system, the SEC level of each of the four secondary schools was assessed through the use of information given by the student regarding either his father's occupation, or the occupation of whoever supported the family. Students were asked to respond to the items, "What does your father (or whoever supports your family) do for a living?" and

\(^1\) Students who were absent from school at the time the data was collected and those who did not return to the school system for the 1965-1966 school year were not included in this study.
"Describe what your father (or whoever supports your family) does on the job." This information was assigned socio-economic ratings from 1 (the lowest) to 99 (the highest) according to the widely used Duncan Socio-Economic Index for all occupations. Students whose fathers' occupations rated from 1 through 32 were categorized as lower class; examples of these include yarn, thread and fabric mill workers at 1, and boilermakers, tinsmiths and sheet metal workers at 33. Occupations rated from 34 through 66 were categorized as middle class; examples of these include plumbers, steamfitters, structural metal workers and street and subway motormen at 34 and public administrators and public officials, insurance agents and brokers at 66. Occupations rated from 67 through 99 were categorized as upper class; examples include recreation and group workers, artists and art teachers at 67 and professionals such as lawyers, judges and dentists at 99.

Schools #2, #3 and #4 were found to be composed of 50% or more lower SES students. Data from these schools were combined and analyzed in order to observe characteristics of students in lower SEC schools. School #1 was found to be composed of over 50% upper and middle-class students. Data from this school were

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analyzed in order to observe characteristics of students in upper-middle SEC level schools, as shown in Table 2.1.

**TABLE 2.1**

**PERCENT OF STUDENTS IN LOWER AND MIDDLE-UPPER SES IN EACH SCHOOL**

<table>
<thead>
<tr>
<th>School</th>
<th>% Lower SES</th>
<th>% Middle-Upper SES</th>
</tr>
</thead>
<tbody>
<tr>
<td>#1</td>
<td>28% (43)</td>
<td>72% (111)</td>
</tr>
<tr>
<td>#2</td>
<td>53% (49)</td>
<td>47% (43)</td>
</tr>
<tr>
<td>#3</td>
<td>53% (55)</td>
<td>47% (48)</td>
</tr>
<tr>
<td>#4</td>
<td>50% (56)</td>
<td>50% (57)</td>
</tr>
</tbody>
</table>

The major control variable in this study is the individual SES of the student. As previously stated (see Chapter 1) occupation as a summarizing variable has become a traditionally recognized indicator of socio-economic status. This study measured the socio-economic status of students through the use of the Duncan socio-economic status scale.\(^\text{1}\) (For a discussion of this scale see the paragraphs immediately preceding this one.)

The major dependent variable in this study is academic achieve-
ment. In order to obtain a more objective measure of students' academic achievement than grades assigned by teachers would yield, percentile ranks on the national norms on Iowa Tests of Educational Development (Test 5 - Ability to Interpret Reading Material in Social Studies) were obtained from the school records. These tests had been administered to the students previously, during the same semester that data for this research was gathered (Spring - 1965). This test measures the students' current ability to interpret and evaluate reading selections from the literature of social studies in general, including textbooks, references, and magazine and newspaper articles on social problems. Correlations of composite scores on the Iowa Test of Educational Development with measures of intelligence and aptitude range from .57 to .85. A split half reliability estimate for Test 5 was .90.

The order to measure teachers' evaluations of student performance, grade point averages for the following academic subjects were obtained: English, social studies, science, mathematics, foreign languages, speech and debate. Each student's average was based on the scale: A - 4, B - 3, C - 2, D - 1, E or F - 0.


2loc. cit., p. 23.
Data on students' occupational plans and aspirations and educational plans and aspirations was obtained through the use of questionnaires.

A distinction is made between the concepts of plans and aspirations. Plans are conceived to be the student's expectations of what he will attain or will have accomplished at a future date. The concept of aspirations refers to the student's desires or wishes with respect to what he will accomplish or attain.

Students' occupational aspirations refers to the students' responses to the following question:

If you were free to choose any job you wanted, what job would you most like to have when you grow up?

<table>
<thead>
<tr>
<th>Responses</th>
<th>Scored</th>
</tr>
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<tbody>
<tr>
<td>Professional, teacher, doctor, lawyer</td>
<td>9</td>
</tr>
<tr>
<td>big business</td>
<td></td>
</tr>
<tr>
<td>Small business and semi-professional</td>
<td>8</td>
</tr>
<tr>
<td>Clerical and sales</td>
<td>7</td>
</tr>
<tr>
<td>Skilled and semi-skilled labor</td>
<td>6</td>
</tr>
<tr>
<td>Service and farm, unskilled, gas station, truck driver</td>
<td>5</td>
</tr>
<tr>
<td>Housewife</td>
<td>4</td>
</tr>
</tbody>
</table>

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Students' occupational plans refers to student responses to the following question:

<table>
<thead>
<tr>
<th>Responses</th>
<th>Scored</th>
</tr>
</thead>
<tbody>
<tr>
<td>Professional, teacher, doctor, lawyer, big business</td>
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<td>7</td>
</tr>
<tr>
<td>Skilled and semi-skilled labor</td>
<td>6</td>
</tr>
<tr>
<td>Service and farm, unskilled, gas station, truck driver</td>
<td>5</td>
</tr>
<tr>
<td>Housewife</td>
<td>4</td>
</tr>
<tr>
<td>Glamour job, be famous</td>
<td>3</td>
</tr>
<tr>
<td>Quality of job, a good job, etc.</td>
<td>2</td>
</tr>
<tr>
<td>Don't know</td>
<td>1</td>
</tr>
</tbody>
</table>

Student educational aspirations are defined as that point in the educational system grade levels which a person desires to or would like to achieve but does not necessarily expect to reach.

Responses to the following question were used to obtain this data.

If you were free to go as far as you wanted in school, how far
would you like to go?

<table>
<thead>
<tr>
<th>Responses</th>
<th>Scores</th>
</tr>
</thead>
<tbody>
<tr>
<td>I'd like to quit right now</td>
<td>1</td>
</tr>
<tr>
<td>To attend high school for a while</td>
<td>2</td>
</tr>
<tr>
<td>To graduate from high school</td>
<td>3</td>
</tr>
<tr>
<td>To go to business school or technical school</td>
<td>4</td>
</tr>
<tr>
<td>To go to college for a while</td>
<td>5</td>
</tr>
<tr>
<td>To graduate from college</td>
<td>6</td>
</tr>
<tr>
<td>To do graduate work beyond college</td>
<td>7</td>
</tr>
</tbody>
</table>

Students' educational plans refers to responses obtained to the following question:

Sometimes what we would like to do isn't the same as what we expect to do. How far in school do you expect you really will go?

<table>
<thead>
<tr>
<th>Responses</th>
<th>Scored</th>
</tr>
</thead>
<tbody>
<tr>
<td>I'd like to quit right now</td>
<td>1</td>
</tr>
<tr>
<td>To attend high school for a while</td>
<td>2</td>
</tr>
<tr>
<td>To graduate from high school</td>
<td>3</td>
</tr>
<tr>
<td>To go to business school or technical school</td>
<td>4</td>
</tr>
<tr>
<td>To go to college for a while</td>
<td>5</td>
</tr>
<tr>
<td>To graduate from college</td>
<td>6</td>
</tr>
<tr>
<td>To do graduate work beyond college</td>
<td>7</td>
</tr>
</tbody>
</table>

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The information gathered from school records and questionnaires was coded for computer analysis by staff members at the Center for Sociological Research at Western Michigan University, in Kalamazoo, Michigan. The IBM 1620 at Western Michigan University was used to analyze the data.

In summary, through the use of questionnaires and school records, data were gathered in four secondary schools in a mid-western city in order to test the general hypothesis that socio-economic composition level of the school affects student achievement independently from student socio-economic status. Working hypotheses were constructed, data coded and analyzed by the IBM computer.
CHAPTER III

FINDINGS

Using the socio-economic status level of each of four secondary high schools in one mid-western city as the major independent variable, the attempt has been made in this study to assess the effects of this variable upon student achievement and other selected student characteristics, while controlling for individual socio-economic status.

The general hypothesis was as follows:

The academic achievement levels of students vary positively and systematically with the socio-economic composition level of the school when individual socio-economic status is controlled.

In order to test this hypothesis, data were analyzed for lower socio-economic status students in lower and middle-upper socio-economic composition level schools; for middle socio-economic status students in lower and middle-upper socio-economic composition level schools, and for upper socio-economic status students in lower and middle-upper socio-economic composition level schools.

As shown in Table 3.1 this hypothesis was supported in two out of three tests. Middle and upper socio-economic status students achieved at higher levels in middle-upper socio-economic status.
Table 3.1--Comparison of mean scores on standardized reading achievement tests of lower, middle and upper SES students in lower and middle-upper SEC level schools

<table>
<thead>
<tr>
<th>SES Level of Students</th>
<th>SEC Level of Schools</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Lower</td>
<td>Middle-upper</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>X</td>
<td>sd</td>
<td>N</td>
</tr>
<tr>
<td>Lower</td>
<td>159</td>
<td>42.65</td>
<td>28.54</td>
<td>43</td>
</tr>
<tr>
<td>Middle</td>
<td>119</td>
<td>47.49</td>
<td>27.65</td>
<td>68</td>
</tr>
<tr>
<td>Upper</td>
<td>28</td>
<td>54.07</td>
<td>21.91</td>
<td>48</td>
</tr>
</tbody>
</table>

*Significant beyond .05 level, one-tailed 't' test for uncorrelated data

composition level schools than they did in lower socio-economic composition level schools. While there was no significant difference in reading level between lower socio-economic status students by socio-economic composition level of school, it should be noted that the direction of observed difference was as predicted. This observed difference alone, however, provides insufficient evidence to conclude that lower socio-economic status students achieve less well in lower socio-economic composition level schools than do lower socio-economic status students in middle-upper socio-economic composition level schools. However, the direction of the observed difference as presented by this study supports research findings reported in Chapter I. Therefore, while our observations of reading-level averages of lower socio-economic status students...
in schools of lower socio-economic composition as reported were not different at the .05 level of significance, they should not be taken as definitive evidence for rejection of the relevance of socio-economic composition level of school for achievement of lower socio-economic status students.

In other words, while lower-class children in lower-class schools do not do significantly poorer than lower-class children in middle-upper class schools, findings are in the hypothesized direction.

As shown in Table 3.1, all subjects (i.e. lower, middle and upper-class children) did less well in lower-class schools.

As exploratory questions, the effect of the socio-economic composition level of the school upon certain other student variables was also examined. These student variables are teachers' evaluations of students' performance, as measured by students' grade point averages, students' occupational aspirations and plans, and students' educational aspirations and plans.

Question 1

Does the socio-economic composition level of the school influence teachers' evaluations of student performance independently from the effect of students' socio-economic status?

The data in Table 3.2 are in accordance with most research
Table 3.2--Comparison of mean scores of lower, middle and upper socio-economic status students in lower and middle-upper socio-economic composition schools.

<table>
<thead>
<tr>
<th>Socio-economic Status of Students</th>
<th>Lower</th>
<th>Middle</th>
<th>Upper</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lower N=159</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Middle N=43</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>'t'Lower N=119</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Middle N=63</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>'t'Upper N=28</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Upper N=48</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Socio-economic composition level of School</th>
<th>Lower</th>
<th>Middle</th>
<th>Upper</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lower N=159</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Middle N=43</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>'t'Lower N=119</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Middle N=63</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>'t'Upper N=28</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Upper N=48</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Teacher Evaluation:
Grade pt. average
1.76   1.91  .966ns  1.96  2.27  2.19*  2.25  2.48  .99ns

Occupation:
Aspirations
53.9   54.1  .043ns  57.0  60.0  .771ns  67.9  63.8  -.165ns

Plans
42.1   40.3  -.390ns  47.2  54.0  .293ns  58.5  58.6  .003ns

Education:
Aspirations
5.1    4.8   -1.14ns  5.6   5.7   .095ns  5.7   6.1   .441ns

Plans
4.7    4.4   -1.20ns  4.9   5.2   .249ns  5.4   5.9   .585ns

*Significant beyond .05 level, one-tailed 't' test for uncorrelated data.
on the relationship between the students' individual socio-economic status and the grades he receives in school. (See Chapter I) However, and in support of the basic hypothesis and data reported in Table 3.1, there are differences in grade point averages by socio-economic composition level of the school when controlling for socio-economic status of the students. That is, while differences are significant only for students of middle socio-economic status, lower, middle and upper socio-economic status students all tend to be awarded higher grades in middle-upper socio-economic composition level schools than they do respectively in lower socio-economic composition level schools.

Question 2

Does the socio-economic composition level of the school influence students' occupational aspirations and plans independently from the effect of students' socio-economic status?

Question 3

Does the socio-economic composition level of the school influence students' educational aspirations and plans independently from the effect of students' socio-economic status?

The data in Table 3.2 are also in accordance with most research done on the relationship between students' individual socio-
economic status and social-psychological characteristics. That is, findings show that students' socio-psychological perceptions of self tend to vary directly and monotonically with students' individual socio-economic status.¹

In the analysis of the effect of socio-economic composition level of the school upon certain social-psychological characteristics, while controlling for students' individual socio-economic status (Table 3.2), differences which would support the basic hypothesis of this study are not clearly observable. Only in the data for the students in the middle socio-economic status are there consistent differences in the social-psychological variables by socio-economic composition level of schools. Data for lower socio-economic status students and for upper socio-economic status students shows only slight differences or differences in the opposite direction from that of the basic hypothesis of this study.

Question 4

What is the relative contribution of school socio-economic composition level to students' academic performance in

comparison to its effect on students' aspirations and plans?

A comparison of the data concerning the effect of socio-economic composition level of the school on students' academic performance (Table 3.1) and on students' occupational and educational aspirations and plans (Table 3.2) leads to the tentative conclusion that socio-economic composition level of the school has a greater impact on academic achievement than it does on aspirations and plans. Findings regarding this exploratory question did not show any consistent pattern or trends in students' mean scores on tests of occupational and educational aspirations and plans by socio-economic composition level of school; the only consistent differences found in the hypothesized direction were in the scores of middle socio-economic status students.

Question 5

Do student achievement levels, as measured by standardized tests, and teachers' evaluations of student performance, as measured by students' grades, both show the same kind of relationship to socio-economic composition of schools?

The fact that the data concerning teachers' evaluations of student performance (Table 3.2) are in accordance with the data on their actual school performance levels (Table 3.1) suggests that grade point averages do reflect similar performance patterns and are not merely teachers' subjective notions about student perform-
However, the association between socio-economic composition of school and teachers' evaluations of students' performance (grade-point averages) is not as statistically definite as the association between socio-economic composition level of school and actual performance (reading level). This suggests that teachers' evaluations reflect something more than socio-economic status of student, socio-economic composition of school or actual performance level of student.
Summary

A current social problem of major concern is the plight of the disadvantaged student. Many social, demographic and ecological variables have been studied in an effort to isolate those which are relevant.

A review of literature related to this study shows that individual socio-economic status has been found to be correlated with students' academic behavior, and recent sociological research implies that characteristics of the school as a social system may also have an effect on student variables.

This study has undertaken to determine the effect of the social class composition of the school, as a sub-system, upon students' academic achievement levels as measured by reading skills, while controlling for the individual students' socio-economic status.

The general hypothesis guiding this study was that students in schools of higher socio-economic composition level would have higher achievement levels than students in schools of lower socio-economic composition levels, when controlling for the students' socio-economic status.
Available data allowed the asking of several exploratory questions, which are related to the central hypothesis. These questions were as follows:

1. Does the socio-economic composition level of the school influence teachers' evaluations of student performance independently from the effect of students' individual socio-economic status?

2. Does the socio-economic composition of the school influence students' occupational aspirations and plans independently from the effect of students' individual socio-economic status?

3. Does the socio-economic composition of the school influence students' educational aspirations and plans independently from the effect of students' individual socio-economic status?

4. What is the relative contribution of school socio-economic composition to students' academic performance in comparison to its effect on students' aspirations and plans?

5. Do student achievement levels, as measured by standardized tests, and teachers' evaluations of student performance, as measured by students' grades, both show the same kind of relationship to socio-economic composition of school?

Major sources of data were school records and student questionnaires. Variation in age was controlled by identifying, through the use of the school records, students whose birthdays fell between May 1, 1949, and November 1, 1949. Questionnaires on fathers' occupation and occupational and educational aspirations and plans were administered to these students in the spring of 1965. School records were used to obtain results of the Iowa Tests of Educa-
Data analysis showed that when individual socio-economic status was controlled, both middle and upper socio-economic students achieved at a significantly higher level in middle-upper socio-economic composition level schools. While findings for lower socio-economic students did not show them achieving at a significantly different level by school socio-economic composition, the difference observed was in accord with differences found in prior research. Therefore we may tentatively conclude that the academic achievement of lower class students is also affected by the socio-economic composition of the school.

Data analysis for the exploratory questions, which examined the impact of socio-economic composition of school on teachers' evaluations of students' performance, shows that there are differences in mean grade-point averages by socio-economic composition of school when individual socio-economic status is controlled. Also, that student achievement, as measured by reading level, and teachers' evaluations of students' performance as measured by students' grades, both show the same kind of relationship to socio-

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1The data used in this study was collected as part of a series of student socio-economic status studies by the Center for Sociological Research at Western Michigan University under the direction of Edsel L. Erickson.
economic composition level of the school when individual socio-economic status is controlled. However, the association between socio-economic composition level of school and grade-point averages is not as clear as that between socio-economic composition of the school and reading level, suggesting that factors other than socio-economic composition of school, socio-economic status of individual and student achievement are reflected in teachers' evaluations of students' performance. This, of course, is supportive of other research which finds such conditions as teachers' and students' values affecting grades assigned.

Moreover, only where middle socio-economic status students are concerned is there a somewhat consistent difference in the impact of socio-economic composition of school on the four social-psychological variables of students' occupational and educational aspirations and plans, when controlling for students' socio-economic status. It was tentatively concluded on the basis of these findings that the socio-economic composition level of the school has a greater impact on academic achievement than it does on aspirations and plans.

Implications for Sociology

Socio-economic composition of the school has been found by this research to significantly affect the achievement levels of
middle and upper-class students, when students' individual SES is controlled. While lower-class students in schools of middle-upper socio-economic composition achieved at a higher level than in schools of lower socio-economic composition, findings for lower class were not statistically significant. This is in accordance with the findings of the major related studies reviewed in Chapter I.

Herriott and St. John,\(^1\) using reading level as a measure of achievement, found that low social class schools had over four times as many students retarded in reading as did schools in the highest social class. Gross and Herriott,\(^2\) also using reading ability as a dependent variable, found an inverse relationship between the average fathers' incomes in the school and the percentage of students who were behind grade level in reading ability. The Wilson\(^3\) study found that the social class climate of the school affects the academic achievement and occupational aspirations in addition to the contribution made by the social class of the home. The present study found that students in schools of lower socio-economic composition level have lower reading score averages than students in upper-middle socio-economic composition level schools, regard-

\(^1\) op. cit., p. 204.
\(^2\) op. cit., p. 43.
\(^3\) op. cit., p. 234.
less of the individual students' socio-economic status.

However, the findings of the present study also show that socio-economic composition level of the school has a differential effect on the dependent variables tested. Sociologists who attempt to understand the impact of the school should recognize this. Of the variables tested here, the greatest impact of the socio-economic level of the school was found to exist for students' reading level, and the least impact was found for students' aspirations and plans. It may be that, through the operation of the three theoretical constructs of stigmatization, student environment and relative standing in class, socio-economic composition becomes a powerful variable, affecting student academic achievement.

The findings of this study corroborate findings of others which have focused mainly on aspirations and plans, namely, that other influences, such of those of family and friends, which operate over longer periods of time than influences within a school system, may have an important effect on students' plans and aspirations.

Hypothesizing about the relationship between socio-economic composition level of school and student behavior necessitates the inclusion of the notion that this relationship is conditional.

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Hannah's Racial Isolation in the Public Schools\(^1\) demonstrates the importance of interracial friendship in an integrated setting, suggesting that students in schools of "mixed" social classes may do better academically than they will in schools where social class is homogeneous, if they are supported by staff, peers and parents. The Hartford\(^2\) report finds that only the bussed students who received support from staff and peers in their new schools made academic gains over non-bussed students. The relationship of socio-economic composition of school to situational factors such as stigma, student environment and relative standing in class, and in turn, the relationship of situational factors to academic achievement, is a complicated one and staff and peer support undoubtedly contribute to both.

Another tentative conclusion drawn from the examining of the exploratory questions of this study is that students' grades may not be a valid measure of student achievement; that they may in fact reflect such factors as teacher-student relationships. Studies which attempt to measure academic achievement should be cogni-


zant of this phenomena.

The sociological concept of social class is further elaborated by the classification of institutions, such as schools, into socio-economic levels; and by the determination that this characteristic of social class level of the school has an effect on the academic behavior of the members of the system.

Studies such as this, which treat socio-economic composition level of schools as a major factor, also contribute to systems analysis by the addition of this system variable.

Implications for Education

The prediction of academic behavior is facilitated by the discovery of a positive correlation between variables such as socio-economic composition level of school and student achievement. Recent studies which successfully attempt to utilize the social class level of the school as a relevant variable for the prediction of academic achievement make a contribution by providing additional sets of meaningful criteria which allow more accurate prediction of student achievement.

Studies such as this one, and similar works cited previously, contribute to a growing body of evidence which documents the assertion that the student environment (the informal norms and standards developed by the student body at large) has important
effects on the academic growth of the pupils in the school. This understanding and knowledge can be utilized toward modifications of the educational system which will allow the school to achieve its purposes more readily. If, as this study appears to indicate, the socio-economic composition of the school does have an important influence on the academic behavior of students, then planned innovations in that composition may produce the desired changes in the behavior of the members of that system. Efforts of school administrators toward the alleviation of stratification between schools could possibly produce major changes in student academic behavior. These changes hopefully could eliminate community stigmatization of lower class schools, change student environments, and also provide more desirable frames of reference and points of comparison for the students' evaluations of his own academic performance. Removal of the above mentioned undesirable systemic conditions could operate to affect student academic behavior in a desirable way.

Awareness on the part of teachers that they are responding to certain systems' cues, such as a clustering of students with similar socio-economic characteristics, and awareness about the importance of the effects of their own images of school and students, may operate to bring about necessary changes in teacher-student relations and consequently in student behavior.
Of course, many questions arise in response to statements about planned changes in school systems. What will be the total effect of deliberate changing of the socio-economic composition of schools? Is random assignment of students to a particular school the best method to use? Is it damaging or advantageous to a student to change his relative standing in class?

Some of these questions can be tentatively answered. McPartland finds, for example, that "most Negro students exposed to higher academic standards and competition levels (did) not withdraw or suffer any serious damage to personality development." However, most of the questions about the effects of changing socio-economic composition levels of schools remain, at the present time, unanswered and serve to point up an urgent need for further study. All of the preceding discussion of changing schools in order to improve student achievement rates is highly conjectural and ignores many other factors which either already exist or will be created by the changes, and which will also affect how students react to modifications in school organization.

Limitations of Study and Further Suggestions

This study has used only one measure of the independent vari-

\[1\] McPartland, James, op. cit., p. 217.
able (socio-economic composition of the school). While it may be considered methodologically advantageous to use a consistent measure of socio-economic status (in this case the Duncan\textsuperscript{1} scale) for both the independent variable and the dependent variable (students' individual socio-economic status), other measures of socio-economic composition of school should be substituted or added if replications of this study are made so as to overcome the idiosyncratic characteristics associated with any given instrument or set of procedures. Such other measures might consist of a combination of social status characteristics, such as family income, parents' education levels or neighborhood factors. Perhaps employment of reputational measures of school socio-economic composition would prove to be empirically and theoretically useful. Opinions of a number of informed citizens regarding the characteristics of the neighborhood in which the school is located, the area which it serves, and the type and condition of facilities may also provide better assessments of social class factors. At any rate, it is quite possible that different measures of social class may give different results, and this study is limited by the fact of limited measures of social status.

For a measure of academic achievement (the dependent variable) this study used the Iowa Test of Educational Development. While reports of reliability and validity for this test of reading ability are high, other standardized reading tests should be used, as well as other standardized achievement tests which incorporate the measurement of the achievement of other skills, such as writing and the ability to solve mathematical problems.

It has been tentatively concluded on the basis of this study that socio-economic composition level of the school has a varying and differential impact on certain student characteristics and traits. Further research is necessary to determine whether socio-economic composition of the school effects other student characteristics, and, if so, the extent of this effect. The following questions exemplify this need for further research. Does socio-economic composition of the school effect the students' self-concept of academic ability, the perceptions and expectations of their parents, friends and teachers? Does socio-economic composition of the school make a contribution to the amount of time students spend in extra-curricular school activities? Does the social class composition of the school affect non-student roles such as dating and courtship patterns? Is it possible that the three theoretical constructs (social stigma, student environment, and relative standing in class) operate as a function of the socio-economic composition of the
school to affect students' behavior?

The control variables used in the present study (student age and socio-economic status) were possibly the most relevant for the purposes stated. However, other control variables, such as sex, measures of intelligence, and race might yield other results and therefore should be included in follow-up research. Also, since this study controlled out variations in age (rather than sampling a variety of age groups) it cannot be predicted, on the basis of these findings, whether results would be the same for other age groups.

The sample population of this study is somewhat limited, since it consisted of four high schools from one medium-sized, mid-western city, out of a population of hundreds of thousands of high schools. While this is an acceptable procedure for exploratory research, there is a definite need for replications in other geographic areas, or with a national sample, controlling for geographic regions. Several ecological, demographic, economic and sociological factors need to be considered; for example, this hypothesis should be tested in rural areas, where perhaps one high school serves the whole community; as well as in large, metropolitan centers.

The city in which this study was made is one which has a large parochial school system; approximately 40% of the students are not in the public system. This points out another aspect which
future study of this problem should consider.

Another limitation of this research is one which is common to all static studies. This is a cross-sectional study, administered at a single point in time, and consequently, only relationships and not changes over time can be established. Perhaps further research could observe changes over time in the composition of the school and the status characteristics of the subjects. A longitudinal test would certainly provide a more definitive test of the major hypothesis than was accomplished by this study.

On the other hand, a more comprehensive suggestion would surely include the idea that perhaps it is not sufficient to do a classic "before and after" study. Perhaps the right questions to ask are questions which ask what kind of neighborhood a child should be born into, and what kind of school he should attend from kindergarten on.

In spite of the many rather severe limitations cited above, and perhaps others, this study provides a sufficient empirical basis for further theoretical and empirical work on systemic characteristics of schools in order to discern their impact on student behavior.
BIBLIOGRAPHY


