

**SURVEY OF INDIVIDUAL DIFFERENCES AFFECTING  
ACADEMIC SUCCESS AND FAILURE**

**BY**

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SURVEY OF INDIVIDUAL DIFFERENCES AFFECTING  
ACADEMIC SUCCESS AND FAILURE

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A Research Paper  
Presented to  
the Graduate Council of  
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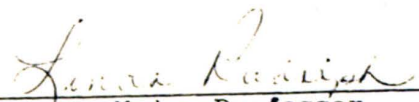
In Partial Fulfillment  
of the Requirements for the Degree  
Master of Arts  
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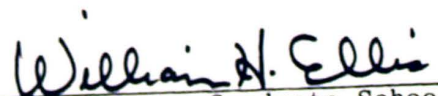
by  
Barbara Chesnut Mazzei  
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To the Graduate Council:

I am submitting herewith a Research Paper written by Barbara Chesnut Mazzei entitled "Survey of Individual Differences Affecting Academic Success and Failure." I recommend that it be accepted in partial fulfillment of the requirements for the degree of Master of Arts in Education, with a major in Guidance and Counseling.

  
Major Professor

Accepted for the  
Graduate Council:

  
Dean of the Graduate School

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## CHAPTER I

### INTRODUCTION

The effects of education have been assessed by a variety of standards. Long term effects have been measured by such criteria as a pupil's highest level of education, the occupational prestige of his employment, and the economic status obtained as an adult. Other assessments of the effects of education have been concerned with the attitudes, aspirations, and values of children in relationship to their future experiences as adults. Most assessments of educational output, however, have been based upon gross pupil performances such as averages on achievement tests. A more specific assessment of the educational program based upon the recognition of differences among groups of students is needed, especially indications of how such factors as sex, race, intelligence, age of entrance to school, father absence, days absent from school and socioeconomic status affect a student's achievement (Jantz, 1974).

At virtually every grade level, differences in the degree of school success attained vary with a number of student characteristics such as ethnic background, socioeconomic status (SES), and IQ: i.e., school success depends on a variety of factors other than ability to

learn. It has been established that, as a group white children are more successful in school than black children, and high IQ children succeed more often than low IQ children (Rohwer, 1971).

In a comparison of mean sixth-grade Henmon-Nelson IQ Test scores by race, sex, and family status of 3,272 pupils, the investigation by the U. S. Commission on Civil Rights (1967, p. 173) found that girls had higher mean scores than boys, and that white pupils tested higher than Negro pupils. Their study also revealed that those pupils from high status families scored above those of low status families.

Many studies that have compared children from different social classes have yielded results that indicate that the IQ performance of middle class children is superior to that of lower class children (Berstein, 1960; John, 1963; McCandless, 1952). Since the Wechsler Intelligence Scale for Children (WISC) provides standardized independent Verbal and Performance IQ scores, this test has been used frequently to demonstrate differential abilities in upper and lower socioeconomic status children. Estes (1953) found that upper SES children scored superior to lower SES children on Verbal IQ, Performance IQ, and Full Scale IQ, and Marks and Klahn (1961) showed that the occupational level of fathers correlated positively with the children's IQ scores obtained on the WISC.



Racial and socioeconomic differences in intellectual functioning remain a crucial issue. Numerous arguments and evidence supporting conflicting views are summarized by Shuey (1966), Tumin (1963), Jensen (1969), and others.

Burnes (1970) administered the WISC to Negro and white boys from lower class and upper middle class homes in order to determine group patterns of intellectual abilities. Results showed significant differences among subtest scores; lower class subjects of both races obtained the lower scores as expected, but the configurations of scores for each group were very similar. A few differences in the patterns were found between socioeconomic groups, but not between races.

Telegdy (1973) studied learning disabled children who exhibited some difficulty in academic performance and were referred to psychologists for assessment. The WISC was administered to all children by an experienced psychometrist. The results of the study indicated that the lower SES learning disabled children scored lower than the normal population on both the Verbal and Performance Scales of the WISC, while the upper SES children scored lower only on the Verbal subtest. No significant differences were found on Verbal IQ or any of the five verbal subtests when low and high SES learning disabled children were compared. However, upper SES children scored significantly higher than lower SES children on the Performance IQ, Full Scale IQ and all of the five performance subtests.

Havighurst and Taba (1949) feel that one of the most influencing causes in academic achievement is the social extraction of the students. They state that a comparatively small group of lower class students succeed because they are making an extra effort, which is not required by the social stratum to which they belong. However, Coleman (1940) indicates that it seems sometimes impossible to determine whether superior achievement is the result of intelligence or socioeconomic status.

Another factor associated with poor academic performance of students is the age of entrance to school. The scholastic achievement of underage children, who are in competition with normal age children in a curriculum designed for the more mature student, has become a problem for teachers. Some teachers are of the opinion that the lack of maturity of most underage pupils is the major cause of the failure of these pupils to meet normal academic requirements throughout the elementary school period. It has been found that at any stage in a child's life, learning is most successful when tasks are adapted to the mental capacity of the individual at his level of maturation (Kagan, Rosman, Day, Albert, & Phillips, 1964; Almy, Chittenden, & Miller, 1966). Since the main goal of education is to help the child to live to the fullest extent,

it is imperative that the relationship between chronological age, maturity, and the school curriculum be clarified, according to Carter (1956).

Ames (1960) suggests that starting a child to school too young will seriously hurt him in his later academic endeavors. She feels that some failures are caused by a child starting to school before he is maturationally ready to accomplish the tasks required of him.

The Austin Public Schools conducted a study in which 50 underage children and 50 normal age children were selected for a comparative study of the achievement in elementary school subjects in grades two through six. Half of the pupils selected were 6 years old or over on September 1 and the other half were less than 6 years of age on September 1. The pupils were equally divided between sexes. The conclusions drawn from the data studied indicated that the chronologically older child appears to fair better academically than the younger child when given the same school experiences. Also, the underage boys made lower scores and fewer high scores than the underage girls (Carter, 1956).

Inez King (1956) conducted a study investigating the effect of entry age on later performance in Oak Ridge, Tennessee. A total of 54 children who were 5 years and 8 months to 5 years and 11 months old when they started school were compared with 50 children who started at 6



years and 3 months to 6 years and 8 months of age. Stanford Achievement Tests at the end of grade six showed a distinct difference, strongly in favor of the older group. Of the 11 children who were retained, 10 had started before 6 years of age. In an assessment of the behavior of these children, 19 boys and 16 girls of the younger group appeared to be maladjusted in some way, while only 3 boys and 3 girls from the older group were considered maladjusted.

John Forrester (1955) completed a vertical study of 500 grade one through twelve children in the Montclair, New Jersey, public schools. The very bright but very young pupils at the time of school entrance did not realize their school success potential. From junior high on through their school career, 50% of them earned only C grades. However, the very bright but older group excelled generally throughout their school careers.

While many of the studies undertaken included all levels of SES children, Paul Mewhinny (1964) found similar results studying only high SES groups. His sample included only children from Detroit's elite Grosse Pointe, Michigan, families who were selected by psychologists for early entrance into school because they were considered mature enough or of sufficient potential to be admitted to kindergarten before age 5. After 14 years an evaluation was

made of all who remained in the Grosse Pointe schools. More than one-fourth of the selected group were below average or had repeated a grade.

On many occasions, researchers have demonstrated that the child from a father-absent home performs more poorly on intellectual and achievement measures than the child from a home in which the father is present (Bronfenbrenner, 1967; Deutsch, 1960; Deutsch & Brown, 1964; Landy, Rosenberg, & Sutton-Smith, 1967; Sutherland, 1930; Sutton-Smith, Rosenberg, & Landy, 1968). The Sutton-Smith et al. (1968) study also evaluated the effect of the age at which father absence occurred on the American College Entrance Examination (ACE) scores of entering college freshmen, using age categories of 0 to 4, 5 to 9, or 10 plus years of the child's age. In general, father absence, when compared with father presence, had a depressive effect on the ACE scores of both male and female students with the greatest effects occurring when the father was absent during the early and middle years. A limitation of these data was the use of overlapping age categories and a lack of control for type of father absence. Father absence during 0 to 4 age period was the result of war service; for all other groups, divorce, desertion, or separation was the primary cause of father absence.

In a similar study, Deutsch and Brown (1964) found that father-absent first and fifth graders scored

child's age. A second factor considered was the reason for father absence, whether (a) death, (b) divorce, desertion, or separation, or (c) presence of a stepfather. While father absence due to divorce, desertion, or separation had the most negative influence in the initial 2 years of the child's life for boys and girls, father absence due to death was the most detrimental when it occurred in the 6 to 9 age period of the boy's life. Father-absent boys consistently performed more poorly than father-absent girls and father-present boys. Remarriage of boys' mothers who were divorced from, deserted by, or separated from their previous husband in the initial 5 years of the son's life had a positive influence reported Santrock (1972).

Carlsmith (1964) reported that father-absent adolescent males were similar to females in the patterning of their aptitude test scores; father-absent boys tended to have relatively higher verbal functioning than mathematical ability suggesting a "feminine cognitive style." Other researchers have also presented findings pointing to the lack of positive father-son interaction being associated with boys' difficulties on tasks involving analytical thinking (Dyk & Witkin, 1965) and general academic achievement (Grunebaum, Hurwitz, Prentice, & Sperry, 1962; Kimball, 1952).

In a study of Scottish children, Sutherland (1930) noted that children with fathers absent scored



significantly lower on an intelligence test than did those whose fathers were present in the home. Deutsch and Brown (1964) obtained a similar finding with Negro children. In a study by Sutton-Smith, Rosenberg, and Landy (1968) it was revealed that males who became father-absent early in life were more likely to have lower college aptitude scores than were males whose father had not been absent.

Research also indicates that poor academic performance of students is associated with absence from school. Stennet (1966) reported that between 5 and 10% of a sample of 1500 children between the ages of 9 and 11 had difficulties in adjusting to school. Also, 22% of this sample could be labeled "emotionally handicapped children." Additionally, 78% of the emotionally handicapped boys and 66% of the emotionally handicapped girls had learning disabilities, were frequently absent from school, did not do well in their school work, and were either older or younger than their classmates.

A study of the nutritional status of junior high school children in New York (Dibble, Brin, McMullen, Peel, & Chen, 1965) compared subjects from different economic groups. Of the three schools compared, one was 94% Negro, while the other two were predominantly white. The schools were also differentiated on the basis of the occupation of the students' fathers. Of the 58% of the employed fathers from the predominantly Negro school, 52% were laborers,

whereas only 10% and 38% were in this category in the white schools. The authors concluded that the differences between the schools show a relationship between nutrition and socioeconomic status. Although the students at the predominantly Negro school did not appear to suffer from nutritional deficiencies, their diets were significantly less adequate than the subjects from the white, middle class schools. The investigators stated that they did not attempt to link dietary habits with health records, but the results of the study lead to speculations about the relationship between deficient diets, rates of infection, school absence and academic performance.

Inasmuch as the literature reveals a number of factors such as sex, race, IQ, SES, days absent from school, early entrance to school and father absence, affecting students' educational performance, it is the purpose of the present study to further investigate the relationship of these variables to student success or failure.

## CHAPTER II

### METHOD

#### Subjects

The subjects were 90 seventh-grade students enrolled at Burt Junior High School, Clarksville, Tennessee, during the academic year 1976-77. From a list of students who failed from 1 to 4 academic subjects from the previous 6 grading periods, 45 "failure" students were obtained. The 45 "failure" students selected from this list had obtained 6 letter grades of "F" in academic subjects over the 6 grading periods. From a list of students enrolled at Burt Junior High School, 45 students having earned grades of not less than a "C" in academic subjects over 6 grading periods were randomly selected for comparison with the "failure" groups. These students were labeled "successful" students.

#### Procedure

Data for comparing the 45 "successful" students with the 45 "failure" students were taken from the cumulative folders of these students, where information concerning each student's school life had been recorded for the previous 6 years and during his seventh school year. The cumulative folder was reviewed, and a record was made of the following factors:



1. The IQ score derived from the Otis-Lennon Mental Ability Test, administered during the school years 1975 and 1976;
2. Sex of the student;
3. Race of the student;
4. Socioeconomic status as defined by the father's occupation;
5. The student's age of entrance into school;
6. Father absence or presence in the home; and
7. Days absent from school during the academic year 1976-77, as recorded on the Burt Junior High School attendance report.

#### Definitions of Terms

Clarification of certain terms used in this study are as follows:

Failure student. Those students obtaining 6 letter grades of "F" in academic subjects over 6 grading periods. Also, students were screened so that the "F" obtained was in more than one academic subject.

Successful student. Those students having earned grades of not less than a "C" in academic subjects over 6 grading periods.

Socioeconomic status. SES was defined by the father's occupation. High socioeconomic status included fathers whose occupations were professional, technical, managers, official or proprietors. Middle socioeconomic status

included fathers whose occupations were skilled craftsmen and foremen, clerical, sales or semiskilled. Low socioeconomic status included fathers whose occupations were laborers, unskilled or were on welfare aid.

Father absent. If there was no information of the father on the cumulative folder or class schedule cards, then it was assumed there was no father present in the home.

## CHAPTER III

### RESULTS

Many of the findings of the present study were in agreement with previous researching findings, however some differences were found. The following summarizes the results of the comparison of the 45 "failure" students with the 45 "successful" students on the factors of IQ, sex, race, SES, age of school entrance, father absence or presence, and days absent from school.

1. The mean IQ for the "failure" groups was 84, with scores ranging from 63 to 121 ( $N = 45$ ). The mean IQ for the "successful" group was 117, with scores ranging from 92 to 146 ( $N = 44$ ). This difference was significant at the .01 level ( $t = 12.65$ ).

2. In an examination of the "failure" group and "successful" group, it was found that 80% of the "failure" group were males while 56% of the "successful" group were males ( $N = 45$  for both groups).

3. In a comparison of the relationship between success and failure to the factor of race, 93% of the "successful" students were white, 4% were black, and 2% were other; 55% of the "failure" students were white, 45% were black and 0% were other ( $N = 45$  for both groups).



4. When the age of entrance into school was examined for its relationship to school success, it was found that 84% of the "successful" students entered at or over the age of 6 years ( $N = 45$ ), while 79% of the "failure" students entered school at or over the age of 6 years ( $N = 39$ ).

Within the "failure" group, 36% of the students had been retained; 2% of the "successful" group had been retained. Of the 16% "successful" students entering school below the age of 6 years, no students were retained. Of the 21% "failure" students entering school under the age of 6 years, only 3 were retained. More students were retained who entered school after the age of 6 years in this sample than those entering before the age of 6 years. For the 79% "failure" group (31 students) who entered school after 6 years, 11 were retained; only one student was retained in the 84% "successful" group (38 students) who entered school after the age of 6 years.

5. In a comparison of the relationship of SES with success or failure, it was found that 2% of high SES were "failures" while 35% of the high SES were "successful" students; 58% of the middle SES students were "failure" students and 60% of the middle SES were "successful" students; 40% of the low SES students were "failures" while only 4% of the low SES students were "successful" students ( $N = 45$  for both groups).

6. An examination of the percentages of father-absent and father-present students revealed that 29% of the students considered in the "failure" group had fathers absent, and only 2% of the "successful" students had fathers absent (N = 45 for both groups).

7. In comparing the two groups on the factor of days absent, the "failure" students were absent a mean number of 12.7 days; the "successful" students were absent from school a mean number of 6.1 days. This difference was significant at the .01 level ( $t = 3.49$ ). Out of a total of 175 school days, "failure" students missed from 0 to 41 days; "successful" students missed from 0 to 24 days (N = 45 for both groups).

## CHAPTER IV

### DISCUSSION

An examination of the results of the present study comparing 45 "failure" students with 45 "successful" students revealed that there were differences between the two groups studied. Specifically, it was found that the "failure" group included a higher percentage of males than the "successful" group; included a higher percentage of black students than the "successful" group; obtained significantly lower IQ scores than the "successful" students; included a larger percentage of low SES students than the "successful" group; and included a larger percentage of father-absent homes. Entering school before the age of 6 years did not seem to affect school success or failure for the students in this study, however days absent from school was significantly higher for the "failure" students than for "successful" students.

Several studies reviewed have indicated that females throughout their school careers obtain higher grades than males (Oetzel, 1966; Garai & Scheinfeld, 1968). The present findings agree with this research; there were only 20% females included in the "failure" group. The difference between males and females was not as pronounced in the "successful" group. Inasmuch as the school's



population is composed of a higher percentage of males than females, a higher percentage of male failures could be expected; however 80% male "failures" is disproportionately high when compared to the total school population.

Rohwer (1971) listed race as a factor affecting pupil performance and found that black children are less successful in school than white children. The "failure" group in the present study was approximately equal in the number of black and white students, however these percentages must be interpreted with caution. First, it should be noted that the "successful" group is composed of 93% white, 4% black and 2% other. The 45% black student "failures" appears high when compared to the "successful" group. Also, the school has a black population of only approximately 25%, therefore the percentage of blacks included in the "failure" group is high when compared to the total school population of black students.

The IQ of the "failure" students in the present study is significantly lower when compared to the "successful" group. This finding agrees with the literature which finds that students whose academic achievement is low also have low IQ's, and high IQ students do succeed more often in school (Jensen, 1969). However, the IQ scores for the sample used in the present study were obtained from testing during the years 1975 and 1976. Inasmuch as there is a high correlation between IQ and achievement test scores,

population is composed of a higher percentage of males than females, a higher percentage of male failures could be expected; however 80% male "failures" is disproportionately high when compared to the total school population.

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it is possible that the differences might not have been as great had IQ scores from earlier years been available for comparison before low achievement had become a pattern for these students.

Some researchers have speculated that there is a relationship between low SES and deficient diets, rates of infection, school achievement and academic performance (Dibble, Brin, McMullen, Peel, & Chen, 1965). The "successful" students in the present study were not absent from school as often as the "failure" students. The speculation of Dibble, Brin, McMullen, Peel and Chen (1965) regarding diet deficiency and its relationship to poor academic performance leads us to examine another factor--that of SES. Within the "failure" group, 40% were classified as low SES. It would therefore seem that diet, if it is related to low SES, could possibly be a factor in the low achievement of these students as well as days absent from school.

A further examination of the SES of the "failure" students revealed that the majority of them were in the middle and low SES, whereas the "successful" students were in the middle and high SES areas. Research indicates that this is the pattern of low academic achievers; that there is a strong relationship between achievement, IQ, and SES (Moynihan, 1965). Whether the low academic achievement is due to low IQ or SES, or a combination of these factors and others, such as dietary deficiency, is open to question.



When comparing father absence and presence and academic achievement, it can readily be seen that an overwhelming majority of the "successful" students had fathers present in the home. In obtaining the information concerning father absence or presence, if there was no mention of the father on the cumulative folder, it was assumed that there was no father. Also, fathers present were often stepfathers, however Santrock (1972) states that remarriage of boys' mothers who were divorced, deserted or separated from their husbands had a positive influence on the boys' academic achievement. Another interesting variable that would be of benefit in the interpretation of data for this study would have been knowledge of the age of the student when the father left the home. The literature suggests that a child is harmed the most academically when the father leaves before the child is 5 years of age (Blanchard & Biller, 1971).

From the results of this study it seems clear that sex, race, IQ, SES, days absent from school and father absence does affect students' educational performance. The data studied reveal that there were more males categorized as "failure" students than females; there was a higher percentage of blacks in the "failure" group when compared to the total school population of black students; the "failure" students had a significantly lower mean IQ than the "successful" group; a majority of the "failure"

students were from the middle and low SES, whereas the "successful" students were the middle and high SES; and the "failure" students were absent from school a significantly number of days more than the "successful" students. Also, the results of this study indicate that the "successful" group reported an overwhelming majority of father's present in the home which leads the researcher to believe that this had a positive effect on the educational performance of these students. Based on the findings of this study, there are sex, IQ, race, SES, attendance and home differences between the "failure" and "successful" students at Burt Junior High School.

## CHAPTER V

### SUMMARY

Inasmuch as the literature reveals a number of factors such as sex, race, IQ, SES, days absent from school, early entrance to school and father absence, affecting students' educational performance, it was the purpose of this study to further investigate the relationship of these variables to student success or failure.

The subjects were 90 seventh-grade students enrolled at Burt Junior High School, Clarksville, Tennessee, during the academic year 1976-77. From a list of students who failed from one to four academic subjects during the previous six grading periods, 45 "failure" students were obtained. The 45 "failure" students selected from this list had obtained six letter grades of "F" in academic subjects over the six grading periods. From a list of students enrolled at Burt Junior High School, 45 students having earned grades of not less than a "C" in academic subjects over six grading periods were randomly selected for comparison with the "failure" groups. These students were labeled "successful" students.

From the results of this study it seems clear that sex, race, IQ, SES, days absent from school and father absence does affect students' educational performance.



The data studied reveal that there were more males categorized as "failure" students than females; there was a higher percentage of blacks in the "failure" group; the "failure" students had a significantly lower mean IQ than the "successful" group; a majority of the "failure" students were from the middle and low SES, whereas the "successful" students were the middle and high SES; and the "failure" students were absent from school a significantly number of days more than the "successful" students. Also, the results of this study indicate that the "successful" group reported an overwhelming majority of fathers present in the home which leads the researcher to believe that this had a positive effect on the educational performance of these students. Differences in the age of entrance to school appears not to be related to the success or failure of the students in this sample.

As stated previously, a more specific assessment of the individual factors such as those investigated in the present study is needed in order to understand their effect on student achievement (Jantz, 1974). The present study attempted to further investigate the variables related to student success and failure. Inasmuch as the student's academic success or failure is dependent to some degree on these factors, it would seem worthwhile to

continue to investigate individual differences and their effect on achievement in order that learning needs may be more adequately met.

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