

A Causal-Comparative Study of the Advancement Via Individual Determination
(AVID) Program on Middle School Student Achievement and Attendance

by

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(ABSTRACT)

This was a causal-comparative study the Advancement Via Individual Determination (AVID) Program on middle school student academic achievement and attendance. There were two major research questions, which were presented. They were as follows: Is there a statistically significant interaction among gender (males, females), race/ethnicity (blacks, whites), and group membership (Talented and Gifted, AVID) with respect to Stanford 9-TA Partial Battery Normal Curve Equivalent (NCE) achievement total scores after controlling for initial differences in socioeconomic status and, Is there a statistically significant interaction among gender (males, females), race/ethnicity (blacks, whites), and group membership (Talented and Gifted, AVID) with respect to attendance after controlling for initial differences in socioeconomic status?

These questions were analyzed using two three way ANCOVAS with 2 x 2 x 2 factorial designs, with a .05 alpha level employed to test for statistical significance. The researcher analyzed standardized testing and attendance data collected on the 1996-1997 eighth-grade student cohort within one mid-sized socioeconomic diverse urban school district. Data were collected on 398 students beginning with the 1994-

1995 school year and concluding with the 1996-1997 school year. Data for eighth grade students not enrolled in the Gifted and Talented, or AVID programs for that length of time, neither were used. The collected data were analyzed using the Statistical Package for the Social Sciences (SPSS, 1995).

Threats to the internal and external validity of this study may be that students have relocated or were not present during test administrations and their Stanford 9-TA Partial Battery Achievement Test data were not available. Test data for students neither blacks or whites, or in AVID or the Talented and Gifted programs for the indicated three-year span were not analyzed. Students missing attendance data were also not included.

The creators of AVID, profess that students participating in the AVID program will attend school and achieve academically as well as other groups of children. The researcher's analyses of the data does not substantiate this claim. The data yielded that AVID students produced lower achievement scores on the Partial Battery of the Stanford 9-TA Achievement Test in all areas. It was also found that gender, race/ethnicity and group membership were significant factors.

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CHAPTER I

Introduction to the

Advancement Via Individual Determination (AVID) Program

Over the past few decades, scholars and policy makers have been perplexed as to why students learn so little in some schools. Many researchers and school reformers currently claim that school effectiveness hinges on organization and curriculum awareness and expectations. They contend that shared values and activities, positive adult social relations, positive teacher-student relations, and democratic governance enhance student's school engagement and their academic achievement. Other researchers contend that schools are effective when they offer demanding curricula and employ teachers whose educational expectations for their students are high. The Advancement Via Individual Determination (AVID) reports to be just such a program. According to its creators, AVID is designed to prepare middle and high school students with average ability from groups traditionally underrepresented in postsecondary education for eligibility, and success in four-year colleges and universities. It recognizes that the only way some students can get into or through college is by perseverance, hard work, and as the AVID's name reveals, individual determination. AVID comes from the Latin root *avidus*, meaning eager for knowledge.

The program was originally designed as an intervention for high school students. In the mid-1980s, when AVID began to expand beyond San Diego City Schools, and middle school students were transitioning to high school, AVID programs were addressed through a Summer Bridge Program. By 1989-1990, however, an AVID middle level

program had been implemented, and the Summer Bridge program was discontinued. Since then, the number of middle school AVID programs in California has increased to approximately 119 (Guthrie and Guthrie, 1988).

Swanson (1996) states that, middle level AVID programs have grown dramatically as it has become increasingly clear that assistance and support for low income and underachieving students has to begin earlier than the ninth grade. Swanson expresses that, although the objectives of middle level AVID are much the same as in high schools, the organization and curriculum of the middle grades as well as the developmental level of students require some modifications in the program. She indicates that these include, for example, a focus on college awareness rather than college applications, and a focus on reading and literacy. Swanson emphasizes that the goal of middle level AVID is to successfully transition middle school students to a high school curricular path that will lead to college.

AVID is a school restructuring or school change program established in 1980 by two English teachers at Clairemont High School in San Diego CA. One of these founders is Mary Katherine Swanson. Many disadvantaged students assigned to the school were not achieving at academic levels that would allow them entry into four-year colleges or universities. The AVID program components are designed to promote not only entry into four-year colleges and universities for students, but to help them maintain an acceptable level of excellence. Because of the concern for students lack of entry and success at the post-high school level, Swanson states that a team consisting of students, content area teachers, counselors, administrators, parents, college personnel and business people

gathered with the belief that education is everyone's concern. Through this team effort, the AVID program was born.

According to Swanson (1996), AVID during its more than fifteen years of existence has grown from a single classroom in one school to more than 500 schools in seven states and nine foreign countries, enrolling more than 20,000 students. Since 1990, more than 4,000 students have graduated from AVID programs in San Diego County. Of these participants, 93.8% have enrolled in college, where 89% remain two years later. This is a college enrollment rate 75% higher and a retention rate 60% higher than the national average.

It is indicated by Swanson that AVID improves daily attendance and graduation rates in secondary schools and provides a group of students, previously dismissed as inappropriate for four-year college enrollment, with the opportunity to become the leaders of the 21st Century. In California, all students graduating from AVID schools have improved completion of four-year college entry requirements at a rate 200% higher than student in non-AVID schools (Guthrie and Guthrie, 1988).

Swanson cites that the underrepresentation of disadvantaged and minority youth in colleges and universities is addressed by AVID through its components which prepare students academically to compete at such a demanding level. The disparity between these students and their white and other more affluent peers is decreasing, but it certainly has not been abolished. In Virginia, Blacks make up 22% of the university-age population, but only 17% of the first-time full-time freshmen at public colleges and just under 11% of the recipients of baccalaureate degrees at public institutions. Bachelor's

degrees awarded to black students in Virginia rose 20% between 1979 and 1991 but the number granted to white students grew 32% (Southern Education Foundation, 1995).

Students of mid-range ability are targeted for participation in the AVID program. These students have the potential to succeed in a rigorous academic program but normally would not succeed without support. The program is not for at “risk” students who are in need of remediation, and it is not for gifted students, who are already performing well. The program is designed to serve students in the middle, who are capable of success but are not performing up to their potential (Swanson, 1996).

Students Identified for AVID

Potential AVID students are identified by counselors, teachers, parents, or by students themselves. AVID’s three criteria: ability, desire and determination and membership in an underrepresented group are vital to the program’s success (Swanson 1996). AVID students possess the academic potential to succeed in college preparatory courses and in college with tutorial support. According to Swanson, the typical AVID student has a grade point average (GPA) of 2.0 – 2.9 while in high school and they maintain grades of C+ - B+ while in middle school.

Furthermore, Swanson indicates that students in the AVID program must demonstrate a desire to attend college. Each is required to undertake demanding academic courses, which are college preparatory. There is an expectation that they will complete two hours of homework each night. Every student is also required to maintain a notebook binder, which incorporates all of the notes taken while in classes.

AVID students typically are members of an underrepresented group of students found on the campuses of four-year colleges and universities. This includes members of

racial minorities, those who speak English as a second language and those in low-income households. This socioeconomic status is determined by their participation in free or reduced lunch programs. Most of the students participating in AVID will be the first generation in their families to attend college (Swanson 1996).

The program, according to Swanson requires hard work and perseverance and is effective only if participation is voluntary. Students must sign a contract agreeing to enroll in AVID for at least three years or until they complete high school. They must maintain an AVID binder in which to take class notes, and they must participate in tutorial groups.

Parents of participating students must sign an agreement to support all AVID academic requirements. Parents must agree to encourage and support their children's academic success. The parents of AVID students must also agree to attend all parent meetings.

Objectives of the AVID Program

AVID is designed to achieve specific objectives. It supports students while they participate in rigorous college preparatory programs. The program requires that students enroll in honors and advanced placement classes. It aids students in the development of good study habits and academic survival skills. Students, through AVID, learn appropriate writing and time management skills. It supports students in maintaining grade point averages that will be competitive in applying to four-year colleges and universities. AVID fosters positive attitudes toward school and higher education. It helps students become knowledgeable about colleges, and helps students develop a plan to get to college. It fosters opportunities for students to apply to appropriate colleges and

to utilize the financial aid process to the fullest. AVID helps create students that college presidents, and admissions officers of public and private colleges and universities will solicit for enrollment (Swanson 1996).

Statement of the Problem

Because of the major issue identified surrounding the underrepresentation of minority students seeking postsecondary education, the AVID program was developed. It is the purpose of this study to provide the first causal-comparative data on the Advancement Via Individual Determination (AVID) Program on middle school student academic achievement and attendance.

Significance for the Study

AVID is a school instructional and restructuring program for which huge amounts of public tax dollars, time and effort have been expended. However, no causal-comparative study of its claims to improve student achievement and attendance has been completed.

Research Questions

There are two major research questions, which were addressed in this study. They are as follows:

Is there a statistically significant interaction among gender, race/ethnicity (blacks, whites), and group membership (AVID, Talented and Gifted) with respect to Stanford total Normal Curve Equivalent (NCE) achievement scores after controlling for initial differences in socioeconomic status?

Is there a statistically significant interaction among gender, race/ethnicity (blacks, whites), and group membership (AVID, Talented and Gifted) with respect to attendance after controlling for initial differences in socioeconomic status?

Definitions of Terms

For the purposes of this study, the following definitions will apply:

Achievement—The degree to which participating students master expected criteria as measured by the Partial Battery Stanford 9-TA Achievement Test, relative to their peers.

Attendance—The sum of the total number of days students attended school during the 1994-1995, 1995-1996, 1996-1997 school years.

AVID Eligible Students —Students not identified as talented and gifted or in need of remedial services and not classified as needing special education support services (Swanson, 1992).

AVID—A school instructional and restructuring program developed by Mary Katherine Swanson and another English teacher designed to provided educational support for students identified as having academic potential, yet are underrepresented on the campuses of four-year colleges and universities.

Basic Total—Stanford 9-TA Achievement Test consisting of tests scores in the areas of reading, language and mathematics.

Normal Curve Equivalent (NCE) Score—A type of standard score with a distribution that has a mean of 50 and a standard deviation of 21.06. These scores are continuous and have quality of units (Gall, Borg, and Gall, 1996).

Socioeconomic Status (SES)—Free, reduced, or paid lunch status of students for the school years of 1994-1997.

Limitations of the Study

This study will only causally-compare the AVID program with respect to achievement and attendance at the middle school level, from within one diverse socioeconomic mid-sized urban school district. Only the testing data on students of one-eighth-grade cohort during the 1996-1997 school year will be statistically analyzed. AVID by design, provides educational support for students from grade six through grade twelve, but this study will not causally-compare the AVID program with respect to student achievement and attendance in grades nine through twelve.

Threats to the internal and external validity of this study may be that students have relocated or were not present during test administrations and their Stanford 9-TA Achievement Test data is not available. Test data on students not identified as blacks or whites were not included in this study and data on students not in either program for the entire three years were also not analyzed. Students missing testing or attendance data were also not considered when the data were analyzed.

Overview of the Dissertation

The statement of the problem, purpose of the study, research questions, definitions of terms and limitations of this study were presented in Chapter 1. Chapter 2 contains a review of literature related to student achievement and attendance with respect to gender, race/ethnicity and socioeconomic status. Tracking and untracking of students and are also discussed in this chapter, as well as pertinent literature regarding AVID program components. The design and procedures for the research are presented in

Chapter 3, and the data were analyzed and described in Chapter 4. In Chapter 5, general conclusions, implications and recommendations for future research study were made.

CHAPTER 2

Review of the Literature

Theoretical Framework

Most learning theories can be thought of as attempts to determine rules by which stimuli and responses become associated. According to Hergenhahn (1976), Guthrie's theory of the law of contiguity is as relevant today as it was in 1952. Hergenhahn shares that there is nothing new about the law of contiguity as a principle of learning. The theory goes all the way back to Aristotle's laws of association, which stresses the importance of sensory experience as the basis of all knowledge.

Guthrie's law of contiguity recognizes the enormous number of stimuli that confront an organism at any given time and the fact that the organism cannot possibly form associations with all of them. Rather, the organism responds selectively to only a small portion of the stimuli confronting him, and it is that proportion that becomes associated with whatever response is being made (Hergenhahn, 1976).

Guthrie's law of contiguity relates very well to the concepts associated with the AVID program. Because AVID has so many components designed to promote student achievement, it is certain that the expectation is not for every component to meet the individual needs of every student. However, it is expected that students will respond positively to those appropriate AVID achievement components.

Student Dropout Costs and Interventions

Edmunds (1988) explains that the dropout problem has received increased attention for two reasons. He emphasizes that political and educational leaders have been

involved in various attempts to reform and restructure American education. Edmunds also believes that standards should be raised if America is to be competitive with Japan and other countries.

According to Cardenas, Montecel, Supik, and Harris (1992) youth from non-English-language backgrounds are one and a half times more likely to leave school before high school graduation than those from English-language backgrounds. High dropout rates among students from economically disadvantaged and non-English-speaking backgrounds are among the major concerns of middle and high school educators in the United States.

The Office of Educational Research and Improvement (OERI, 1993) provides data which indicates that dropping out of school is a result of many complex factors and long-term individual experiences. Successful dropout prevention programs for language minority students have many components. Usually they have respect for the language and cultural backgrounds of the students they serve and for the positive qualities students bring to school. The expectation of a long-term involvement from middle school through high school must exist for these students. The Office of Educational Research and Improvement (1993) states that the curriculum must be well designed to promote specific academic performances. Committed and experienced professionals must facilitate movement through the program and provide assistance in pursuing academic opportunities beyond high school. Substantive work experience that promotes mature choices and an access to quality employment opportunities must be available. The expectation of a tutoring and mentoring component, which provides intense personal attention and encouragement from successful and caring role models, exists. Finally, the

support from families and the community must be present (Office of Educational Research and Improvement, 1993).

Blyth (1991) reports that every dollar expended on early education interventions that improve performance for children bring savings of three to six dollars in long-term costs associated with welfare, remedial education, and crime. He also points out that the average high school graduate who does not go to college could expect to earn \$260,000 more than the average dropout. It is estimated that the cost to society from lost national income is about \$360,000 per student not continuing on with their education.

Statistics such as these provide indications that educators cannot afford to wait until students reach high school age to implement preventive and intervention programs. Educators must focus on the potential that students in the average range of intelligence have, and provide them with the kinds of constructive and instructional activities that will encourage them to want to stay in school and continue on to schools of higher education. Cavazos (1989) affirms this in his synopsis on follow-up studies of children who were involved in Head Start, as well as other early childhood educational intervention programs. He concludes that when children are successful in school, they are ultimately more likely to complete high school and even continue on to colleges and universities.

It must be pointed out these students' positive school experience impact drastically on their other efforts in life. To that end, preventions and interventions must be targeted at middle school students, while the growing need for peer acceptance poses grave danger to already at-risk students (Massachusetts Advocacy Center, 1988). It is incumbent upon local school districts to plan and implement programs that will assist middle school students who may live up to their potential, which includes continuing on

to schools of higher education. The Massachusetts Advocacy Center points out that even though research demonstrates the importance of middle schools in retaining students, the organization and curriculum emphasis of most do not meet the needs of young adolescents. The Center further explains that retention is quite common in the middle grades when teachers are looking for more specialized knowledge and academic achievement from their students.

Tracking

The Rationale for Tracking

Mehan and Villanueva (1994) state that tracking starts as early as elementary school. Students who have similar skills are placed in small working groups, often called ability groups. This is for the purpose of like instruction. Students with greater amounts of measured ability are placed into high-ability groups. According to these researchers, the curriculum in low ability groups may be reduced in scope, content, and pace relative to high ability group classes. Mehan and Villanueva also state that tracking which is often an informal arrangement in elementary school, becomes institutionalized in middle and high schools. They additionally indicate that students usually assigned to the college preparatory track receive a distinct curriculum, which is separate from students who have been assigned to the vocational preparatory program.

The Role of Tracking Educational Achievement

Mehan (1992) found in his study conducted with 144 AVID graduates from the classes of 1990 and 1991, that 50% of these students were enrolled in four-year colleges. The local average for four-year college enrollment was 38% and the national average was 39%. Of the study's participants, 41% were Hispanic American, 12% were white, 28%

were African American, and the remaining represented other minority groups. According to Mehan, these statistics reveal that students who are homogeneously grouped and using AVID program components, benefit with academic success. Many graduate from high school and continue their education at institutions of higher learning.

The Critique of Tracking

Oakes, Gamoran and Page (1992) found that students from low socioeconomic status homes, with ethnic or language minority backgrounds are disproportionately represented in low-track and seldom move up to high track classes. They state that the distribution of students to high, middle, and low-ability groups or academic and general tracks seems to be related to race/ethnicity and socioeconomic status. These researchers also state that children from low-income or one-parent households, or from families with an unemployed worker, or from linguistic and ethnic minority groups, are more likely to be assigned to low-ability groups or tracks.

High-group students do more silent reading, and when they read aloud they are less likely to be interrupted (Allington 1980). According to Allington, teachers have the tendency to set different goals for students in different groups and tracks. High-group, high-track teachers more often state that they want their students to be competent and autonomous thinkers. In contrast, Gamoran (1987) reports that teachers of low-track classes more often emphasize basic literacy and computation skills and present topics commonly associated with everyday life and work.

Gamoran also communicates that the concept of tracking is tarnished through the perception that it perpetuates a societal caste system. Once students are placed into low achieving ability groups, experience indicates that they are seldom, if ever promoted to

high groups. Ability group membership in elementary school often carries track membership into middle school and even on into high school.

According to Reyes and Stanic (1985), the school curriculum benefits white males and students of high socioeconomic status more than minorities, females, and students drawn from low socioeconomic status. For the most part, minorities, females, and students of low socioeconomic status begin their school experience with positive attitudes (Reyes and Stanic 1985). They also indicate that differences in race, gender, and social class often begin to emerge during elementary school and increase by high school and college.

Untracking: Alternatives to Tracking

Manning (1990) suggests that young adolescents struggle with at-risk conditions such as poverty, low achievement, criminal behaviors, suicidal thoughts, unwanted pregnancies, and substance abuse. School programs must use various approaches to address at-risk conditions. Comprehensive approaches, and emphasis on self-concept, high expectations, improving social skills, teachers and learners agreeing on objectives, methods and materials, involvement of parents and families and a recognition of the relationship between motivation and success are some of the common essentials (Manning, 1990).

Additionally in Manning (1990), these programs must provide comprehensive approaches by addressing more than just one at-risk condition. Few, if any, at-risk conditions result from a single factor. Young adolescents often experience many developmental changes simultaneously, which can create problems for all ten to fourteen year olds (Price and Swanson, 1990). According to Price and Swanson, the physical,

cognitive, and psychosocial changes of young adolescents calls for comprehensive programs that address self-esteem, family involvement, age-appropriate sex education, substance abuse, continuation of basic skills, and education for living and thinking in a computer literate society.

Achievement

Gender and Race/Ethnicity and Achievement

Halle, Kurtz-Costes, Mahoney (1997) cite that gender and race/ethnicity appear to interact with family income and affect student achievement. They state that typically students from low socioeconomic and minority backgrounds are more likely to begin with lower academic performance and gradually fall further behind. According to their research, minority students are overrepresented among students who are retained, referred to special education, and most significantly who dropout of school. As indicated in the National Center for Educational Statistics (1996), 29.3% of students receiving some form of special educational support were black. Of this total percentage of students, 19.5% were black males, while 9.8% were black females. Ten percent of all students who dropped out of school in 1994, were black (National Center For Educational Statistics, 1996).

According to McBay (1992) blacks in general have a poor academic record. However, he states that academic achievement in this population varies along gender lines. More black women graduate from high school and more of them apply to college than black males. McBay reports that in 1988, 687,000 black women attended college compared to only 443,000 black men. Black women also seem to be more persistent in pursuing college credentials. In this same study, Mcbay also indicated that in 1989

almost twice as many black women as men earned an Associate of Applied Science Degree. The further up the academic ladder one goes, the fewer black students one finds. Yet, according to McBay, consistently there are more women represented than men at every level.

In 1992, 76 women graduated from 17 different AVID high school programs; 19 of those were black. Roughly 58 % of these women enrolled in four-year colleges. According to Mehan et al. (1994) this evidence suggests that black women in AVID go to four-year universities more often than do their black male peers.

Race/Ethnicity and Achievement

According to the National Center for Education Statistics (1996) there was substantial variation in the average performance among black and white student groups. White students had significantly higher scores, on average than did black students. The mean score for white students on the mathematics portion of the Stanford Achievement 1995 Test (SAT) was 498, while the mean score on the same test for blacks was 388. White students scored a mean of 448 on SAT verbal skills, while black students' mean on this section of the test was 356.

According to the National Center for Educational Statistics (NCES, 1996) the racial/ethnic composition of the student population contributes to the increasing linguistic and cultural diversity of our nation's elementary and secondary schools. This Center also indicates that along with the rich opportunities for learning that diversity brings, come challenges and risks associated with poverty, which is more concentrated among minority that non-minority students.

There is less student racial/ethnic diversity at the postsecondary level than at the elementary and secondary levels (National Center For Education Statistics, 1996). In 1992, one out of five postsecondary students was a member of a minority group, compared to one out of three public elementary/secondary students. The Center states that this difference is due both to lower college enrollment rates of minorities, with the exception of Asian/Pacific Islanders, and to their smaller representation in the college-aged population.

Student Attendance and Achievement

School attendance is an integral part of a child's success in school. If children are not in school, they do not learn. According to the National Center For Education Statistics (1996), an average of 6% of all students were absent on a typical school day in 1993-1994. In each urban city, students in public schools were more likely to be absent than students in private schools. In public schools, the absentee rate was highest in urban settings and lowest in rural schools. Statistics from this same study express that in public urban schools settings, the absentee rate increased with school levels along with the percentage of students who were eligible for free or reduced-price lunch. Further examination of these same statistics indicate that in public elementary, middle, and combined schools, absentee rates generally increased with rates of student poverty. This poverty rate is measured by the percentage of students eligible for free or reduced-price lunch. In urban public high schools with a high poverty level (schools where more than 40% of students were eligible for free or reduced-price lunch) the average absentee rate was 12%. In these high schools, 59% of teachers considered absenteeism, 47%

considered tardiness, and 40% considered cutting class to be a serious problem (National Center for Educational Statistics, 1996).

Governmental and District Achievement Studies

According to MacQuirrie (1994) students who are at risk for academic failure are a national concern for educators and non-educators alike. There has been increased attention drawn to students who graduate from high school functionally illiterate. The high dropout rate among high school students has also been a significant issue. Much has been written about academic failure being a result of students' race/ethnicity.

MacQuirrie indicates that a disproportionate number of racial/ethnic minority students are at risk for academic failure and that a disproportionate number of male students are at risk for school failure.

MacQuarrie's (1990) report, which uses 1989 data, shows the median percentile scores of black, Native American and Hispanic students to be well below those of white students. The median scores for white fourth and tenth grade students were above the fiftieth percentile, while the median scores for blacks, Native American, and Hispanic students fell within the thirtieth to fortieth percentile range.

Reading Achievement

Studies completed in reading show females outperforming males in reading ability. According to Yarborough and Johnson (1980) females have demonstrated higher verbal skills and higher scores on standardized tests, especially in the primary grades, and they learn to read at an earlier age than males. Additionally, a lower percentage of females are referred to remedial reading programs than males. Yarborough and Johnson

conclude that males and females are equally able to acquire reading skills, but females continue to outperform males especially in the areas of spelling and language arts.

These researchers also found that females scored significantly higher on the Nelson, Gates, Macginitie and Spache reading tests. The differences found between the male and female scores were consistently significant. The study also found that males were frequently referred to special education classes. At the time of his study, males represented 51.2% of the students assigned to special education classes within this studied school district. Black students represented 18.5% of that assigned population.

According to Yarborough and Johnson (1980) four explanations are predominately given for the discrepancy between male and female reading ability. The first states that females are more advanced developmentally; therefore they are more ready to read. The second contends that the material in basal readers is more appealing to females than males, and therefore, the male becomes bored with the material. The third explanation is that males have difficulty identifying with their predominately female elementary teachers, and that the female teachers have difficulty relating to male students. The final reason that is given by these researchers contends that cultural expectation is the major reason for males achieving lower reading scores.

Yarborough and Johnson also state that reading is considered by many to be a feminine activity, contrary to the prevailing attitude in Germany where the male/female reading achievement is reversed from that found in the United States. In the traditional male role, males are expected not to be too quiet, docile, or cooperative. These researchers express that males are expected to assert their independence from their mothers and female teachers, while females are encouraged to be passive, docile, and

cooperative. Therefore presenting a case that the traditional female role is more conducive to the school setting.

Mathematics Achievement

Studies in mathematics and science show males exceeding females on non-verbal perceptual tasks. Males tend to have higher visual spatial skills than females (Hyde, 1981). Males have demonstrated superiority in geometry and measurement (Hanna, 1986). While the difference was not large, it was statistically significant. Hanna (1986) concluded that males could have had more out of class experiences, such as model building, than females, which should explain the difference. Hanna indicated at the time of his study only half of the geometry items had been taught. This implies that out of class experience may be one explanation for the disparity in achievement between males and females.

In mathematics achievement, gender and race/ethnic differences were determined to be significant by Moore and Smith (1987). Overall males surpassed females in the areas of mathematics knowledge and arithmetic reasoning. When analyzed according to grade completion, there were no significant gender differences for participants who had completed grade kindergarten through grade eight. A difference favoring males, was apparent for those who had completed grades nine through twelve (Moore and Smith, 1987).

Also according to the study by Moore and Smith, when examined by race/ethnicity, white students scored higher than Hispanics, who scored higher than the black students did. A gender difference was also observed within each racial/ethnic group. This difference was more pronounced among the Hispanic students, but evident

in all groups. Moore and Smith also conclude that the combination of gender and race/ethnicity were statistically significant, and black female students scored the lowest in mathematics achievement.

The National Center for Educational Statistics (1997) reports that the mathematics proficiency of both female and 9-year-old males has increased since the early 1970s. The gap in scores that previously favored girls had disappeared. Between 1973 and 1994, the average mathematics proficiency of both 9-year-old girls and boys increased 10 and 14 points, respectively. In 1994, there was no measurable difference in the mathematics proficiency of female and male 9-year-olds. However, according to the Center, the achievement gap widens during the adolescent years. Their data indicates that in 1994, 13 year-old boys scored on average 5 scale points higher than girls of the same age in mathematics and science did. In both mathematics and science, 17-year-old females have consistently scored lower, on average than 17-year-old males. In 1994, females scored 5 scale points lower than males on a nationally normed mathematics and science examination.

Socioeconomic Status and Student Achievement

Renchler (1993) states that since the late 1960s, a variety of federal, state, and local programs have been designed and implemented in an effort to offset the profound difficulties children from economically and socially disadvantaged backgrounds encounter when they enter our public schools. Many of these programs prepare preschool children of low socioeconomic status (SES) for the challenges they face as they begin their education. Renchler emphasizes that programs must seek to improve the achievement levels of low-SES students who are already struggling in schools that lack

the resources to provide them with the special attention they need for success.

The United States has a much higher incidence of child poverty than do other Western nations, and the percentage of impoverished children in the population has continued to increase during the past two decades (Cohen 1993). Although young people constitute only 25% of the population, they represent almost 40% of those persons classified as poor. Haveman and Wolfe, (1992) indicate that 16% of all white children and 44.8% of all black children were living in poverty in 1990. Zigler and Black (1989) express that this life in poverty is associated with other negative conditions, such as poor nutrition and high probability of living in neighborhoods with high rates of crime and drug dependence. These researchers share that numerous efforts have been made to improve child welfare through direct intervention with parents. They also indicate that such interventions have included material supports, emotional encouragement, information presentation, therapeutic guidance, and skill development

According to McCormick (1989) most of these impoverished children are black (43.1%) or Hispanic (39.6%). The National Center for Children in Poverty (1990) found that 31% of the children living in poverty resided in large cities. According to Carta (1991) the price these children pay for being born poor is enormous. Carta states that children living in inner cities are much more likely to have educationally damaging circumstances as part of their life experiences than are higher SES children. The dangers they face include: (a) prenatal exposure to drugs and AIDS, (b) low birth weight, (c) poor nutrition, (d) lead exposure, and (e) personal injuries and accidents. Poor inner city youth are seven times more likely to be the victims of child abuse or neglect than are high-SES children (Carta, 1991).

Any one or a combination of these factors puts low socioeconomic status students at great risk for having substandard levels of academic achievement. Alexander and Entwisle (1988) express that low-income black children already lag behind academically in the early elementary years, and are three times more likely to be in classes for the mentally retarded, and are at least twice as likely to dropout of school than their more advantaged white peers. These distressing disparities are noted despite a long-standing commitment among blacks to the belief that education could eliminate poverty and eventually end racial discrimination (Kantor and Lowe, 1995).

Not unexpectedly, these circumstances lead these same students to dropout of school far more frequently than their higher socioeconomic counterparts (McCormick, 1989). According to McCormick (1989) as many as one million at-risk students dropout each year.

Grissmer (1994) explains that some of the characteristics most often worried about, such as working mothers and single parents, turn out not to have much effect on student achievement when taken alone. For example, the simple fact of living in a single-parent household may not hurt achievement, especially if the alternative is living with two parents in conflict. He continues to express that the drop in income associated with the creation of a single-parent family probably does have a negative effect on student achievement.

Grissmer's research using national demographic trends between 1970 and 1990 confirmed that there had been changes for the better in two of the most influential family characteristics. Mothers in 1990 were better educated than their 1970 counterparts. The data show that 16% of mothers of 15-18 year olds in 1990 were college graduates,

compared with 7% in 1970. Also, only 17% of mothers in 1990 lacked a high school diploma, compared with 38% who lacked a diploma in 1970. Changes in family size were also dramatic. In 1990, 73% of teenage children lived in families with either no siblings or one; in 1970, only 48% did (Grissmer, 1994). This researcher cites that changes in the characteristics of families today may account for some of the increases in standardized test scores. Notably, a dramatic increase in the education levels of black mothers and smaller family size account for about one-third of the gains in achievement made by black youths.

It is reinforced by Grissmer that standardized test scores for blacks and Hispanic teenagers improved significantly between the mid-1970s and 1990, narrowing the gap with white students, who made smaller gains. He reiterates that the average mathematics and reading scores of students 13 to 17 years of age increased the equivalent of 3 percentage points for white students, 11 points for Hispanic students and 19 points for black students.

AVID Program Components

The creators of the Advancement Via Individual Determination (AVID) Program state that certain program components are essential, if AVID is to be successful. Swanson (1992) states that student selection, parental involvement, cooperative learning and the implementation of a functional curriculum are vital. Guthrie and Guthrie (1994) indicate that adult student tutoring, parental tutoring, peer tutoring and mentoring are as important as the aforementioned components.

Student Selection

According to Guthrie (1994) student selection is a key element of AVID and must

be emphasized in AVID training and development of the program. In the middle level schools, following AVID selection guidelines is critical. In the study by (Guthrie, 1994) three clear findings emerged. First, successful student selection requires that all those involved are well informed. Selection and recruitment is a matter of education and buy-in all around, including the AVID elective teachers, school administrators, other teachers, and counselors. Guthrie (1994) also states that where feeder schools are involved, as in selecting incoming sixth or seventh graders from the elementary school, AVID program staff need to visit, recruit, and develop relationships with those at the elementary school. This is so that all staffs may be well informed.

Secondly, according to Guthrie student selection procedures must be carefully followed. Guthrie's study indicated that some AVID teachers bent the AVID selection criteria on occasion, invariably with less than good results. He gave the example of an AVID teacher at one specific school that said that when she began her program a few years ago, she targeted a largely "at risk" population of students. She selected students with a GPA of 1.5 to 2.0 with behavior problems. According to Guthrie, she found that those students were not successful and has since adjusted her approach. Guthrie's findings indicated that students, who are too low academically, could not meet the expectations, and eventually have to be dropped from the program. AVID is not a program for students who are in jeopardy, but for those students in the middle, with the potential to be academically successful.

Thirdly, Guthrie found in the 12 schools in his study that AVID as a student choice as an elective was very important. Staff in these schools learned that unless students really wanted to enroll in AVID and make a commitment to the program, they

did not succeed. Therefore, several of Guthrie's study schools ensured that student's chose AVID as their elective, rather than simply scheduling them into it.

The risks of tampering with AVID student selection criteria have been documented at the high school level (Guthrie and David, 1994). Teachers in that study found that students who did not meet the minimum stanine or GPA criteria were seldom successful in AVID. Also according to Guthrie and David, middle level teachers have had similar experiences. Based on their study, interviews, and student and family commitment are as critical as the GPA, and other objective measures in identifying middle level AVID students.

Parental Involvement

Davies (1991) has defined parental involvement from a shifting perspective. As society restructures itself, as communities restructure themselves and as schools restructure, parental involvement also is being transformed (See Table 1).

Table 1

Changing Definitions of Parental Involvement

Old Paradigm	New Paradigm
FROM	TO
Parent Focus	Family Focus
Family	Community Agencies
School Setting	Home/Neighborhood
Eager Parents	Hard-to-reach
Families	Teacher/Administrator
Agendas	Family Priorities
Deficit View of Urban Families	Emphasis on Inherent Strengths of Families

Adapted from Davies (1991).

According to Davies (1991), this table illustrates the changing nature of families and communities. Davies also indicates that nontraditional family units are much more common than they were in the 1950s, but alternative family structures are effective and should be recognized as such. There are many advantages when parents play an active role in the educational process. Children spend much more time at home than at school. Parents know their children intimately, and can interact with them more on a one-to-one basis (Davies, 1991).

Rich (1985) indicates that the home environment is more familiar and less structured than the classroom, and offers many more “teachable moments.” Children whose parents are involved in their formal education have many advantages. They have better grades, test scores, long-term academic achievement, attitudes, and

behavior than those with disinterested mothers and fathers (Henderson, 1988).

Many studies underscore the point that parent participation in education is very closely related to student achievement. Rich's study found that using parents as tutors brought significant and immediate changes in children's I.Q. scores. Other research projects found that community involvement correlated strongly with school-wide achievement and that all forms of parent involvement helped student achievement.

Coulombe (1995) states that the mother's employment status was not consistently associated with indicators of student achievement, behavior, or extracurricular activity. However, mothers who were unemployed but looking for work were somewhat more likely to have children who had repeated a grade, and students with employed mothers were slightly more likely to have participated in school-based or out-of-school activities. Also according to Coulombe no matter whether the mother was employed full-time, part-time, looking for work, or not in the labor force, higher parental involvement was associated with better student outcomes.

It may be argued that parents of older students, though appearing uninvolved in school, actually engage in other forms of supportive activity. This may be the case for some families; for example, Asian families in which students are often encouraged to work hard at school assignments, but parents may be reluctant to assert themselves too overtly into what they view as the proper domain of teachers and school administrators (Cutright, 1989). Furthermore Cutright states that parents who do not come to Parent Teacher Association (PTA) meetings or serve as classroom volunteers also tend not to do things like discussing current events at home or encouraging their teenagers to take more challenging courses at school.

The tendency for parents to withdraw from active involvement in their adolescents' schools may stem from a belief that the teenagers no longer need their involvement. After all, the adolescent years are a time when young people undergo a transformation from dependent children to independent young adults (Cutright, 1989). The knowledge and skills that older students possess are far greater than they had in elementary school, and they are more actively engaged with friends and peer groups. These include extracurricular activities and in many cases, paid employment. Yet, Cutright's data shows that if parents wish to increase the chances of their adolescents doing well in school, they should remain more involved in the schooling process and other aspects of their teenagers' lives.

Research suggests that healthy adolescent development, the ability to resist negative peer pressures, and success in school is all facilitated when parents maintain close ties with their adolescent children. What seems to work best is a warm relationship that acknowledges and respects the adolescent's need for more independence, yet still places demands on the young person for hard work and good behavior (Cutright, 1989).

According to Steinberg (1993) another reason why parents of older students are relatively uninvolved in school is that many high schools do not require and some do not even encourage active parent participation in school activities. Steinberg also states that parent involvement tends to be higher in some kinds of schools, namely, private schools, elementary schools, smaller schools, and schools with a predominance of middle-class, non-minority students, than in other kinds of schools. This suggests that schools with low levels of parental participation may be able to boost participation levels by adopting some of the features that characterize high-involvement schools. Examples might

include: (a) having a teacher who knows the individual student and family well, (b) insuring that the school ascertains and respects the values and preferences of parents, and (c) creating an atmosphere in which active parental participation is expected and welcomed (Steinberg, 1993).

Whether or not they are aware of it, parents contribute to the learning process of their children (Curriculum Report, 1990). The parents of some at-risk youth realize the part they can play in making school a worthwhile experience for them, but for one reason or another feel helpless to play a more active and influential role. According to this report, guidance departments and other support personnel can spend more effort tutoring such parents in steps they can take to develop closer rapport with their youngsters and activities that will reinforce both the school's curriculum and their children's academic and social growth.

Hollifield (1995) indicates that it is most important for schools to find ways to involve parents in their children's education. He states that the implications of this for middle schools are clear. Middle schools need to involve all parents, including the poor, minorities, and single parents. His research findings showed that all parents want to be involved. Low socioeconomic and minority parents report as much interest as other parents do in wanting to help their children succeed in school.

Hollifield emphasizes that single and working mothers may be less likely to come to school for meetings or workshops, but they are likely to spend time helping their children with schoolwork at home. The research also shows a gap between what parents want to do and what they know how to do. Most parents report that they are not sure how

to get involved, or how to provide the support necessary to facilitate their children's school successes.

Griffith (1996) emphasizes that parental participation can be influenced by parents, teachers, and students. He indicates that parental participation usually involves grass roots, low-cost programs that are presumed to have positive effects on multiple domains. Griffith explains that parent participation fosters positive parent attitudes and behavior, quality of parent-school and parent-teacher relationships, and academic achievement. Comer and Haynes (1991) found parental participation in a child's education to be essential for effective teaching and learning. They characterized schools as providing children with opportunities for positive interactions with adults and other school children that would transfer to the children's home life and other learning environments.

Stevenson and Baker (1987) found in their study involving 179 grade school children, parents and teachers, a positive relationship between parental involvement and achievement student. They also observed that parents of high educational attainment whose children were in lower grades reported higher levels of involvement than did parents' of low educational attainment. Fuehrmann, Keith, and Reimers (1989) conducted a longitudinal study of high school seniors to determine the effects of parental involvement on student grades. In their study, parental involvement was measured by five items that asked students how often their parents were involved in their daily lives. Analyses showed that parental involvement resulted in students' achieving higher grades and spending less time watching television and more time on homework. They also found these relations to be similar for different ability groups.

Cooperative Learning

According to the Curriculum Report (1990) the essence of cooperative learning is developing and assigning a group goal to a team of students and then rewarding the entire group on the basis of their work according to preset expectations or standards. That is, individuals are rewarded or graded on the basis of the total group's performance or achievement. Cooperative learning is especially beneficial for heterogeneous student populations because it promotes liking and learning among young people of varying academic abilities and backgrounds and improves student motivation, subject matter mastery of social development and student self-esteem (Curriculum Report, 1990).

Also according to the same report a teacher's responsibilities in a cooperative learning context are: (a) selecting the most appropriate group size for lesson or project, (b) selecting students for each learning cluster, (c) arranging the classroom so that clusters will not interfere with other's activities and learning, (d) explaining the task to be undertaken and the goal of structure to students, (e) providing appropriate directions, materials, supplies and equipment, (f) observing student-to-student reactions and intervening as needed as a consultant or monitor, and (g) evaluating group products using established criteria.

Implementation of a Functional Curriculum

A "functional curriculum" refers to teaching basic skills and attitudes by utilizing the community setting, community personnel, field trips, and problem-solving activities. AVID, according to Guthrie (1994) provides a multi-faceted curriculum that includes organizational and study skills, motivation, college, and career awareness activities, as well as content area assistance. All of these components must be designed specifically to

ready at-risk students to be self-sufficient young adults at whatever point they choose or are forced to cut their formal school connection (Guthrie and Guthrie, 1994).

According to the Curriculum Report (1990) at-risk students frequently do not see the relevance of their school's curriculum to their out-of-school lives. Linking skills and competencies taught in the classroom to those used in the outside world increases motivation for many young people. A more specific example of a functional curriculum design that can be used with all students is Life-Centered Career Education (LCCE). This curriculum has three principal areas: Daily Living Skills, Personal-Social Skills, and Occupational Guidance and Preparation Skills. According to this same Curriculum Report, the program identifies 22 competencies which are: Employability Skills, which are those essential cognitive and affective abilities that are necessary for successful transition from school to work and beyond. The skills identified by the (LCCE) which are essential for job seeking, job placement, and job retention are: (a) socialization skills, which are designed to help young people effectively manage their relationships with their peers, parents, teachers, and employers, (b) communication skills, to help students improve their use of oral and written language, (c) financial management skills, to assist learners in managing their personal finances and establishing a better understanding of everyday money matters, (d) values clarification abilities, to aid young people in examining the values they hold while they begin to develop those values and more widely held by society, (e) job procurement and retention skills, which assist learners in seeking and holding employment when the time comes to enter the world of work, and (f) emphasizes improving study skills, which help students acquire the skills necessary to help facilitate their own learning.

Parent Tutoring

Rich (1985) indicates that tutoring is probably the best way for parents to participate in public education. Intensive, one-to-one teaching is highly effective, and unlike meetings, it does not take parents away from their children and their home. Tutoring may be as simple as reading a book or discussing a television show. It may entail meeting with a teacher to determine how to help with homework, or it may mean mastering a detailed curriculum written by specialists in home learning (Rich, 1985).

Parents' attitudes and expectations toward education can be as important as explicit teaching activities. The American Association of School Administrators (1988) suggests that homes promote a curriculum of high expectation, emphasize achievement, role modeling the work ethic, encourage providing a place for study, establish and practice structured routines, monitor television, limit after school jobs, and discuss school events.

Peer Tutoring and Mentoring

According to the Curriculum Report (1990) peer tutoring is a technique in which at-risk students are teamed one-on-one or in very small groups with other students. Research indicates that at-risk students who are involved in well-planned and supervised peer tutoring situations show: (a) gains in their grade-point averages, (b) improvement in reading, mathematics, writing, communication, and study skills, (c) increases in reading comprehension levels, (d) improvement in their ability to identify long-range goals, and (e) gains in self-confidence and in interpersonal skills.

This same report indicates that there is more involved than merely putting a few students at a table, to successfully create a peer-tutoring concept. A few prerequisites for

a successful program are: (a) program philosophy and policies, (b) criteria for selecting tutors, (c) criteria for selecting students to be tutored, (d) role and limitations of tutors, (e) a process for matching students and tutors, (f) tutor-training sessions, (g) supervision of tutors on an ongoing basis, (h) community awareness about the program, (i) parental awareness that their students are involved, and (j) evaluation of the program's effectiveness as a whole and for individual participants.

Ethnicity, Gender and School Attendance

According to Phillips (1997), the best predictor of student's attendance in eighth grade is students' attendance in seventh grade. Phillips explains that students' socioeconomic status, their elementary school test scores, and their seventh-grade grades are also positively related to attendance. Blacks tend to have lower attendance than European Americans do, and boys tend to have lower attendance than girls do (Phillips, 1997).

The finding that blacks miss more days than whites is consistent with other studies. Bryk and Thum (1989) found higher rates of absenteeism among blacks in their high school sophomore sample. Heyns (1978) found that black sixth and seventh graders in Atlanta had higher rates of absenteeism than whites.

Bryk and Thum (1989) found that girls missing more days of school than boys, might be age specific. They state that gender was unrelated to absenteeism among high school sophomores. It is again their finding, that girls may be more absent than boys in eighth grade, with everything else being equal, because of puberty changes such as menstruation.

Poor academic performance is one of the most often cited correlates of and reasons given for dropping out of school (Ekstrom, Goertz, Pollack, and Rock, 1986). They indicate that academic performance as measured by grades generally heads the list of the variables found to be most highly related to subsequent dropout behavior. Not only has poor performance been associated with the initial act of dropping out, it also has been related to high school dropouts subsequent decisions of whether to return to high school to complete their diplomas (Kaufman, 1989).

Academic performance could also be considered a primary element of unsuccessful school outcomes relative to poor attendance behaviors (Finn, 1989). Researchers such as Barrington and Hendrick (1989) have reported connections between measures of academic performance in early elementary school and poor attendance and dropout behavior before high school graduation.

Chapter Summary

In this chapter, researched information was presented regarding student achievement and attendance with respect to gender, race/ethnicity, and group membership. Information aligned to the role of tracking students for the purpose of achievement was also discussed. Each of these educational alternatives has elements, which seek to facilitate student learning, as do the components of the AVID program.

CHAPTER 3

Methodology

The data from the Stanford 9-TA Achievement Test, which was administered to the 1996-1997 eighth grade student cohort within one diverse socioeconomic urban mid-sized school district, was collected and statistically analyzed. The researcher analyzed standardized testing and attendance data, collected on the 1996-1997 eighth grade student cohort, which consisted of 398 students. In this chapter data collection procedures, population and sample (s), instrumentation, and research methodology are described.

Data Collection Procedures

Permission to access the Stanford 9-TA Partial Battery Achievement Test data for this student cohort for the purpose of statistically analyzing it, was requested from the Superintendent in this mid-sized urban school district. In collaboration with the Testing and Evaluation Department within this same school district, the student data for the past three school years was collected and statistically analyzed.

The Stanford 9-TA data in the areas of reading, language, and mathematics, were collected and analyzed by gender, (males, females), race/ethnicity (blacks, whites) and group membership (Talented and Gifted, AVID). Data regarding students' free, reduced, or paid lunch status was also requested and analyzed.

Students' attendance data over this same three-year time span were also requested by gender (males, females), race/ethnicity (blacks, whites) and group membership (Talented and Gifted, AVID). Data regarding students' free, reduced, or paid lunch status was also requested.

The socioeconomic backgrounds of these students are varied. Each had been enrolled within this same school district either as AVID or Gifted and Talented, since the 1994-1995 through 1996-1997 school years. Statistical data on students not enrolled in either program for this length of time were not included in the data analyzed.

In 1995-1996 there were 32,754 students enrolled in this mid-sized urban school district. There were 17,416 students in pre-kindergarten through the fifth grade. The middle schools were populated with 7,394 students and 7,944 students were in its high schools. One percent (234) of the students were American Indian, while 2% (790) were of Asian decent. Sixteen thousand, six hundred thirteen (51%) were African-American, while (3%) 1,027 were Hispanic and 14,090 (43%) were Caucasian.

Population and Samples (s)

During this same school year, 14,313 (44%) of the total population of students received free or reduced priced lunches. One thousand, eight hundred twenty-five (6%) of these students were identified to receive talented and gifted services. A total of 3,196 students (10%) were enrolled in resource and self-contained Special Education classes. In the Title I Program, there were a total of 2,308 students enrolled. This represents 7% of the total district's (Pre-Kindergarten-12) enrollment. Included in this figure were 1,488 First Step students and 820 students in the Title I reading and Reading Recovery program.

Instrumentation

During the test construction phase of the Stanford 9-TA, each test item underwent intense review by content and curriculum specialists to ascertain that they were well constructed. This helped assure that the Stanford 9-TA items adhered to the test

blueprint, and were seemingly free from cultural, ethnic, gender, and racial biases with regard to the content, style, and vocabulary. The test items also were subjected to statistical item analysis and were examined to ensure that they functioned similarly by gender and race/ethnicity. The test items cover a broad range of material within each subject area. Many items incorporate visual aids, while several require students to apply knowledge, and others ask them to draw parallels between two different sets of variables (Conoley and Impara, 1995). According to Conoley and Impara, the Stanford 9-TA is a solid instrument that can provide schools with useful information about how well their students are satisfying the desired outcomes specified by curriculum and content experts relative to other students nationwide.

Kuder-Richardson-20 (KR-20) measures of internal consistency are given as evidence of reliability. KR-20 coefficients for each sub-test of the Stanford 9-TA and composite tests are provided separately for fall and spring administrations and test forms. In general, the KR-20s for all ages and tests, most subscale coefficients are in excess of .85 or .90, and the total scores and composite scores are almost all in excess of .95 (Conoley and Impara, 1995).

Scores are available for each Stanford 9-TA subtest, as well as composite scores for total reading, mathematics, and language and overall scores for the Basic or Complete testing battery. Several types of scores are available with the Stanford 9-TA. In addition to typical raw scores, percentile ranks, and scaled scores, the Stanford 9-TA provides stanines, grade equivalents, and normal curve equivalents (Conoley and Impara, 1995).

Research Hypotheses

While Chapter 1 listed the two overall guiding research questions, noted below are the corresponding null hypotheses, which will be tested.

Guiding Research Question:

1. Is there a statistically significant interaction among gender (males, females), race/ethnicity (blacks, whites), and group membership (Talented and Gifted, AVID) with respect to Stanford 9-TA total NCE achievement scores after controlling for initial differences in socioeconomic status?

Null Hypotheses:

1a. There is no statistically significant difference between gender (males, females) with respect to Stanford Basic Battery NCE scores after controlling for initial differences in socioeconomic status.

1b. There is no statistically significant difference between race/ethnicity (blacks, whites) with respect to Stanford Basic Battery NCE scores after controlling for initial differences in socioeconomic status.

1c. There is no statistically significant difference between group membership (Talented and Gifted, AVID) with respect to Stanford Basic Battery NCE scores after controlling for initial differences in socioeconomic status.

1d. There is no statistically significant interaction between gender (males, females) and race/ethnicity (blacks, whites) with respect to Stanford Basic Battery NCE scores after controlling for initial differences in socioeconomic status.

1e. There is no statistically significant interaction between gender (males, females) and group membership (Talented and Gifted, AVID) with respect to Stanford Basic

Battery NCE scores after controlling for initial differences in socioeconomic status.

1f. There is no statistically significant interaction between race/ethnicity (blacks, whites) and group membership with respect to Stanford Basic Battery NCE scores after controlling for initial differences in socioeconomic status.

1g. There is no statistically significant interaction among gender (males, females), race/ethnicity (blacks, whites), and group membership (Talented and Gifted, AVID) with respect to Stanford Basic Battery NCE scores after controlling for initial differences in socioeconomic status.

Null hypothesis 1g is deemed most important as it represents the interaction among all independent variables to be investigated in this study.

Guiding Research Question:

2. Is there a statistically significant interaction among gender (males, females), race/ethnicity (blacks, whites), and group membership (Talented and Gifted, AVID) with respect to attendance after controlling for initial differences in socioeconomic status?

Null Hypotheses:

2a. There is no statistically significant difference between gender (males, females) with respect to attendance after controlling for initial differences in socioeconomic status.

2b. There is no statistically significant difference between race/ethnicity (blacks, whites) with respect to attendance after controlling for initial differences in socioeconomic status.

2c. There is no statistically significant difference between group membership (Talented and Gifted, AVID) with respect to attendance after controlling for initial differences in socioeconomic status.

2d. There is no statistically significant interaction between gender (males, females) and race/ethnicity (blacks, whites) with respect to attendance after controlling for initial differences in socioeconomic status.

2e. There is no statistically significant interaction between gender (males, females) and group membership (AVID, Talented and Gifted) with respect to attendance after controlling for initial differences in socioeconomic status.

2f. There is no statistically significant interaction between race/ethnicity (blacks, whites) and group membership (Talented and Gifted, AVID) with respect to attendance after controlling for initial differences in socioeconomic status.

2g. There is no statistically significant interaction among gender (males, females), race/ethnicity (blacks, whites), and group membership (Talented and Gifted, AVID) with respect to attendance after controlling for initial differences in socioeconomic status.

Null hypothesis 2g is deemed most important as it represents the interaction among all independent variables to be investigated in this study.

Data Analysis

Is there a statistically significant interaction among gender (males, females) race/ethnicity (blacks, whites), and group membership (Talented and Gifted, AVID) with respect to achievement and attendance after controlling for initial differences in socioeconomic status is the major research question in this study. This question was statistically analyzed using two three way ANCOVAs (Gall, Borg, and Gall, 1996), with each consisting of a 2 x 2 x 2 factorial design. A .05 alpha level was employed to test for statistical significance. All collected data were analyzed using the Statistical Package for the Social Sciences (SPSS, 1995).

Chapter Summary

This chapter presented the population and sample (s) examined, and the instrumentation utilized. It also discussed the data collection procedures, the research hypotheses investigated, and the methods of analyses employed.

CHAPTER 4

Findings

The focus of this study was to determine if there was a statistically significant interaction among gender (males, females), race/ethnicity (blacks, whites), and group membership (AVID, Talented and Gifted) with respect to middle school student achievement and attendance after controlling for initial differences in socioeconomic status.

Descriptive Statistics

Initially, 455 students' Partial Battery Stanford 9-TA student test scores, were selected to be analyzed. However, some test scores were not analyzed because of missing or incomplete achievement or attendance data. Some data were also eliminated because the data were on students of races or ethnic backgrounds other than black or white. Of the total group whose achievement or attendance data were analyzed, 152 (38.2%) participated in the Talented and Gifted Program, while 246 (61.8%) were AVID students. In the total population, there were 180 males (45.2%) and 218 females (54.8%). Of the 398 students whose data were analyzed, 166 (41.7) of these students were white, and 232 (58.3%) were black. One hundred seven (26.9%) of these students received free lunches, 36 (9.0%) received reduced lunches, and 255 (64.1%) paid for their school lunches. (See Table 2.)

Table 2
Descriptive Statistics of Overall Student Sample

Variable	N (%)	N (%)	N (%)	Total
Gender	Males	Females		
	180 (45.2%)	218 (54.8%)		398
Race/Ethnicity	Blacks	Whites		
	232 (58.3%)	166 (41.7%)		398
SES	Free Lunch	Reduced Lunch	Paid Lunch	
	107 (26.9%)	36 (9.0%)	255 (64.1%)	398

The basic total mean score for all students was 58.7 and (SD 17.3). Their reading mean score was 62.4 (SD 18.4). The mean score for this same language arts group was 60.9 (SD 22.0). Their mathematics mean score was 56.0 (SD 21.1) and their mean score for average attendance was 174.5 (SD 13.8). (See Table 3.)

Table 3
Statistical Frequency Data

Variable	Mean	SD
Basic Total	58.7	17.3
Reading Total	62.4	18.4
Language Total	60.9	22.0
Mathematics Total	56.0	21.1
Attendance Total	174.5	13.8

There were 152 (38.2%) students in the TAG program. Seventy-eight of them (51.3%) were males, while 74 (48.7%) were female students. One hundred twenty-three (80.9%) of the students in this group were white, while 29 (19.1%) were black. Twelve (7.8%) of these students received free lunch, 3 (1.9%) received reduced lunch, while 137 (89.3%) of this Talented and Gifted group paid for their lunches.

Two hundred forty-six students comprised the AVID group. One hundred two (41.5%) of these students were male, while 144 (58.5%) were females. Forty-three (17.5%) of these students were white, and 203 (82.5%) were black. One hundred-nine (38.1%) received free lunch, 34 (11.9%) received reduced lunch, and 143 (50%) paid for their lunches. (See Table 4.)

Table 4
Analysis by Group Membership

Variable	Levels	TAG	AVID
Gender	Male	78 (51.3%)	102 (41.5%)
	Female	74 (48.7%)	144 (58.5%)
Race/Ethnicity	Black	29 (19.1%)	203 (82.5%)
	White	123 (80.9%)	43 (17.5%)
SES	Free Lunch	12 (7.8%)	109 (38.1%)
	Reduced Lunch	3 (1.9%)	34 (11.9%)
	Paid Lunch	137 (89.3%)	143 (50.0%)

For the Talented and Gifted students, the basic total Stanford 9-TA score yielded a mean of 75.9 (SD 10.8). Of those students taking the Stanford 9-TA reading component, the mean score was 78.3 (SD 12.9), the language arts component mean score was 80.1 (SD 14.4). The mathematics component mean score was 75.6 (SD 15.9). The average daily attendance mean score for this group was 175.7 (SD 11.2). (See Table 5.)

Table 5
Statistical Frequency Data for Talented and Gifted Students

Variable	Mean	SD
Basic Total	75.9	10.8
Reading Total	78.3	12.9
Language Total	80.1	14.2
Mathematics Total	75.6	15.9
Attendance Total	175.7	11.2

For the AVID students, the basic total Stanford 9-TA score yielded a mean of 48.1 (SD 10.9). Of those students taking the Stanford 9-TA reading component, the mean score was 52.2 (SD 13.3). The language arts component mean score was 49.0 (SD 17.0), and the mathematics component mean score was 43.8 (SD 13.3). The average attendance mean score for this group was 173.8 (SD 15.2). (See Table 6.)

Table 6
Statistical Frequency Data for AVID Students

Variable	Mean	SD
Basic Total	48.1	10.9
Reading Total	52.2	13.3
Language Total	49.0	17.0
Mathematics Total	43.8	13.3
Attendance Total	173.8	15.2

Treatment of Missing Student Data

Some students Stanford 9-TA Partial Battery Achievement Test scores were deleted from the final analysis because of missing data. This deletion included students who did not take any or all portions of the Stanford 9-TA Partial Battery Achievement Test or who were not participants in either the Talented and Gifted or AVID groups for the school years, 1994 through 1997. Fifty-seven student test scores were omitted from the analyses because of not meeting one or more portions of the above criteria. Also, student test scores of race/ethnicity other than black or white were not considered in the data analysis. These twenty-six students, if included, would have accounted for (5.7%) of the total population of scores analyzed. (See Table 7.)

Table 7
Number of Students Excluded from the Study

Variable	Number	Percent
Basic Total	57	12.5%
Reading Total	57	12.5%
Language Total	57	12.5%
Mathematics Total	57	12.5%
Race/Ethnicity (Other)	26	5.7%

Analysis of Covariance

Two three-way ANCOVAs were employed for each component of the Partial Battery of the Stanford 9-TA Achievement Test and attendance. Therefore the adjusted dependent variables are basic total NCE achievement, reading total NCE achievement, language total NCE achievement, mathematics total NCE achievement and attendance. The independent variables in this study were gender (males, females), race/ethnicity (blacks, whites) and group membership (Talented and Gifted, AVID). The covariate in this study was SES.

Basic Achievement Analysis of Covariance

The first analysis of covariance (ANCOVA) procedure examined basic total NCE scores. The ANCOVA summary table for basic total NCE achievement is shown in Table 8. The data were examined to determine if any two or three-way interactions were significant. (See Table 8.)

Table 8
Basic Achievement Analysis of Covariance

	<u>SS</u>	<u>df</u>	<u>MS</u>	<u>F</u>	<u>Sig. of F</u>
Covariate					
SES	899.5	1	899.5	8.5	.004*
Main Effects					
Gender	14.2	1	14.2	.1	.713
Race/Ethnicity	2882.7	1	2882.7	27.3	.001*
Group	22587.7	1	22587.7	214.0	.001*
2-Way Interactions					
Gender x Race	2.5	1	2.5	.1	.878
Gender x Group	15.8	1	15.8	.1	.698
Race x Group	406.7	1	406.7	3.8	.050*
Gender x Race x Group	8.9	1	8.9	.1	.771
Within	41056.4	389	105.5		
Total	119162.0	397	300.1		

* $p \leq .05$

It was hypothesized that there would be no statistically significant difference at the .05 alpha level in basic total NCE Stanford 9-TA achievement scores between students in the Talented and Gifted and AVID programs. This hypothesis was not substantiated. It was found that students engaged in the Talented and Gifted program achieved higher NCE scores on the basic total portion of the Stanford 9-TA than students participating in the AVID program did. Therefore, it was determined that group membership was a significant main effect. It was also found that white students achieved

higher basic total NCE scores, than did black students. There were no differences noted in gender with respect to basic total NCE achievement. The covariate, socioeconomic status was also found to be a significant factor in determining the achievement of these students. The data yielded one significant two-way interaction. This interaction existed between race/ethnicity and group membership. The findings of this Basic Total ANCOVA analysis are discussed in the Summary of Null Hypotheses. (See Table 9.) This is also evident when the cell means and adjusted cell means are analyzed. (See Table 10.) The basic total two-way interaction between race and group is shown in Figure 1. (See Figure 1.)

Table 9

Summary of Null Hypotheses With Respect to Basic Achievement

Null Hypothesis	Reject/Fail to Reject
1. There is no statistically significant difference in gender (males, females).	Reject/Fail to Reject Fail to reject
2. There is no statistically significant difference in race/ethnicity (blacks, whites).	Reject
3. There is no statistically significant difference in group membership (Talented and Gifted, AVID).	Reject
4. There is no statistically significant interaction between gender (males, females) and race/ethnicity (blacks, whites).	Fail to reject
5. There is no statistically significant interaction between gender (males, females) and group membership (Talented and Gifted, AVID).	Fail to reject
6. There is no statistically significant interaction between race/ethnicity (blacks, whites) and group membership (Talented and Gifted, AVID).	Reject
7. There is no statistically significant interaction among gender (males, females) race/ethnicity (blacks, whites) and group membership (Talented and Gifted, AVID).	Fail to reject

Table 10
Analysis of Basic Cell Means and Adjusted Cell Means

Variable	Cell Means	Adjusted Cell Means
Gender		
Males	59.9	58.4
Females	57.7	59.4
Race/Ethnicity		
Blacks	49.4	55.7
Whites	71.7	63.0
Group Membership		
Talented and Gifted	78.8	72.1
AVID	48.1	50.4

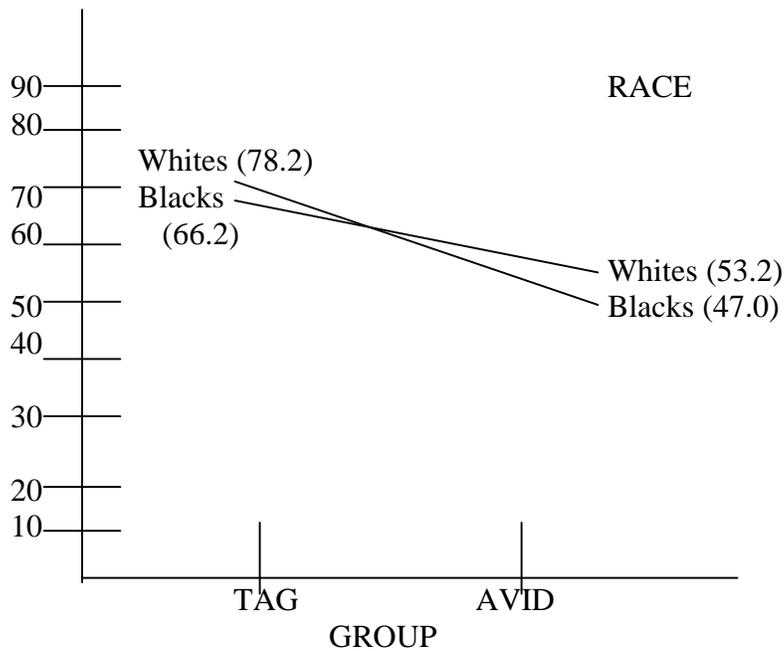


Figure 1. **Race and Group Basic Achievement Total Two-Way Interaction**

The second analysis of covariance (ANCOVA) procedure examined reading total NCE scores. The ANCOVA summary table for reading total NCE achievement is shown in Table 11. The data were examined to determine if any two or three-way interactions were significant. (See Table 11.)

Table 11
Reading Achievement Analysis of Covariance

	<u>SS</u>	<u>df</u>	<u>MS</u>	<u>F</u>	<u>Sig. of F</u>
Covariate					
SES	877.5	1	877.5	5.4	.020*
Main Effects					
Gender	802.2	1	802.2	4.9	.027*
Race/Ethnicity	2557.7	1	2557.7	15.7	.001*
Group	20787.4	1	20787.4	128.2	.001*
2-Way Interactions					
Gender x Race	140.8	1	140.8	1.0	.363
Gender x Group	63.7	1	63.7	.3	.531
Race x Group	398.9	1	398.9	2.4	.117
3-Way Interactions					
Gender x Race x Group	35.4	1	35.4	.21	.640
Within	63029.5	389	162.0		
Total	135048.5	397	340.1		

*p ≤ .05

It was hypothesized that there would be no statistically significant difference at the .05 alpha level in reading total NCE Stanford 9-TA achievement scores between students in the Talented and Gifted and AVID programs. This hypothesis was also not substantiated. It was found that students engaged in the Talented and Gifted program achieved higher NCE scores on the reading total portion of the Stanford 9-TA than

students participating in the AVID program did. Therefore, it was determined that group membership was a significant main effect. It was also found that white students scored higher NCE scores on the reading total portion, than did black students. There were also no statistically significance differences noted in gender with respect to reading total achievement. The covariate, socioeconomic status was also found to be a significant factor in determining the achievement of these students. The data yielded no significant two-way interactions. The findings of this Reading Total ANCOVA analysis are discussed in the Summary of Null Hypotheses. (See Table 12.) This is also evident when the cell means and adjusted cell means are analyzed. (See Table 13.)

Table 12

Summary of Null Hypotheses With Respect to Reading Achievement

Null Hypothesis	Reject/Fail to Reject
1. There is no statistically significant difference in gender (males, females).	Reject
2. There is no statistically significant difference in race/ethnicity (blacks, whites).	Reject
3. There is no statistically significant difference in group membership (Talented and Gifted, AVID).	Reject
4. There is no statistically significant interaction between gender (males, females) and race/ethnicity (blacks, whites).	Fail to reject
5. There is no statistically significant interaction between gender (males, females) and group membership (Talented and Gifted, AVID).	Fail to reject
6. There is no statistically significant interaction between race/ethnicity (blacks, whites) and group membership (Talented and Gifted, AVID).	Fail to reject
7. There is no statistically significant interaction among gender (males, females) race/ethnicity (blacks, whites) and group membership (Talented and Gifted, AVID).	Fail to reject

Table 13
Analysis of Reading Cell Means and Adjusted Cell Means

Variable	Cell Means	Adjusted Cell Means
Gender		
Males	62.1	60.6
Females	62.6	63.8
Race/Ethnicity		
Blacks	53.6	59.7
Whites	74.6	66.1
Group Membership		
Talented and Gifted	78.2	75.6
AVID	52.2	54.2

The third analysis of covariance (ANCOVA) procedure examined language total NCE scores. The ANCOVA summary table for language total NCE achievement is shown in Table 14. The data were examined to determine if any two or three-way interactions were significant. (See Table 14.)

Table 14
Language Achievement Analysis of Covariance

	<u>SS</u>	<u>df</u>	<u>MS</u>	<u>F</u>	<u>Sig. of F</u>
Covariate					
SES	1045.1	1	1045.1	4.3	.039*
Main Effects					
Gender	405.6	1	405.6	1.6	.197
Race/Ethnicity	4108.5	1	4108.5	16.9	.001*
Group	27915.0	1	27915.0	115.0	.001*
2-Way Interactions					
Gender x Race	42.1	1	42.1	.1	.667
Gender x Group	28.7	1	28.7	.1	.731
Race x Group	171.5	1	171.5	.7	.401
3-Way Interactions					
Gender x Race x Group	.17	1	.17	.1	.979
Within	94378.4	389	242.6		
Total	193634.1	397	487.7		

* $p \leq .05$

It was hypothesized that there would be no statistically significant difference at the .05 alpha level in language total NCE Stanford 9-TA achievement scores between students in the Talented and Gifted and AVID programs. This hypothesis was again not substantiated. It was found that students engaged in the Talented and Gifted program achieved higher NCE scores on the language total portion of the Stanford 9-TA than

students participating in the AVID program did. Therefore, it was determined that group membership was a significant main effect. It was also found that white students achieved higher NCE scores on the language total portion, than did black students. The covariate, socioeconomic status was also found to be a significant factor in determining the achievement of these students. The data yielded no two or three-way interactions which were statistically significant. The findings of this Language Total ANCOVA analysis are discussed in the Summary of Null Hypotheses. (See Table 15.) This is also evident when the cell means and adjusted cell means are analyzed. (See Table 16.)

Table 15

Summary of Null Hypotheses With Respect to Language Achievement

Null Hypothesis	Reject/Fail to Reject
1. There is no statistically significant difference in gender (males, females).	Fail to reject
2. There is no statistically significant difference in race/ethnicity (blacks, whites).	Reject
3. There is no statistically significant difference in group membership (Talented and Gifted, AVID).	Reject
4. There is no statistically significant interaction between gender (males, females) and race/ethnicity (blacks, whites).	Fail to reject
5. There is no statistically significant interaction between gender (males, females) and group membership (Talented and Gifted, AVID).	Fail to reject
6. There is no statistically significant interaction between race/ethnicity (blacks, whites) and group membership (Talented and Gifted, AVID).	Fail to reject
7. There is no statistically significant interaction among gender (males, females) race/ethnicity (blacks, whites) and group membership (Talented and Gifted, AVID).	Fail to reject

Table 16
Analysis of Language Cell Means and Adjusted Cell Means

Variable	Cell Means	Adjusted Cell Means
Gender		
Males	61.0	59.2
Females	60.8	62.3
Race/Ethnicity		
Blacks	50.3	57.1
Whites	75.7	66.2
Group Membership		
Talented and Gifted	80.1	75.8
AVID	49.0	51.7

The fourth analysis of covariance (ANCOVA) procedure examined mathematics total NCE scores. The ANCOVA summary table for mathematics total NCE achievement is shown in Table 17. The data were examined to determine if any two or three-way interactions were significant. (See Table 17.)

Table 17
Mathematics Achievement Analysis of Covariance

	<u>SS</u>	<u>df</u>	<u>MS</u>	<u>F</u>	<u>Sig. of F</u>
Covariate					
SES	1116.1	1	1116.1	5.9	.015*
Main Effects					
Gender	637.6	1	637.6	3.4	.065
Race/Ethnicity	3873.0	1	3873.0	20.7	.001*
Group	29421.1	1	29421.1	157.4	.001*
2-Way Interactions					
Gender x Race	68.6	1	68.6	.3	.545
Gender x Group	205.0	1	205.0	1.0	.295
Race x Group	855.2	1	855.2	4.5	.033*
3-Way Interactions					
Gender x Race x Group	114.1	1	114.1	.6	.435
Within	72695.0	389	186.8		
Total	177296	397	446.5		

* $p \leq .05$

It was hypothesized that there would be no statistically significant difference at the .05 alpha level in mathematics total NCE Stanford 9-TA achievement scores between students in the Talented and Gifted and AVID programs. Once again, this hypothesis was not substantiated. It was found that students engaged in the Talented and Gifted program achieved higher NCE scores on the mathematics total portion of the Stanford 9-TA than did students participating in the AVID program did. Therefore, it was

determined that group membership was a significant main effect. It was also found that white students achieved higher NCE scores on the mathematics total portion, than did black students. The covariate, socioeconomic status was also found to be a significant factor in determining the achievement of these students. There were no statistically significant differences noted in gender with respect to mathematics total achievement. The data yielded one two-way interaction, which was statistically significant. The mathematics total two-way interaction between race and group is shown in Figure 2. (See Figure 2.) The findings of this Mathematics Total ANCOVA analysis are discussed in the Summary of Null Hypotheses. (See Table 18.) This is also evident when the cell means and adjusted cell means are analyzed. (See Table 19.)

Table 18

Summary of Null Hypotheses With Respect to Mathematics Achievement

Null Hypothesis	Reject/Fail to Reject
1. There is no statistically significant difference in gender (males, females).	Fail to reject
2. There is no statistically significant difference in race/ethnicity (blacks, whites).	Reject
3. There is no statistically significant difference in group membership (Talented and Gifted, AVID).	Reject
4. There is no statistically significant interaction between gender (males, females) and race/ethnicity (blacks, whites).	Fail to reject
5. There is no statistically significant interaction between gender (males, females) and group membership (Talented and Gifted, AVID).	Fail to reject
6. There is no statistically significant interaction between race/ethnicity (blacks, whites) and group membership (Talented and Gifted, AVID).	Reject
7. There is no statistically significant interaction among gender (males, females) race/ethnicity (blacks, whites) and group membership (Talented and Gifted, AVID).	Fail to reject

Table 19
Analysis of Mathematics Cell Means and Adjusted Cell Means

Variable	Cell Means	Adjusted Cell Means
Gender		
Males	59.3	57.5
Females	53.3	54.7
Race/Ethnicity		
Blacks	45.2	52.3
Whites	71.0	61.7
Group Membership		
Talented and Gifted	75.6	71.0
AVID	43.8	46.7

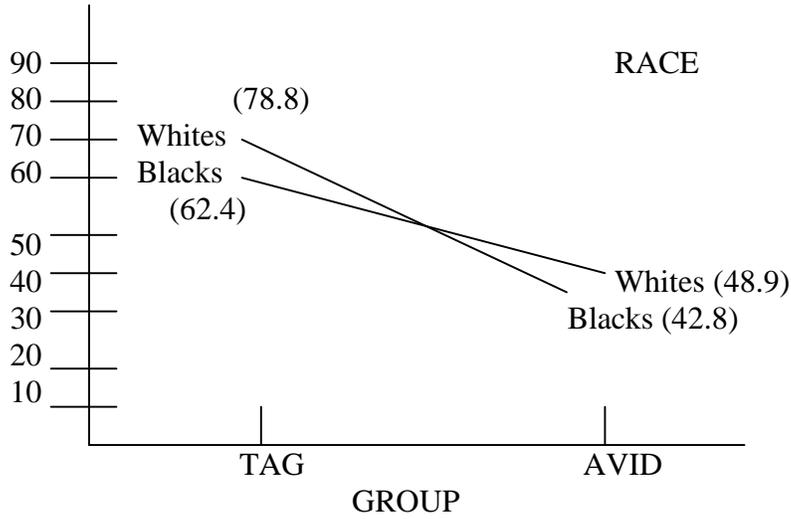


Figure 2. **Race and Group Mathematics Achievement Total Two-Way Interaction**

The fifth analysis of covariance (ANCOVA) procedure examined students' school attendance. The ANCOVA summary table for student attendance is shown in Table 20.

The data were examined to determine if any two or three-way interactions were significant. (See Table 20.)

Table 20
Student Attendance Analysis of Covariance

	<u>SS</u>	<u>df</u>	<u>MS</u>	<u>F</u>	<u>Sig. of F</u>
Covariate					
SES	1899.0	1	1899.0	10.0	.002*
Main Effects					
Gender	274.4	1	274.4	1.4	.228
Race/Ethnicity	59.2	1	59.2	.3	.575
Group	8.5	1	8.5	.1	.831
2-Way Interactions					
Gender x Race	41.4	1	41.4	.2	.639
Gender x Group	12.0	1	12.0	.1	.800
Race x Group	210.1	1	210.1	1.1	.291
3-Way Interactions					
Gender x Race x Group	125.6	1	125.6	.6	.415
Within	73245.9	389	188.2		
Total	76179.4	397	191.8		

* $p \leq .05$

It was hypothesized that there would be no statistically significant difference at the .05 alpha level in school attendance between students in the Talented and Gifted and AVID programs. This hypothesis was substantiated. It was found that students engaged in the Talented and Gifted program achieved no higher school attendance than students participating in the AVID program did. The data did not yield any statistically significant differences among gender or race/ethnicity with respect to school attendance. Therefore,

it was determined that no significant main effects with regards to attendance existed. The data yielded no two or three-way interactions which were statistically significant. The findings of this Attendance Total ANCOVA analysis are discussed in the Summary of Null Hypotheses. (See Table 21.) This is also evident when the cell means and adjusted cell means are analyzed. (See Table 22.) The yearly attendance means and standard deviations are shown in Table 23. (See Table 23.)

Table 21

Summary of Null Hypotheses With Respect to Attendance

Null Hypothesis	Reject/Fail to Reject
1. There is no statistically significant difference in gender (males, females).	Fail to reject
2. There is no statistically significant difference in race/ethnicity (blacks, whites).	Fail to reject
3. There is no statistically significant difference in group membership (Talented and Gifted, AVID).	Fail to reject
4. There is no statistically significant interaction between gender (males, females) and race/ethnicity (blacks, whites).	Fail to reject
5. There is no statistically significant interaction between gender (males, females) and group membership).	Fail to reject
6. There is no statistically significant interaction between race/ethnicity (blacks, whites) and group membership (Talented and Gifted, AVID).	Fail to reject
7. There is no statistically significant interaction among gender (males, females) race/ethnicity (blacks, whites) and group membership (Talented and Gifted, AVID).	Fail to reject

Table 22

Analysis of Attendance Cell Means and Adjusted Cell Means

Variable	Cell Means	Adjusted Cell Means
<hr/>		
Gender		
Males	174.3	175.3
Females	172.4	173.9
Race/Ethnicity		
Blacks	172.2	174.8
Whites	174.8	174.1
Group Membership		
Talented and Gifted	174.9	174.6
AVID	172.3	174.5

Table 23
Yearly Attendance with Means and Standard Deviations

Variable	<u>94/95</u>		<u>95/96</u>		<u>96/97</u>	
	Means	SD	Means	SD	Means	SD
Gender						
Males	178.3	12.6	170.3	27.4	177.7	15.2
Females	176.9	17.6	169.8	27.1	174.6	14.7
Race/ Ethnicity						
Whites	178.8	11.6	170.9	25.5	177.0	14.5
Blacks	176.7	17.3	169.5	28.5	175.3	23.0
Group						
TAG	177.7	14.9	172.2	22.8	177.1	14.4
AVID	177.4	15.5	168.7	29.6	175.4	22.6

Chapter Summary

Recalling the focus of this study, there were five main conclusions ascertained:

1. Analysis of the basic total NCE scores data, yielded statistically significant differences when comparing race/ethnicity (blacks, whites) and group membership (Talented and Gifted, AVID). White students who were members of the Talented and Gifted program scored higher than black students who were members of the AVID program with respect to basic NCE total scores. A statistically significant two-way interaction between race and group membership in the basic NCE total component was also found.

2. Analysis of the reading total NCE scores data, yielded statistically significant differences when comparing gender (males, females), race/ethnicity (blacks, whites) and group membership (Talented and Gifted, AVID). White students who were members of the Talented and Gifted program achieved higher NCE reading total scores than black students who were members of the AVID program. Females also scored higher than males with regards to NCE reading total scores. No statistically significant reading NCE total two-way or three-way interactions were found.

3. Analysis of the language total NCE scores data, yielded statistically significant differences when comparing race/ethnicity (blacks, whites), and group membership (Talented and Gifted, AVID). White students who were members of the Talented and Gifted program scored higher than black students who were members of the AVID program with respect to language total NCE scores. Gender, within this component was not found to be statistically significant. No two or three-way interactions were found to be statistically significant, regarding the language NCE total scores.

4. Analysis of the mathematics total NCE scores data, yielded statistically significant differences when comparing race/ethnicity (blacks, whites) and group membership (Talented and Gifted, AVID). White students who were members of the Talented and Gifted program scored higher than black students who were members of the AVID program with respect to mathematics NCE total scores. A statistically significant two-way interaction between race and group membership was also found within the mathematics NCE total component.

5. Analysis of the attendance total data, yielded no statistically significant differences when comparing gender (blacks, whites), race/ethnicity (blacks, whites), and

group membership (Talented and Gifted, AVID). Regardless of gender, race/ethnicity or group membership, students attended school equally as well.

CHAPTER 5

Overview, Conclusions, Implications, and Recommendations for Future Research

Overview

The purpose of this casual-comparative study of the Advancement Via Individual Determination (AVID) Program was to determine if the selected independent variables of gender, race/ethnicity, and group membership were significant with respect to middle school student achievement and attendance. The goal was to try to better understand the relationship of these independent variables and their effect upon the dependent variables of student achievement and attendance, while employing socioeconomic status as a covariate.

In this chapter, the researcher will present the major findings relative to the research questions. Secondly, the implications of the research findings will be discussed, and finally, future avenues for additional AVID research will be suggested.

Conclusions

The analyses of data found that group membership and race/ethnicity are statistically significant in the areas of basic total and mathematics total NCE scores, as measured by the Stanford 9-TA Partial Battery Tests. White students who were members of the Talented and Gifted program achieved higher NCE basic and mathematics total scores than black students who were members of the AVID program. Gender was not found to be a statistically significant factor among these areas. However, there were

statistically significant two-way interactions between race/ethnicity and group membership on these same Stanford 9-TA components.

Gender, race/ethnicity, and group membership were all statistically significant factors in the areas of reading total and language total NCE scores, as measured by the Stanford 9-TA Partial Battery Tests. Whites students who were members of the Talented and Gifted program achieved higher NCE reading and language total scores than black students who were members of the AVID program. There were no statistically significant two or three-way interactions among these same Stanford 9-TA components.

In examining the attendance data, no statistically significant factors were found. There also were no statistically significant two or three-way interactions found with respect to student attendance. This indicated that students in the Talented and Gifted and AVID programs, regardless of gender or race/ethnicity, attend school equally as well.

Implications

The necessity for change at the school level has been accompanied by inquiries from those who insist that schools can only do so much. They argue that it is the cultural background of minority students and the actions of the students themselves that undermine efforts to improve academic achievement. In light of education's huge need to make an instructional difference in the lives of children in our charge, it is incumbent upon educators to arbitrarily not accept the newest panacea to come along.

As indicated by the creators of AVID, students participating in the AVID program will attend school and achieve academically as well as other groups of children. The researcher's analyses of the data does not substantiate this claim. Students in AVID attend school as well as Talented and Gifted children, but attendance is only one of the

many factors used to validate the overall success of individual schools and districts. Student achievement is the number one criteria under which schools are presently judged.

The disheartening part of this entire study is the fact that AVID has been proposed as an instructional and restructuring program since the early 1980s and no prior casual-comparative study was completed to substantiate its claims of student achievement and attendance successes. Programs, which are as financially or otherwise demanding as AVID, need to be evaluated more frequently. The accountability upon public school educators is far too great not to do so. Our communities and public school educators must know if educational programs are providing expected results.

However revealing these research results appear, it must be noted that this researcher presented only one avenue of study regarding the AVID program. According to the raw data, many students originally selected as AVID students started the program with low standardized test scores. According to Swanson (1996), average standardized test scores, average classroom ability, school personnel recommendations, student attitude, and the potential to be successful are critical to AVID's success. Had the standard of average test scores been followed completely, all students assigned to this AVID cohort would not have been selected. It is the opinion of the researcher that a better adherence to the AVID student selection process is critical. In fairness to the program, the researcher feels that if the initial selection of these students were more in-line with suggested AVID criteria, the research comparison results may have also been different.

The researcher would also suggest that an Interrupted Time-Series Design be used to facilitate future evaluations of the AVID program. In this design, a series of

measurements is taken both before and after the introduction of the program to be evaluated (Popham, 1988). Popham states that these measurements may be drawn from existing records, such as regularly administered achievement tests, attendance reports, disciplinary referrals, high school enrollment in college preparatory classes, continuation of education at the postsecondary level, and completion of postsecondary courses of study.

Assuming that the intention is still to measure pupil achievement and attendance, and that AVID is still the program of choice, it would be possible to take statistical measurements among groups, preceding, following, or anywhere along the continuum of the treatment. The treatment in this case would be the AVID program. This would allow for a comparison of students' preceding levels, to their present ones, after exposure to the components of AVID. Statistical evaluations of these measures may be taken at specified intervals. This continual analysis of the data would provide opportunities to consistently evaluate AVID's components and to implement changes or intervention techniques. The time-series evaluation design would create an up-to-date evaluation of the program.

According to Popham, the greatest advantage of time-series designs is not that they offer an alternative to traditional comparative designs but that they provide a markedly different perspective for evaluating the effects of an educational intervention, such as AVID. Popham also states that many treatments of interest to an educational evaluator produce their effects across time, not in a single instant as measured by a posttest. In the opinion of this researcher, AVID has many student benefits, but the program's components need to be continuously assessed over predetermined periods of time.

Recommendations for Future Research Study

While this study was limited to analyses of data of one middle school student cohort, within one mid-sized urban school district, it is recommended that all school districts presently using the AVID program replicate this study or conduct related research. This would include analyses of data at the secondary level as well. Other avenues of study may include:

1. Do comparable students not enrolled in AVID achieve higher standardized test scores after being assigned to the AVID program?
2. How would an Interrupted Time-Series Evaluation Design provide a more conclusive evaluation of AVID's effectiveness?
3. How would results of an evaluation of the AVID program, utilizing grades nine through twelve, provide more comprehensive measurements of AVID's possible effectiveness?

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