Spring 5-2012

A Study of the Effectiveness of a Supplemental Program: the Advancement via Individual Determination (AVID) Middle School Program on Student Achievement

Robert T. Murray IV
Seton Hall University

A STUDY OF THE EFFECTIVENESS OF A SUPPLEMENTAL PROGRAM: THE ADVANCEMENT VIA INDIVIDUAL DETERMINATION (AVID) MIDDLE SCHOOL PROGRAM ON STUDENT ACHIEVEMENT

BY

ROBERT T. MURRAY IV

Dissertation Committee

Elaine Walker, PhD, Mentor
Daniel Gutmore, PhD, Reader
Gary L. Brager, PhD, Reader
Alan F. Hill, EdD, Reader

Submitted in Partial Fulfillment of the Requirements for the Degree of
Doctor of Education in Education Leadership, Management, and Policy

Seton Hall University

2011

SETON HALL UNIVERSITY
COLLEGE OF EDUCATION AND HUMAN SERVICES
OFFICE OF GRADUATE STUDIES

APPROVAL FOR SUCCESSFUL DEFENSE

Doctoral Candidate, **Robert Murray,** has successfully defended and made the required modifications to the text of the doctoral dissertation for the **Ed.D.** during this **Fall Semester 2011.**

DISSERTATION COMMITTEE
(please sign and date beside your name)

Mentor:
Dr. Elaine Walker Elaine M. Walker 11/16/11

Committee Member:
Dr. Daniel Gutmore

Committee Member:
Dr. Gary Brager Gary Brager 11/16/11

Committee Member:
Dr. Alan Hill Alan Hill 11/16/11

External Reader:
Dr. James Corind

The mentor and any other committee members who wish to review revisions will sign and date this document only when revisions have been completed. Please return this form to the Office of Graduate Studies, where it will be placed in the candidate's file and submit a copy with your final dissertation to be bound as page number two.

ACKNOWLEDGEMENTS

I would like to thank my family and friends for their support during the arduous journey of doctoral classes and the writing of my dissertation. Their encouragement to persevere through the classes, exams, and especially the dissertation were most appreciated. Particularly, my parents, who always directed my sister and I in understanding the importance of education and becoming life long learners.

I want to thank my dissertation mentor, Dr. Elaine Walker, for her continuous guidance and patience as we navigated the dissertation process. Her assistance with data analysis was particularly helpful and her willingness to make herself available for assistance at anytime was most appreciated. A special thank you to one of my dissertation readers and professors, Dr. Daniel Gutmore. Your comments, suggestions, and classes were of great benefit and I thank you for your quick and concise feedback.

I truly appreciate the discussions and depth of feedback provided to me by my other two readers on my dissertation committee, Dr. Alan Hill and Dr. Gary Brager. They both took time to sit with me and discuss approaches and directions to my dissertation process that guided me to a successful completion of this immense undertaking. I would like to extend my gratitude to my friend and co-worker, Adam Carney, who assisted me with technological issues when they arose and thank him for his support over the years.

To the teachers involved with the AVID program in Baltimore County Public Schools and elsewhere, your hard work and dedication in helping students reach their potential and beyond is truly appreciated. The lives you have and will affect throughout the years will be innumerable. Further, to the AVID founder, Mary Catherine Swanson, you are living proof of the difference one dedicated teacher can make when they devote

themselves to go the extra to assist their students in reaching their potential. AVID began as an idea you implemented in your own classroom and now has spread as an internationally renowned program because you cared to make a difference.

Finally, to all of my fellow Cohort XIII classmates in Seton Hall University's Executive Ed.D. Program, you are an exceptional group of people who made this experience enjoyable, manageable, and worthwhile. We had many laughs and I hope we continue to get together throughout the years. I have no doubt that you all will make even more substantial contributions to education and to all of its stakeholders as you advance in your careers.

ABSTRACT

A STUDY OF THE EFFECTIVENESS OF A SUPPLEMENTAL PROGRAM: THE ADVANCEMENT VIA INDIVIDUAL DETERMINATION (AVID) MIDDLE SCHOOL PROGRAM ON STUDENT ACHIEVEMENT

The purpose of this study was to investigate if a significant difference exists in the student performance measures between those students in the Advancement Via Individual Determination (AVID) middle school program and those students not in the program. In order to compare the overall effectiveness of the AVID middle school program additional analysis were conducted. Comparisons of student performance measures were made between ethnic minority students in the AVID program and white students not in the AVID program to evaluate the AVID middle school program's effectiveness in closing the achievement gap. Student performance measure comparisons were then made between African American male students in the AVID program as compared to those African American male students who are not in the AVID program to examine if the AVID middle school program is effective in positively assisting African American male students in increasing their achievement levels. Another comparison was made between students in the AVID program for one year and those in the program for two years to investigate whether or not there is a statistically significant difference in student performance measure outcomes for those students with more years in the AVID middle school program.

Since AVID has traditionally been a high school program, nearly all of the current research on this program has been involved with the high school level, for that reason, this study focused its research on the middle school level. In particular, it was decided to study the AVID program in eight middle schools in the Baltimore County Public School

system that has implemented the AVID program. Baltimore County Public Schools is currently the 26th largest public school district in the United States and it has a large number of middle schools; currently 27 middle schools of which eight employ the AVID program. Further, the research was even more concentrated by analyzing student performance outcomes of only 8th grade students.

This was a cross-sectional comparison group design using 1,417 eighth grade students in these eight middle schools of which 165 students were in the AVID program. The variables used for comparison were the State of Maryland middle school assessments in math, reading, science, and school district data on attendance and suspension.

The evaluation of the effectiveness of the AVID middle school program is long overdue and the results of this study are important to middle school stakeholders such as, administrators, parents, students, and school districts searching for an effective supplemental program to implement. The research revealed mixed results, however, as the results show in great detail in chapters four and five, those students in the AVID middle school program had higher mean scores than those students not in AVID. Further, this research gives African American males and other minorities an effective program to implement in assisting to work towards the closing of the achievement gap at the secondary level nationwide since the results were promising.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

Chapter I

INTRODUCTION

Statement of the Problem

Although each level of schooling, from early childhood to post secondary, presents its own challenges for students, the focus of this study will be the middle school level. Middle school students have the unique challenges of dealing with puberty and navigating that awkward time in their lives between childhood and becoming a young adult. The mission of most schools is to improve its students' academic performance and to create life long learners. Although students start school around the same age, our common sense and experiences tell us they are not all equally prepared nor do they have the same ability to succeed academically. Teachers, parents, administrators, and other stakeholders look for opportunities to help students perform up to their potential by employing creative programs and strategies. This task is attempted with great care and purpose, but often fails due to a litany of issues that block students from improving their academic performance. When this occurs, schools and school districts will often turn to supplemental educational programs to assist them in reaching their desired goal(s).

Supplemental educational programs can focus on one or many educational issues within a school or school system and greatly range in cost. Some of these supplemental programs claim to be effective; however, they may not have sufficient evidence to support their claims of effectiveness. Thus, it is important to consider the research on supplemental program effectiveness before spending precious education resources on any program. Part of the budget-planning process should be assessing cost effectiveness of programs or approaches that will be purchased and looking for investments that are more

likely to pay off in relatively high levels of student achievement for relatively low cost (Olsen, 2010).

Particularly difficult circumstances affect many students of low socio-economic status from reaching their full potential as compared to other students in society. This has led to the creation of many innovative programs to help raise the academic performance of low socio-economic students. The African American student group is often identified as a group that needs to increase performance when compared to other low socio-economic groups (Farkas, 2004). This particular focus is often referred to as the closing of the achievement gap when comparing programs or strategies that assist minorities in performing academically as well as White students.

Many approaches and supplemental programs have been developed throughout the last 50 years to help students be successful in school and reach their academic potential; however, the creation, implementation, and evaluation of the effectiveness of these programs in increasing student performance is often unclear. Schools and school systems work to increase their effectiveness and students' achievement; however, if they fail to meet expectations they often purchase and use a supplemental educational program or programs to assist them. This research study focuses on one such supplemental educational program, namely, the Advancement Via Individual Determination (AVID) middle school program. A significant problem regarding the supplemental educational program AVID is that little is known about the impact of the AVID program on middle schools and middle school students. One of the claims in the AVID literature and on its internet website (AVID Center, 2009) is that it is an effective program in closing the achievement gap. The achievement gap between minority and White achievement is an

area of great concern among education stakeholders, as written about in Chapter II of this dissertation, and it would be highly beneficial for education systems to have a program that is proven to work in assisting with this issue.

Purpose of Study

The purpose of this study was to determine the effectiveness of a particular supplemental program, namely, AVID, and to evaluate this program's effectiveness, specifically, in middle schools. The research in this dissertation examines the overall effectiveness of this supplemental program and its ability to close the achievement gap by analyzing data that compare:

1. AVID students and non-AVID students,
2. ethnic minority students in the program as compared to White students not in the program,
3. ethnic minority students not in the program as compared to White students not in the program,
4. African American male students in the program as compared to African American male students not in the program, and
5. students in the program for 1 year as compared to those students in the program for 2 years.

The definition used by me to define closing the achievement gap (see Definition of Terms) is a phrase commonly referred to closing the academic achievement gap between white students and minority students. The mission statement of AVID includes what it means for their program to close the achievement gap stating, "At AVID, we seek to close the achievement gap by improving the performance of all students, especially those

who have not traditionally succeeded in completing college entrance requirements: students who are underrepresented in four year colleges and universities, students in the academic middle, students who are the first in their family to go to college" (AVID Center, 2009).

The data collected provided me with the opportunity to analyze the comparisons posed within this dissertation in order to determine if this supplemental program is effective in assisting schools in increasing both academic and non-cognitive outcomes.

Since AVID has traditionally been a high school program, nearly all of the research on this supplemental program has been at the high school level. Understanding the AVID program's effectiveness at the middle school level will provide a significant contribution to the existing research on the topic. In particular, I decided to study the AVID program in those eight middle schools in the Baltimore County Public School system that have implemented the AVID middle school program. I decided to expand the research even further by analyzing student performance measures of eighth grade African American males in these eight middle schools in order to contribute statistical data to the AVID program's ability to be an effective program in raising the lowest achieving sub groups' student performance measures.

The Advancement Via Individual Determination (AVID) program was created over three decades ago in 1980 by an English teacher, Mary Catherine Swanson, in California, to assist minority students in performing successfully in higher level high school classes. Out of Ms. Swanson's first AVID class of 30 students, 28 went to college (Mehan, Villanueva, Hubbard, & Lintz, 1996). After experiencing great success with the AVID program at that particular high school, the AVID program was expanded to every

high school in the school system. Throughout the years, the AVID program has grown into an international program and is now present in most states and a few foreign countries (AVID Center, 2009).

The AVID program chooses from interested students to be part of the program from the "academic middle" (AVID Center, 2006); such as students that normally earn average grades. These students may not be the worst or the best; they are what some call, the "forgotten middle." Most school programs seem to give much of their attention to the gifted and talented students on one end of the education spectrum and the very low achieving students on the other end of the education spectrum. The AVID program attempts to reach out to the often ignored average student and pull them up to a higher achieving level academically while setting them on a strong path to college. Academic preparation is one of the most potent predictors of educational performance and enrollment in college (Perna, 2000). Today, AVID has been adopted by nearly 4,500 schools in 45 states, the District of Columbia and 16 countries/territories, and serves approximately 400,000 students (AVID Center, 2009).

Students apply to be part of the AVID program and are then selected for the AVID elective class where they receive support in reading, writing, note taking (see Appendix E), organizational skills, and management skills. Although the elective class is still the foundation of the AVID program, the AVID program in its entirety has become a catalyst for improving and transforming entire school districts (Swanson, 2005). Professional development within the AVID program is on-going throughout the school year to support AVID teachers and site teams to ensure the integrity of AVID principles and safeguard its effective school-wide implementation (Watt, Huerta, & Lozano 2007).

At its inception, the AVID program was primarily a high school program; this explains why the vast majority of the research done on the AVID program is focused on its effects on high school students and their successes after high school in college. In recent years, the AVID program has been implemented at the middle school level; however, there is not much research on the middle school level. The school system in which I work, Baltimore County Public Schools, has the AVID program in all 24 of its regular high schools and has implemented the AVID program in 8 of its 27 middle schools as well. These eight middle schools were identified to be part of the AVID program because they were low performing middle schools at the time of the AVID program's implementation in those schools. Implementation, as defined by Fullan (1991) is "the process of putting into practice an idea, program, or set of activities and structures new to the people attempting or expected to change" (p.65). Chapter II describes in detail the AVID programs student selection process, program implementation, and describes the overall program as well.

Research Questions

This study will be guided by five main research questions.

Research question 1. To what degree, if any, does the AVID middle school program contribute to the academic outcomes (Maryland School Assessments in math/reading/science) and non-cognitive outcomes (attendance data and suspension data) of eighth grade students in the AVID middle school program as compared to those eighth grade students not in the AVID middle school program?

Research question 2. To what degree, if any, does the AVID middle school program contribute to the academic outcomes (Maryland School Assessments in

math/reading/science) and non-cognitive outcomes (attendance data and suspension data) of closing the achievement gap of eighth grade ethnic minorities in the AVID middle school program as compared to those eighth grade White students not in the AVID middle school program?

Research question 3. To what degree, if any, are there differences in the academic outcomes (Maryland School Assessments in math/reading/science) and non-cognitive outcomes (attendance data and suspension data) of eighth grade ethnic minorities not in the AVID middle school program as compared to those eighth grade White students not in the AVID middle school program?

Research question 4. To what degree, if any, does the AVID middle school program contribute to the academic outcomes (Maryland School Assessments in math/reading/science) and non-cognitive outcomes (attendance data and suspension data) of eighth grade African American males in the AVID middle school program as compared to those eighth grade African American males who are not in the AVID middle school program?

Research question 5. To what degree, if any, is there a significant difference in the contribution to the academic outcomes (Maryland School Assessments in math/reading/science) and non-cognitive outcomes (attendance data and suspension data) of eighth grade students who had 1 year of the AVID middle school program as compared to those students who had 2 years of the AVID middle school program?

Hypothesis

The null hypotheses are ordered and numbered to match their corresponding research question.

Null hypotheses 1: There is no statistically significant difference in academic outcomes or non-cognitive outcomes for eighth grade students in the AVID middle school program when compared to those eighth grade students not in the AVID middle school program.

Null hypotheses 2: There is no statistically significant difference in academic outcomes or non-cognitive outcomes for eighth grade ethnic minority students in the AVID middle school program when compared to those eighth grade White students not in the AVID middle school program.

Null hypotheses 3: There is no statistically significant difference in academic outcomes or non-cognitive outcomes for eighth grade ethnic minority students not in the AVID middle school program when compared to those eighth grade White students not in the AVID middle school program.

Null hypothesis 4: There is no statistically significant difference in academic outcomes or non-cognitive outcomes for eighth grade African American male students in the AVID middle school program when compared to those eighth grade African American male students not in the AVID middle school program.

Null hypotheses 5: There is no statistically significant difference in academic outcomes or non-cognitive outcomes for eighth grade students who had 1 year in the AVID middle school program when compared to those eighth grade students who had 2 years in the AVID middle school program.

Significance of the Problem

The significance of this study is in the results of the investigation of whether the use of a particular supplemental program, such as the AVID program, positively affects

student performance at the middle school level and contributes to assisting in closing the achievement gap for African American males and other ethnic minorities as well. Hopefully, this research will be added to the body of work relating to the effectiveness of the AVID program.

The AVID program has been shown to be an effective tool in increasing student outcomes in high school and as a predictor of students both entering and finishing college. However, it is only in recent years that the AVID program has been involved with the African American Male Initiative (AVID Center, 2009) in assisting in closing the achievement gap.

The results of this study will be important to middle school stakeholders if the research results reveal that AVID is as effective at the middle school level as it has proven to be at the high school level. The research will give educators, the African American community, other minority communities, and a wide range of stakeholders an effective program to institute in assisting in the closing of the achievement gap.

Whether this particular supplemental program is deemed to be effective or not adds to the knowledge base of studies on supplemental educational programs implemented to positively affect student achievement at the middle school level. Further, this study seeks to extend the knowledge base beyond middle school achievement overall and includes research on the AVID program's effectiveness on assisting minority student achievement as well. Looking at this study and gaining knowledge from the data analysis will be another opportunity for education stakeholders to examine the practices of a particular educational supplemental program geared to raise middle school and minority achievement as well as create the opportunity for education researchers to examine those

practices, within the program, that may make it worthy of implementation, (or perhaps some of its practices worthy of implementation), on either a small scale within schools or on a larger scale within school systems to increase middle school achievement. All of this discussion regarding research on a middle school supplemental program's effectiveness on overall student achievement, as well as minority achievement, may lead to the development of new education policies for school districts and the nation.

As the United States currently works its way through an economic downturn, the amount of resources available has become even scarcer. Due to this scarcity there has, and will continue to be, heated discussions over where to place these limited resources in education both at the local and national level. "In essence, two battles occur during the passage of any statute – a battle over words and a battle over dollars. Both are important clues to the seriousness with which a government is pursuing a policy" (Fowler, 2009 p. 6). Research assists in the creating of education policy, and it would stand to reason that the policies implemented would be those that show research based results in increasing student achievement. With this in mind, this study was undertaken. Further, policy directly effects program implementation for students and our nation's changing demographics, at this time in history, points to the need for programs that are effective in addressing a national achievement gap between ever growing minority populations. "School leaders must be aware of broad demographic trends not only in the nation, but also in their own geographic area, because, as demographer Harold Hodgkinson (2001) puts it: 'Nothing is distributed evenly across the United States. Not race, not religion, not age, not fertility, not wealth, and certainly not access to higher education' (p. 6, emphasis in the original)" (Fowler, 2009, p. 6).

Limitation/Delimitation

In Baltimore County Public Schools, all 27 middle schools are comprised of grades 6, 7, and 8. There are eight middle schools in the Baltimore County Public School system currently employing the AVID program. Each of these eight middle schools has only one AVID class of students in eighth grade and four of the eight are running both a seventh and eighth grade AVID class. Therefore, four of those eight middle schools have only an eighth grade AVID program during the school year this data was collected, namely, the 2009-2010 school year. It would have been preferable to have more than 165 students involved in these eight eighth grade AVID middle school programs to increase the size of this researchers population for comparisons of the data analysis; however, finding a public school system large enough to have as many as eight of their middle schools using the AVID program would have presented even further difficulties. It was fortunate that this researcher is currently an administrator in Baltimore County Public Schools and had the availability of a large public school system with the AVID program already employed from which to access data.

Due to four of the eight middle schools in this study employing the AVID program in the eighth grade only during the 2009-10 school year, there was an opportunity to include in this study a comparison of performance measurements of students in those middle schools that had 1 year of the AVID middle school program as compared to those students in the other eighth grade AVID middle schools that had 2 years of the AVID program. Further, the AVID students in all eight AVID middle schools will be compared with students randomly sampled who are not in the AVID program from those same eight schools. Ideally, it would be preferred to have multiple

eighth grade AVID classes in all eight middle schools so this researcher would have a very large population in which to use for data analysis.

The Maryland School Assessment (MSA) that is used as part of the measured student performance measures in this study has a range of scoring from 240 to 650 points. Therefore, the lowest possible score is 240 on all three exams in math, reading, and science. All eighth grade students in all eight middle schools that took the regular MSA exams were included in the random sampling for comparison. However, certain special education students that were assigned a modified version of the MSA exam, called the Mod-MSA, were deleted from the comparisons made in this study. The reason they were deleted from this study is that the Mod-MSA exams are different from the MSA exams and have a range of scoring from 2 to 98. Since these exams are different assessments with different scoring ranges their removal from comparisons made in this study was necessary. If these students scores were to be included in the data comparisons, their lower scores would have skewed the data by lowering the overall scores of students not in the AVID program and made the results of the students in AVID look more significant. It should be noted that no students in the AVID program were Mod-MSA exam takers. (Refer to Appendix A to see the Maryland State Department of Education (MSDE) Maryland School Assessment (MSA) exams information.)

Assumptions

It is assumed that in employing the supplemental educational program that

1. the program compliments the regular schools instructional program and does not conflict with the already existing programs,

2. the program provides study skills and strategies that are likely to be better than those offered by the regular schools programs, and
3. the program offers a particular focus on an issue that the present day schools program has been unsuccessful in attaining.

Further, it is assumed, in direct relation to this study, that those members of the AVID site teams at the eight middle schools used in this study are implementing the AVID middle school program with fidelity. The AVID program requires that each school implementing the AVID program file a Certification Self Study (CSS) report with their AVID regional division office in order for AVID to review that they are following proper procedure in implementing the AVID program. It was reported by the AVID office of Baltimore County Public Schools that all eight middle schools employing the AVID program are in good standing and implementing the program with fidelity. (Refer to Appendix B to review the overall AVID program implementation fidelity ratings in all AVID schools in the Baltimore County Public School system.) It should be mentioned that due to this self-reporting system by schools and/or districts to the AVID program there exists a weakness in this program's fidelity of treatment data collection for certification. Further, it may be stated that having schools and districts report on themselves to AVID creates the prospect that there is no real data to support the quality of fidelity to the program's implementation.

Definition of Terms

Academic middle. Students that earn average grades overall.

Adequate Yearly Progress (AYP). Is a measurement defined by the United States federal government No Child Left Behind Act (NCLB) of 2001 that allows the U. S.

Department of Education to determine how every public school and school district in the country is performing academically according to results on standardized tests.

Advancement Via Individual Determination (AVID). The acronym "AVID" represents an abbreviation of the Latin term L. *avidus*, meaning eager for knowledge.

African American Male Initiative. An initiative started in universities to close the achievement gap for African American males.

Baltimore County Public Schools. In the year 2011 is the 26th largest public school system in the United States with over 105,000 students in 26 high schools, 27 middle schools, and 106 elementary schools.

Closing of the achievement gap. A phrase commonly used to refer to closing the academic achievement gap between white students and minority students.

Ethnic minorities. For purpose of this study means non-White students.

FARMS Data. An acronym for free and reduced meals in identifying students of lower socioeconomic means.

Maryland School Assessments (MSA). Is a mandatory assessment of mathematics, reading, and science achievement that meets the testing requirements of the No Child Left Behind Act (NCLB) of 2001. The math and reading tests are administered in the spring of each year to students in grades 3 through 8, while the science test is given in grades 5 and 8.

Minorities. For purposes of this study means students that are not coded as White in race.

SPSS. Refers to SPSS Student Version 17.0 computer software used to analyze statistical data.

STARS (Student Tracking and Registration System). A Baltimore County Public Schools created data system.

Stakeholders. Term referring generally to any person or group interested in the welfare of middle school students, more specifically, school administrators, parents, teachers, and students.

Student performance measures or student outcomes. In this dissertation refers to students Maryland School Assessments (MSA) in math/reading/science, and school district data on attendance, and suspension rates. Further, the Maryland School Assessments (MSA) in math/reading/science are referred to as academic outcomes in the research questions and the school district data on attendance, and suspension rates are referred to as non-cognitive outcomes in the research questions.

Supplemental educational programs. Educational programs that are purchased by schools and/or school districts to be used to increase student achievement.

Summary

Chapter I provided much of the basic information needed to clarify the issues that this study undertakes and provides a clear path to follow in order to gain understanding of this researcher's intended contributions to the field of education research. This chapter included the following topics: statement of the problem, purpose of study, research questions and hypotheses, significance of the problem, limitations/delimitations, assumptions, and the definitions of terms.

The second chapter is where the review of literature on the topics of concern are addressed such as: middle school reform, minority achievement, the achievement gap, African American males, as well as the literature on the AVID program, including a

description of the program. The third chapter discusses the methodology of this study and includes sections on: purpose of study, research hypotheses, research design, sample population, data sources, validity and reliability, and data analysis. Chapter IV contains the full data analysis of this study including the descriptive and ANOVA tables along with a summary of their results. The final chapter, Chapter V, contains the conclusions and recommendations that pertain to this studies results as well as recommendations for future research.

Chapter II

REVIEW OF THE LITERATURE

Introduction

In this chapter are literature reviews of the relevant topics related to this study. Those topics include a review of literature related to middle school reform, minority achievement, the achievement gap, African American males, and finally a review of literature on the AVID program followed by a description of the AVID program. The description of the AVID program expounds on the student selection process and the implementation of the program itself. This chapter discusses middle school reform, minority achievement, and the achievement gap in a broader context and then narrows the focus onto literature regarding the African American male subgroup and the AVID program.

The section on middle school reform begins this chapter from a more historical perspective of educational reform at the middle school level beginning with reasons for its inception and finishes with a litany of research on the middle school level. This section then transitions into a section on minority achievement which includes historical perspectives on minority education as well as literature on the current status of minority achievement and issues that are considered to be affecting that status. The third section of this chapter establishes a review of literature on the existing achievement gap that is present between minority and White students. The focus is on the fact that this achievement gap exists and on the current attention being given to this issue. The section on the achievement gap lays the foundation for the following section on African American males which reviews literature on this minority subgroup and its issues with

student achievement. The African American male is a subgroup within the overall minority groups that happens to be the lowest achieving subgroup among minorities. This is an important point to this study since one of the points of this study is to review the AVID program's effectiveness in closing the achievement gap and its ability to assist African American males in increasing their student achievement levels. Since African American males achieve at the lowest levels overall among minorities, this minority subgroup is specifically included in this study to expand the research on effective supplemental educational programs to assist these low achieving students in closing not only the overall gap between minorities and Whites, but also to close the gap that exists between African American males and all other minorities. The final sections of this chapter speak directly to literature reviews of the AVID program and a description of how the program is implemented. This is important in order to understand the basic tenets of this program and includes how fidelity of treatment is maintained within the AVID program.

The elements of this chapter are important to this study because they review literature on the topics that need to be revealed to provide both clarification and connections between these topics. This study evaluates the effectiveness of one of many supplemental education programs, namely, the AVID middle school program, and its ability to close the achievement gap which includes a further evaluation of its ability to assist African American male student achievement. The order of these sections were arranged to provide a logical flow of the topics to assist in making connections between the topics involved in this study.

Middle School Reform

The discussion of the proper formation and organization of schools to educate the citizenry of the United States of America has continued from its inception to the present, and will continue as long as this republic exists, because researchers will continue to study ways to make schools better. Even with such humble beginnings as one room school houses, the now nationally supported public school system has an immense history of growth along with our nation's beginnings from its original 13 states to the now 50 states. One room school houses began with several students of diverse ages all learning at different levels from one teacher. Now we have tens of thousands of separate public schools for our nation's children ranging from pre-elementary schools to high schools with millions of teachers serving them.

Through our nation's almost two and a half century existence, the public school system grade levels have been reorganized in many different ways. Different states and their school districts have chosen different grade level approaches to their school organizations such as k-12, k-8 and 9-12 schools, just to name a few. It was not until the early 1900s that discussions about a separate school for adolescent aged students were implemented. The idea of reconfiguring schools exclusively for the middle grades became a reality with the opening of the first two junior high schools in the nation in 1910, one in California and the other in Ohio (Jackson, 1986). The original junior high organizational structures were a variety of designs ranging from grades 5 through 9. It was not until the post-World War II era that discussions once again deepened on revamping the grade levels of the public school system. For many, the junior high school did not provide meaningful experiences that garnered desirable learning or accounted for the developmental stages of the adolescent learner (Gagne, 1970). "For the first time in

history, early adolescents were attending schools designed especially for them. However, seeds of discontent and disillusionment surfaced and in conjunction with other forces, gave birth to a second reform movement in middle level education – the middle school movement" (McEwin, 1983, p. 120). Many felt that it would be beneficial to organize schools around a model that put the fifth grade level into elementary school and the ninth grade level into high school. Thus, the popular current model of the sixth, seventh, and eighth grade levels for middle school was established.

Although each level of life provides its own challenges, the adolescent age of the middle school student in grades 6 through 8 is a very challenging time both academically and physically. The enormous changes to these children's bodies as they go through puberty, while they move out of the elementary level schooling and into the more challenging middle level of learning, can be difficult. One of the challenges of middle-level learning is that more responsibility is placed on the student for their learning and organization. Due to the many challenges of this awkward stage of life and the challenges it creates for students, much energy has been devoted to middle school research.

Ford (2010) wrote the following:

> Over 3,700 research studies have been conducted between 1991 and 2003 related to middle school education (Beane & Lipka, 2006). The National Middle School Association (NMSA) and the Carnegie Council on Adolescent Development worked collaboratively for well over twenty years to create a national forum through the publication of several documents. These include: "This We Believe: Developmentally Responsive Middle-Level Schools" (NMSA, 1995), "This We

> Believe: Successful Schools for Young Adolescents" (NMSA, 2003), "Turning Points: Preparing American Youth for the 21st Century" (Carnegie, 1989), and "Turning Points 2000: Educating Adolescents in the 21st Century" (Jackson & Davis, 2000). An overarching goal of these publications was the development of a comprehensive, national definition for middle schools, hence the middle school concept. (p. 31)

These publications are mentioned in numerous research studies on middle schools as they reveal observations and make suggestions to make middle schools better, however, the two publications that seem to be referred to more often than not are the most recent ones listed earlier.

High & Andrews (2009) wrote the following:

> Both Turning Points 2000 (Jackson & Davis, 2000) and This We Believe: Successful Schools for Young Adolescents (National Middle School Association, 2003) emphasize the importance of engaging students in relevant, meaningful learning experiences as a critical means of supporting academic excellence.... Ensuring success for every student is the central goal of the Turning Points 2000 model. The authors envision "success" as a young adolescent who exits the middle grades intellectually reflective, en route to a lifetime of meaningful work, a good citizen, caring and ethical, and mentally, physically, and emotionally healthy (Jackson & Davis, 2000). To ensure success for every student, educators must strive for student engagement by involving them in relevant, meaningful, and transformative learning. (p. 59)

It is with this kind of "transformative learning" in mind that a program was created by the federal government to encourage this kind of school reform, namely, the Comprehensive School Reform Demonstration (CSRD) programs. Sometimes referred to as Comprehensive School Reform (CSR).

Pagano (2009) quoted the following in his dissertation:

> "The federal government created the Comprehensive School Reform Demonstration (CRSD) program in 1997 as a means to restructure schools to promote changes in teaching and learning (Desimone, 2002). This comprehensive school wide reform includes eleven provisions integral to effective change for schools. The provisions addressed:
>
> 1. effective, research based, replicable methods and strategies for improvement
> 2. comprehensive design with aligned components
> 3. professional development
> 4. measurable goals and benchmarks
> 5. support for program within the school
> 6. support for teachers and principals
> 7. parental and community involvement
> 8. external technical support and assistance
> 9. evaluation strategies
> 10. coordination of resources
> 11. strategies to improve student achievement (Epstein, 2005; Watt, Huerta, & Cossio, 2004; Desimone, 2002)

> AVID, Advancement Via Individual Determination, an innovative program designed to provide academic rigor for middle school students, is one of many reform models accepted by the federal government to implement a CSRD effort (Watt, Powell, & Mendiola, 2004)..." (p. 5)

This research study focuses on the AVID middle school program's effectiveness and specifically includes as student performance measures those of reading and math. This researcher chose reading and math scores on the Maryland School Assessment because they are used, in part, to determine if a school has made Adequate Yearly Progress (AYP) as required in the 2001 No Child Left Behind Act (NCLB).

Turner (2009) wrote the following:

> In the United States, achievement tests and standardized testing began to expand with the enactment of the Elementary and Secondary Education Act of 1965 (ESEA), which required each state to monitor and assess the educational progress of students. The movement of school systems toward standardized testing was sustained with A Nation at Risk (1983), a landmark report on American education calling for improving teaching through higher benchmarks and standards and high-stakes tests. ... The rise of high stakes testing continued unabated with the passage of the 2001 No Child Left Behind Act (NCLB), a reauthorization of ESEA. Both A Nation at Risk and NCLB claimed there was little accountability in education, and the latter called for every student to be proficient in his or her grade level by 2012, with annual testing of reading and mathematics in grades 3-8. ... Since the No Child Left Behind Act (NCLB) requires

> annual testing in grades 3 through 8, and the National Assessment of Educational Progress (NAEP) requires testing in grades 4 and 8, middle school students are now one of the most tested student populations in our nation's schools (NAEP, 2007; NCLB, 2002). (p. 2)

With this focus on student achievement at the middle school level and with national testing requirements being used to measure school systems, individual schools, principals, teachers and others, along with federal monies being directed based on these testing results, it is no wonder these stakeholders are invested in implementing programs to increase student achievement. Recently, the George W. Bush Institute introduced a major education initiative focusing on middle school reform. The initiative will begin in a few Texas middle schools and look to affect middle school reform nationally in the near future. As written by the Associated Press and published online by huffingtonpost.com on February 8, 2011, "Former first lady Laura Bush, set to announce the initiative, 'Middle School Matters,' in Houston at Stovall Middle School in the Aldine school district, said research has shown that middle school-6th through 8th grade-is a crucial time in determining future success. 'We know now from research that a lot of kids that drop out in high school really drop out in middle school. They just leave in high school,' she said" (p. 2).

These reform efforts at the middle school level are ongoing and will hopefully yield great gains in student achievement for all students across our nation no matter what their socioeconomic background. Being a middle school student is difficult enough as mentioned earlier, however, being a middle school student from a low socioeconomic background only makes things more difficult for the student. Because of this reality,

middle school reform efforts need to pay attention to research on programs successful in assisting these types of students with increasing their achievement levels in order to assist middle schools in becoming more effective.

Jackson (2009) wrote the following:

> In 2000, Gayle Andrews and I (Jackson) published Turning Points 2000: Educating Adolescents in the 21st Century (Jackson & David, 2000), in which we summarized our analysis of the conditions of middle grades education at the turn of the century. "Significant process has been made in the journey to provide young adolescents with developmentally responsive education. ... Structural changes in middle grades education - how students and teachers are organized for learning - have been fairly widespread and have produced good results. ... However, our observations suggest that relatively little has changed at the core of most students' school experience: curriculum, assessment, and instruction (p.5)." Now nearly a decade later, what is the state of middle grades education? On the one hand federal mandates under No Child Left Behind, flawed as the legislation may be, have stimulated a significant and needed emphasis on improving instruction and outcomes for students who historically had, indeed, been left behind: poor students, students of color, and students with handicapping conditions. ... In mathematics, for example, 30% of our nations eighth graders are categorized as below basic in their achievement levels, and 27% are below basic in reading (National Center for Education Statistics, 2007a, 2007b). The data also show

> continuing gaps between racial and ethnic groups in reading and math. These data suggest that the core of what students do every day in school - what they learn, how they learn, and how they demonstrate what they learned - remains much the same as it was a decade ago and decades before that. (p. 6)

The problem of ethnic minority middle school student achievement is an issue touched upon by Jackson's quote above and a topic for this study. These next few sections discuss minority achievement, the closing of the achievement gap issue and even delve further into the ethnic minority sub-group of African American males for further exploration. This is followed by a review of literature on AVID and a description of this program.

Minority Achievement

It has been said that education is the silver bullet. Meaning, it is that one thing that can take a person from the ranks of commonality and raise them to new heights of opportunity because education opens the doors that would otherwise remain closed to the uneducated person.

Polinard, Wrinkle, & Meier (1995) wrote the following:

> Education often is seen as the key to success in the United States. It is also a prime policy area and one that is critical for minority political empowerment. On the one hand, the failure of minority students to attain educational success at the same levels as White students effectively sentences minority students, in Kozol's (1985) classic phrase, to "death at an early age." On the other, it suggests that those persons interested in

> promoting minority student success should pay closer attention to political resource variables." (p. 472)

With this in mind, the federal government in recent years has influenced schools to focus on increasing minority achievement. "Few Americans disagree with the ultimate objective of the No Child Left Behind Act - to eliminate achievement disparities in reading and mathematics by the 2013-2014 school year. ... Proponents of NCLB assert that high expectations for achievement are needed to address the learning needs of public school students who are 'segregated by low expectations' (U.S. Department of Education, 2001)" (Kim & Sunderman, 2005 p. 4-10). From all levels of government, to the local school districts, educators, politicians, and other stakeholders in communities; may have engaged with this task of focusing on and increasing student achievement.

Noguera (2008) wrote the following:

> In many communities, this has placed greater focus on the need for strategies to improve academic achievement among children who have traditionally not done well in school, namely, poor and disadvantaged children, students with learning disabilities, recent immigrants and English language learners, and in many communities African Americans, Latinos and other students of color, generally (Miller, 1995). ... Racial gaps in achievement, attainment and measures of intellectual ability are by no means new. In fact, throughout most of American history, racial disparities in educational achievement and performance were attributed to innate genetic differences between population groups, and as such, were regarded as acceptable and understandable "natural" phenomena

> (Frederickson, 1981). Intelligence was regarded as innate human property rooted in the particular genetic endowments of individuals and groups (Duster, 2003), and therefore altering patterns of academic achievement was not regarded as feasible or even desirable. (p. 90)

The aforementioned lack of "minority political empowerment" and these historic attitudes of "... non-Whites... believed to possess lower levels of intellectual capacity..." (Gould, 1981), it is no wonder that minority achievement has suffered and failed to make educational gains equal to those of White students.

Skerrett & Hargreaves (2008) wrote the following:

> In practice, in many schools, common curricula and learning standards have institutionalized inequitable systems of academic tracking and uneven student achievement, with racial minority students being disproportionately represented in lower academic tracks while their higher performing, mostly White peers occupy the higher levels of schooling (Dei, Mazzuca, McIsaac, & Zine, 1997; Oakes, Hunter, Quartz, Ryan, & Lipton, 2002). Moreover, the trend toward increasing curriculum standardization and high stakes testing has significantly reduced teachers' flexibility in incorporating more culturally responsive practices into their classrooms (Achinstein, Ogawa, 2006: Sloan, 2006), though some teachers have been affected more than others (Corson, 1998; Darling-Hammond, French, Garcia-Lopez, 2002; Ladson-Billings, 1995; Skerrett, in press). Veteran staff members, particularly those who teach high-status academic contents to students in the upper academic tracks; teachers who lack

> preparation for teaching diverse learners; and those who have little prior experience with diversity have been least responsive to student diversity. (p. 916)

Tracking has directly influenced minority achievement in a negative way. Oakes (as cited in Diamond, 2006) note "that students in lower educational tracks are typically taught by less qualified teachers using instructional materials and strategies that are less challenging and engaging, and therefore, ultimately, learn less" (Diamond, 2006, p. 501). Perhaps this engrained bias and negative attitudes toward the "intellectual capacity" of non-White's led to the continued segregation of students by tracking.

Diamond (2006) wrote the following:

> While some measure of desegregation was achieved during the period of active enforcement of desegregation laws (particularly in the South), the current trend is toward re-segregation (Clotfelter, 2004; Orfield, & Easton, 2006). Whites, however, attend schools in which the vast majority of students are White. Likewise, the typical Black or Latino/a student attends a school with much higher poverty rates than the typical White student. (p. 502)

It has been nearly six decades since the civil rights movement of the sixties and the landmark Supreme Court decision of *Brown v. Board of Education* (1954) that helped that movement and made desegregation of schools possible.

Noguera (2008) wrote the following:

> Several researchers have found that political attitudes toward the presence of minority students and their families influence how these students are

> treated in school (Lipman, 1998; Meier, Stewart, & England, 1989). In communities where White educators lament demographic change due to "White flight," and complain about the growing presence of students of color, the commitment to serving their educational needs is lacking. (p. 99-100)

This "White flight" from the cities to the suburbs may be looked at as yet another way for people to segregate themselves from minorities and/or it may be a way people consider to better their children's educational opportunities by purchasing homes, or renting, in high socioeconomic areas in order to take advantage of the excellent schools. "Wealth has important implications for education. Parents with greater assets are free to use them to pay for tutors, purchase educational materials (e.g., computers), and pay for private schools and more expensive colleges" (Ferguson, 2002, as cited in Diamond, 2006, p. 497). Further, "... racial segregation in US public schools is increasing" (Clotfelter, 2001, 2004, as cited in Goza & Ryabov, 2009, p. 1265).

In recent years, further investigation into minority achievement and causes of poor achievement has grown due to NCLB. The focus has turned the conversation away from discussing segregation and more on to identifying issues within minority achievement and recommendations for addressing those issues.

Noguera (2008) wrote the following:

> At an aggregate level, Asian American students do out-perform other groups in mathematics, White students do achieve at higher levels then Black and Latino students, and middle-class children generally out-perform poor children (Farkas, 2004). Individual exceptions exist, but the

> patterns cited are fairly consistent (Ferguson, 2007). To some degree these patterns may be attributed at least in part to characteristics that may be loosely associated with culture. However, in order to be helpful in finding ways to ameliorate or at least reduce disparities in achievement, the specific aspects of culture that seem to be most influential need to identified. For example, certain child-rearing practices such as parents reading to children during infancy or posing questions rather than issuing demands when speaking to children are associated with the development of intellectual traits that contribute to school success (Rothstein, 2004). Similarly, parental expectations about grades, homework, and the use of recreational time have been shown to influence adolescent behavior and academic performance. ... Whether or not such behaviors can be attributed to culture can be debated, but clearly identifying specific behaviors that seem to positively influence academic achievement is more helpful than making broad generalizations about 'oppositional' and 'anti-intellectual' cultures because this information can be used to teach others to emulate behaviors that lead to success. ... Differences related to socioeconomic status and income, the educational background of parents, the kind of neighborhood a student lives in, and most importantly the quality of school a student attends, significantly affect student achievement (Miller, 1995; Noguera, 2001, 2003). (p. 93-94)

The issues of racism, tracking, socioeconomic status, lack of political influence, neighborhood, family upbringing, child-rearing, family expectations, parental

involvement and school quality, to name a few, are mentioned earlier as affecting minority achievement in a significant way. This dissertation examines the AVID program which seeks to "untrack" students and place them in rigorous classes with high expectations with both individual attention and peer collaboration as well as provide academic supports and reinforcing skills in the daily elective class in order to raise academic achievement (AVID Center, 2009). As stated earlier, AVID began in one California high school classroom in 1980 to assist minority students to do well in higher level classes. This attempt to help high school minorities achieve at higher levels may be considered a successful experiment in closing the achievement gap since 28 out of the 30 students in that class went on to college. A large part of this study focuses on the AVID programs effectiveness to close the achievement gap among middle school students.

The Achievement Gap

Another area in which this research will be of considerable value is if the results of the AVID middle school program reveal it to be an effective program in closing the achievement gap between ethnic minorities middle school students and White middle school students and further, in assisting African American male student achievement.

Indeed, a true academic gap in learning exists between minority students and White students in the United States. Choose to blame whatever stakeholder or circumstance you choose for this current gap, but the reality is that the gap exists and attention to this issue needs to be addressed by employing research-based programs with proven results to fix it. Another reality is that the minority population in the United States is growing at a rapid pace and Whites will one day be the minority race.

As Judy Richardson wrote in *Principal Leadership* magazine, March 2010:

> The U.S. Census Bureau now predicts that 'minorities' will constitute the majority of children under age 18 by 2023 (Roberts, 2008). If that prediction is accurate, educational leaders will be increasingly challenged to provide training for staff members and initiatives for students that provide a nurturing environment that can enable each student to achieve academically and close the achievement gap. (p. 68-69)

The recent economic stimulus package put forth by the Obama administration has billions of dollars dedicated to education reform, dubbing it the Race to the Top initiative. States may apply for the funding through a grant process as long as they adopt certain standards. "The Investment in Innovation Fund (i3) provides an additional $650 million grant to support local efforts to start or expand research-based innovative programs that help close the achievement gap" (McDonald, 2010, p. 48-49). The federal government realizes the achievement gap is an educational issue that deserves priority status. A sense of urgency surrounds this issue, and this urgency has grown in recent years. "Achievement gaps have important consequences for both individuals and the nation. They damage the economic and social fabric of society, undermine civil rights and social justice for a large segment of the population, and destroy the principles of democracy" (Murphy, 2010, p. 10).

African American Males

Although the phrase, closing of the achievement gap, refers to the issue of an academic learning gap between all minority students and White students, one minority group stands out as having a wider academic learning gap even among other minority groups; I am referring to the Black male. "Black males present an added challenge for

educators because they are not considered a subgroup, but rather a portion of a subgroup that is struggling nationally" (Kafele, 2010, p. 76). In many achievement gap statistical comparisons between minority students and White students, all minorities are lumped together. This kind of statistical reporting often ignores the subgroups within the minority groups being reported. When you look at subgroup data in nearly any comparison related to the achievement gap you see the subgroup of Black males as performing lower than all of the other minority subgroups. Kafele (2010) writes, "Closing the achievement gap requires raising the achievement levels of Black male students..." (p. 77). Further he states, "This requires strategies that will not only effectively educate their Black male students but also keep them inspired about learning and motivated to excel" (p. 77). This does not mean that other minority subgroups should be ignored when addressing the closing of the achievement gap, but it does point out a consistent pattern that needs to be addressed as school systems employ strategies and programs to resolve the overall achievement gap.

Baruti K. Kafele (2010) wrote in *Principal Leadership* magazine:

> After looking at current state and national student achievement data, I think the greatest academic challenge facing principals today - urban principals in particular - is the plight of the Black male learner. It is no secret that the overall achievement levels of Black male students continue to be dismally low in comparison to their White and Asian counterparts, and their graduation rates are particularly alarming. According to the Schott Foundation for Public Education (2008), only 47% of Black male

> students graduate from high school. In some cities, the graduation rates are as low as 19%. (p. 77).

School systems throughout the United States have catalogued this gap between African Americans and Whites in achievement and yet the gap continues to widen. "Despite several decades of school reforms, on average Black students' school performance continues to lag behind White students' performance, and Black males are the most affected by this gap. Even middle-class Black males perform lower than expected given their family's socioeconomic levels (Ogbu, 2003; Polite & Davis, 1999)" (Mickelson & Greene, 2006, p. 2). This sort of information begs the question, Why do Black males perform lower than expected academically?

Gordon, Iwamoto, Ward, Potts & Boyd (2009) wrote the following:

> Identification with academics is especially relevant to Black males given that this group disproportionately experiences more tracking into low-ability groups, are socially and economically isolated from their classmates, receive more frequent and harsher disciplinary actions, and tend to be held in lower academic regard by their teachers (Osborne, 1999; Stinson, 2006; Voelkl, 1996). (p. 278)

Stinson (2006) goes further by writing, "Understanding how education is used to distribute the resources of society requires careful attention to the factors that preclude and those that promote equal opportunity and academic success for Black youth, and specifically boys (Gordon, Iwamoto, Ward, Potts & Boyd, 2009)" (p. 277). This statement certainly brings to the forefront a need for awareness by school systems that the low academic performance of minorities, and specifically Black males, is something to

consider when targeting resources to improve school achievement. The plight of the Black male in society adds to this sense of urgency since "... one in 14 African American males is in some form of jail, prison, parole, or probation. The incarceration rates are starkly unequal between Blacks and Whites. The chances of young Black men being killed or injured in some type of violent act during their lifetimes are staggering. Sadly, in a great many states, there are more Black males in U.S. prisons than in U.S. colleges" (Hynds, 2008, p. 2).

Information and statistics like these paint a very bleak future for Black males. Mickelson & Greene (2006) wrote the following:

> Parents, policy makers, and educators are keenly aware that African American student achievement is, on average, lower than that of Whites and Asians. The with-in race gender gap among African Americans increasingly garners attention because although the race gap is closing (National Center for Educational Statistics, NCES, 2001), persistent and lower performance is particularly evident among males (Boyd-Franklin & Franklin, 2000; Garibaldi, 1992; Majors & Billson, 1992; NCES, 2001; Polite & Davis, 1999). (p. 1)

As mentioned earlier, the past research on the AVID program has been focused on the high school level. This study focuses on the AVID middle school program and specifically its ability to positively affect middle school students, minority students, and African American male students. According to the following quote, cited by Mickelson and Greene (2006), this combination of research may be very apropos. "The race and gender-gap in Black students' academic performance begins to appear in middle school

(Davis & Jordan, 1996; Ford, 1992; Ford & Harris, 1992; Greene, 2001)" (p. 1). As a middle school teacher for 8 years, the words of Mickelson and Greene do not shock me at all. It does not shock me because the middle school age is the time when children enter the age of adolescence and that is a time when children's physical and emotional changes run rampant.

Abramson (2004) wrote the following:

> Children of this middle age (11 years through 15) are different from any others. They are going through many changes. They are no longer children ready to follow instructions without asking "why", nor have they grown up to the point where they can make their own decisions on a consistent basis. That's why middle school was created because neither the rules of elementary school nor the freedoms of the high school really work for this group of students. (p. 63)

This age of adolescence is a turbulent time for children in many ways. "Early adolescence is filled with erratic growth spurts, immense variation in cognitive development, unpredictable emotions, and dominating social needs" (Petzko, 2004, p. 8). Given all of these issues in adolescence it can hardly go unmentioned that academics could be affected in a more negative way in the middle school years than at any other time. "Manning and Allen (1987) summarized the impact of changing social characteristics during the middle level years. They concluded that these volatile and ever-changing patterns of student development have important implications for school climate, organizational structures, emotional well-being, self-concept, and academic achievement" (Gulino & Valentine, 1999, p. 94). Further, "Vatterott (1991) described the critical link

between attitude and performance as especially important for middle level students, whose psychological and emotional states are fragile" (Gulino & Valentine, 1999, p. 90). This "fragile" state that middle school adolescent students find themselves in is difficult to transition through. Add to that the plight of the Black male mentioned earlier and then consider what the Black male middle school student has to overcome.

In the article, *Connecting Pieces of the Puzzle: Gender Differences in Black Middle School Students' Achievement*, Mickelson and Greene (2006) state:

> ... by middle school, the pieces of the under achievement puzzle are beginning to take shape and to align in many ways that foreshadow the disappointing school outcomes associated with older Black male students. Because middle schools are essential links in the sequence of opportunities to learn, it is imperative to understand the social and educational forces that influence the middle school academic outcomes of Black male students. (p. 2)

This study reflects an effort to measure the effects of the AVID middle school program and its ability to assist minority students, specifically African American males, in increasing their academic outcomes. As Roach stated in the article "The Black Male Research Agenda", "... the efforts toward studying Black males are believed to be lagging in analysis and proposed solutions. 'We need more research,' says Dr. Lee Jones, associate professor of academic affairs and instruction at Florida State University" (p. 22).

The AVID program is a supplemental educational program seeking to be effective in assisting students to close the achievement gap. As stated on the AVID "Fact Sheet," (see Appendix C), "Closing the achievement gap and preparing students for

success in a global society are significant educational reform challenges that must be met now, particularly for low-income and minority students. Improving students' critical thinking, reading and writing abilities allows them to participate and succeed in courses of high rigor and better prepares them for postsecondary access and success" (AVID Center, 2009). This study looks at the effectiveness of the AVID middle school program overall and includes further study of this programs ability to close the achievement gap; thus, it is important to understand the implementation of this program.

Advancement Via Individual Attention (AVID)

The success of the AVID program in helping students increase student performance in high school and prepare for college is well documented. In a study on the school-wide impact of AVID on selected Texas high schools (Watt, Huerta, & Cossio, 2006), results showed increases in graduation rates, increases of enrollment in advanced courses, and AVID high schools improved their accountability ratings as measured by the Texas Assessment of Academic Skills and Dropout Rates. Watt, Huerta, and Lazano's (2007) comparison of AVID and GEAR UP Programs among 10th graders in two Texas high schools, showed significant higher academic preparation for AVID students.

AVID is one of many models of reform allowed by the federal government to be used as a Comprehensive School Reform (CSR) effort because the AVID program uses researched based strategies and methods. Due to the large number of students who enter college after graduation from high school, Slavin (1998) wrote that AVID is "worthy of consideration by other schools serving many students placed at risk" (p. 86-87). In a study by Watt, Powell, Mendiola, and Cossio (2004), 10 high schools with the AVID program were examined and the results showed that AVID students outperformed their

classmates on different standardized tests and their attendance rates were higher than that of their classmates. These findings corroborated those from a previous study (Watt, Yanez, & Cossio, 2002). In a study that reviewed many different school reform models, Martinez and Kloppett, stated, "Because AVID proactively seeks to raise achievement and increase college preparedness for students at risk, it deliberately addresses the predictors of college-going behavior and uses college entrance and completion as measures of its success, making it unique among the reform models examined in this study" (Martinez, & Klopott, 2006, p. 18).

There have also been studies on AVID students' success in college after completing the AVID program in high school. In the *Journal of Hispanics in Higher Education*, a study of 50 AVID graduates at a 4 year university showed better retention rates and potential graduation rates than some state and national populations (Watt, Huerta, & Alkan, 2009a). Another investigation of AVID's effectiveness examined the postsecondary educational process of Mexican-American students who participated in AVID. This study found that these students were better prepared for college due to their participation in AVID and being exposed to rigorous curriculum which the AVID program advocates (Mendiola, Watt, & Huerta, 2009a).

One study in the *Community College Journal of Research and Practice*, examined the addition of the AVID Program to a community college in its early stages. After one semester of AVID at the community college level, students reported that the support they received in the AVID class helped them become more organized, focused and motivated to continue their studies (Watt, Huerta, & Alkan, 2009b).

The only AVID research study found that related to middle school level AVID programs was the research done by Larry and Grace Guthrie (2002) that focused on the comparison of student outcomes for those students in high school who had been in the AVID middle school program. This research did not focus on the effectiveness of the AVID middle school program, as this research intends to do. One of the key findings of the Guthrie research is that, middle school students who had two years of AVID had significantly higher high school GPA's than their peers with only one year of AVID or no exposure to AVID during middle school. This research shows that the AVID middle school program set the stage for students to be successful in high school; however, it did not evaluate the AVID middle school program. It is anticipated that this research will add to the body of knowledge related to the effectiveness of the AVID program.

AVID Program Description

This section examines the implementation of the AVID program, including the student selection process, the certification process, the essentials of the AVID program, and a description of what the program includes for students.

Black, Little, McCoach, Purcell, & Siegle (2008) wrote the following:

> AVID is a school-wide reform initiative whose primary goal is to increase the enrollment of historically underrepresented and economically disadvantaged students in 4-year colleges through increased access to and support in advanced courses at the middle and high school levels (Swanson, Mehan, & Hubbard, 1993; Watt, Yanez, & Cossio, 2002-2003). The program emphasizes untracking middle-achieving students and placing them in the same college preparatory classes as their highly

> achieving peers while providing academic supports to increase the likelihood of success in those classes (Gandara, Larson, Rumbereger, & Mehan, 1998; Hubbard & Mehan, 1999; Watt, Huerta, & Cossio, 2004). (p. 111).

It should be noted that, according to the AVID Center, in recent years the AVID program has now begun implementation in elementary grades 4 and 5.

In order for the AVID program to maintain fidelity in the implementation of its programs, it has established a certification process that includes an evaluation of every school employing the AVID program and their district wide evaluation as well (see Appendix B to review the district wide certification evaluation of all of the middle and high schools employing AVID in the Baltimore County Public School system). This certification process identifies a continuum of three levels of implementation: Level 1-Meets Certification Standards, Level 2-At Routine Use, Level 3-Is Institutionalized.

Peak (2010) wrote the following:

> In order to retain the high caliber and quality of the AVID program, AVID Center requires that schools must receive certification from the local area agency for implementing the AVID program Essentials. According to the Advancement Via Individual Determination (Guthrie & Guthrie, 2002), these essentials are:
>
> 1. AVID student selection focuses on students in the middle (2.0-3.5 GPA's as one indicator) with academic potential, who would benefit from AVID support to improve their academic record and begin college preparation.

2. AVID program participants, both students and staff, must choose to participate.
3. The school must be committed to the full implementation of the AVID program, with the AVID elective class available within the regular academic school day.
4. AVID students must be enrolled in a rigorous course of study that will enable them to meet requirements for university enrollment.
5. A strong, relevant writing curriculum provides the basis for instruction in the AVID elective class.
6. Inquiry is used as a basis for instruction in the AVID elective.
7. Collaboration is used as a basis for instruction in the AVID classroom.
8. A sufficient number of tutors are available in the AVID class to facilitate student access to rigorous curriculum.
9. AVID program implementation and student progress are monitored through the AVID Data System, and results are analyzed to ensure success.
10. The school or district has identified resources for program costs, has agreed to implement AVID Certification, and has committed to ongoing participation in AVID staff development.
11. An active interdisciplinary site team that collaborates on issues of student access to and success in rigorous college prepatory classes.
12. AVID provides support for students to achieve in higher level mathematics.

13. AVID teachers participate in ongoing, high quality staff development through the regional coordinator workshops and the AVID Summer Institute.
14. The AVID site coordinator must be a seasoned, highly-respected, and dedicated senior teacher with specific knowledge and skills. The AVID coordinator must be an expert in college admissions, public relations, and other special areas.

The AVID site team, a small learning community, is composed of all stakeholders (i.e. students, faculty, AVID elective teachers, administrators, college tutors, counselors, and parents) who meet frequently to discuss how to improve the program and is ultimately responsible for getting the school certified. (p. 17-19)

The specific essentials of the AVID program that are used in the certification process are listed in Appendix B. It should be noted that the AVID high school program has existed for 30 years and that the AVID middle school program employs the same strategies as the high school program. While the high school student selection process includes students with 2.0-3.5 GPA's as one indicator students in the middle school AVID program are normally identified for the program with grades maintained at the B or C level since GPA's are not always used in middle schools.

Students in the AVID program have a different schedule than those students not in the AVID program. AVID students attend a daily "elective class" that assists them with many skills while students not in the AVID program attend regularly offered elective classes.

Black, Little, McCoach, Purcell, & Siegle (2008) wrote the following:

> The elective class offers tutorial that promote (a) student collaboration and inquiry, (b) motivational days involving field trips to colleges and presentations by guest speakers, and (c) academic skills classes that focus on instruction in Cornell-style note-taking, test taking and study skills, assignment tracking, and writing to learn (AVID, 2006; Gandara et al., 1998; Mehan, Hubbard, & Villanueva, 1994; Oswald, 2002a; Watt et al., 2002-2003). The AVID curriculum strongly emphasizes writing, inquiry, collaboration, and reading (WIC-R; AVID; Mehan et al.,; Smith, n.d.)." (p. 117)

Refer to Appendix D to review the WIC-R graphic organizer and Appendix E to review a Cornell-style note taking organizer, both from the AVID Center.

Summary

The nature of the literature reviewed in this chapter is comparative and evaluative. The literature reviews past research that evaluates the AVID program overall and/or compares the program's effectiveness as compared to other programs, albeit at the high school level. Although research on the AVID program's effectiveness on student achievement beyond high school is included in the literature review, it is based on reflecting upon students who were previously in the high school AVID program. This study includes all available research that could be located by this researcher as related to the AVID program. Further, research and articles of interest on this studies topics were included and organized to make the case for this studies investigation of those topics in relation to evaluating the effectiveness of the AVID program in middle schools.

Chapter III

METHODOLOGY

Introduction

In this chapter, the researcher identifies the methodology that was used to examine and evaluate the effectiveness of the Advancement Via Individual Determination (AVID) middle school program. This chapter includes sections on the purpose of study, research hypotheses, research design, sample population, data sources, validity and reliability, data analysis, and a chapter summary. The following chapters analyze the SPSS results of the data and discuss the results.

Purpose of Study

This is an evaluation study and thus, the purpose of this research is to compare the student performance measures of eighth grade middle school students in the AVID middle school program to those eighth grade middle school students not in the AVID middle school program in order to evaluate the AVID middle school program's overall effectiveness. The desired result is that the students in the AVID middle school program will outperform those students not in the AVID middle school program in every category of measurement, thus, showing the AVID middle school program to be an effective program worth implementing in middle schools to assist students in increasing their student achievement. Further, the goal of this dissertation is to extend the research on the AVID middle school program's effectiveness and evaluate its ability to assist African American males and other ethnic minority middle school students in increasing their student performance. The desired result is that the students in the AVID middle school program will outperform those students not in the AVID middle school program that they

are compared to in every category of measurement, thus, showing the AVID middle school program to be an effective program in closing the achievement gap but further, its ability to assist African American males student achievement.

Research Hypotheses

While the five research questions are listed in the first chapter, the corresponding null hypotheses are as follows.

Null hypotheses 1. There is no statistically significant difference in academic outcomes or non-cognitive outcomes for eighth grade students in the AVID middle school program when compared to those eighth grade students not in the AVID middle school program.

Null hypotheses 2. There is no statistically significant difference in academic outcomes or non-cognitive outcomes for eighth grade ethnic minority students in the AVID middle school program when compared to those eighth grade White students not in the AVID middle school program.

Null hypotheses 3. There is no statistically significant difference in academic outcomes or non-cognitive outcomes for eighth grade ethnic minority students not in the AVID middle school program when compared to those eighth grade White students not in the AVID middle school program.

Null hypotheses 4. There is no statistically significant difference in academic outcomes or non-cognitive outcomes for eighth grade African American male students in the AVID middle school program when compared to those eighth grade African American male students not in the AVID middle school program.

Null hypotheses 5. There is no statistically significant difference in academic outcomes or non-cognitive outcomes for eighth grade students who had 1 year in the AVID middle school program when compared to those eighth grade students who had 2 years in the AVID middle school program.

These null hypothesis statements are being posed in order to contribute knowledge to the understanding of the AVID middle school program and whether or not it should be considered as a supplemental educational program worthy of implementation in schools to assist student achievement. Further, school systems in need of effective supplemental programs to assist with closing the achievement gap between its minority and white students may find this study's results worth examining as part of their decision making in choosing supplemental educational programs to accomplish this goal.

Research Design

This is a cross-sectional comparison group design study in which middle school eighth grade students in the AVID program are compared with eighth grade students not in the AVID program. I analyzed the student performance measures of math, reading, and science using the Maryland School Assessment (MSA) scores of the previously mentioned eighth grade students. In addition, I analyzed school district data on these students' attendance and suspension rates. These comparisons were analyzed to investigate whether there was a statistically significant difference at the .05 level in the student performance measure outcomes between those students in the AVID middle school program and those students not in the AVID program.

Sample Population

The total population of students to randomly choose from in this study is 1,417

eighth grade middle school students from eight middle schools in the Baltimore County Public School system in the state of Maryland. The reason these eight middle schools were chosen is that they are the only middle schools in the Baltimore County Public School system that currently employ the AVID middle school program. Table 1 provides information on the population of the comparable groups of this study.

Table 1

Population of Comparable Groups

Research Question	Total Number of Students Chosen for Comparison	Comparable Groups and the Number of Students Compared
Research Question 1	330	165 AVID Students and 165 Non-AVID Students
Research Question 2	222	111 Ethnic Minority AVID Students and 111 White Non-AVID Students
Research Question 3	462	351 Ethnic Minority Non-AVID Students and 111 White Non-AVID Students
Research Question 4	86	43 African American Male AVID Students and 43 African American Male Non-AVID students
Research Question 5	165	88 One Year AVID Students and 77 Two Year AVID Students

As can be seen in Table 1 for research question 1, a total of 330 students were chosen for comparison. The number of students in the AVID middle school program in these eight middle schools was 165, thus, another 165 students were randomly chosen for comparison. For research question 2, a total of 222 students were chosen for comparison. The number of ethnic minority students in the AVID middle school program was 111, thus, 111 White students not in the AVID middle school program were randomly chosen for comparison. For research question 3, a total of 462 students were used for comparison.

The number of ethnic minority students not in the AVID middle school program was 351 and were compared to the 111 White students that were not in the AVID middle school program from research question 2. This was done to compare how these students did in comparison to those students in research question 2 in order to be able to analyze if student comparisons in the earlier mentioned outcomes improved. For research question 4, a total of 86 students were chosen for comparison. The number of African American male students in the AVID middle school program was 43, thus, 43 African American male students not in the AVID program were randomly chosen for comparison. Further, I controlled for race and gender in the first four research questions, and in all five research questions, removed students for comparison that did not have scores for all 3 years at these middle schools. This was done because those students were not taught for all 3 years in those middle schools used in this study, unlike the AVID students used in this study. In research question five, a total of 165 students were chosen for comparison. All of these students were the 165 students in the AVID middle school program in eighth grade during the 2009-10 school year. A total number of 88 students were in the AVID program for 1 year; while 77 students were in the AVID middle school program for 2 years.

The specific eight schools used in this sample from the Baltimore County Public School system were Deep Creek Middle School, Dundalk Middle School, Golden Ring Middle School, Holabird Middle School, Lansdowne Middle School, Old Court Middle School, Southwest Academy Middle School, and Woodlawn Middle School. In order to preserve anonymity among the particular results of each school, the students' names and school names were not included in this dissertation results. In fact, the data was collected

by this researcher without student names and school names included. For more information relating to these eight schools, refer to the demographic chart in Appendix F. The demographic data includes data in the following categories for each school used in this study: students enrolled, attendance rates, FARMS students, special education students, limited English proficiency students, students by race, mobility rates, staff instructional experience, and staff education levels.

Data Sources

This research study is purely quantitative and makes student performance measure comparisons using the data collected in the 2009-10 school year from the Baltimore County Public Schools Department of Research, Accountability, and Assessment. The data for all student performance measures was collected in Excel files format from the Baltimore County Public Schools Department of Research, Accountability, and Assessment after the 2009-2010 school year ended and analyzed using SPSS 17.0 software.

The eighth grade students in this study are compared using the following student performance measures; the 2009-10 Maryland School Assessments (MSA) in math, reading, and science, as well as district data on these students' attendance and suspension rates. The Maryland School Assessment (MSA) test is given to all third through eighth grade students in the state at the same time in the subject areas of math, reading, and science. However, the science exam is given in grades 5 and 8 only.

The Maryland School Assessment (MSA) test includes multiple choice questions and questions requiring written responses. It measures basic as well as higher level skills. Students take the test for approximately ninety minutes each day. There are six testing

days, two days for reading, two days for math, and two days for science. The test is scored by a testing vendor who reports the scores for individual students to local school systems. The school systems then report the scores to their schools and the schools report the scores to students and parents. The MSA scores show how well students learned the reading, math, and science skills in the state curriculum.

The Maryland School Assessment (MSA) that is used as part of the measured student performance measures in this study has a range of scoring from 240 to 650 points; therefore, the lowest possible score is 240 on all three exams in math, reading, and science. The derived scale score of 240-650 is scaled rather than raw points. All eighth grade students in all eight middle schools that took the regular MSA exams were included in the random sampling for comparison. However, certain special education students that were assigned a modified exam of the MSA, called the Mod-MSA, were deleted from the comparisons made in this study. The reason they were deleted from this study is that the Mod-MSA exams are different from the MSA exams and have a different range of scoring from 2 to 98. These being different assessments with different scoring ranges necessitated their removal from comparisons made in this study. If these students scores were included in the data comparisons, their lower numbered scores would have skewed the data in lowering the overall scores of students not in the AVID program and made the results of the students in AVID look more significant. It should be noted that no students in the AVID program were Mod-MSA exam takers. (Refer to Appendix A to see the Maryland State Department of Education (MSDE) Maryland School Assessment exams information).

The STARS computer system used by Baltimore County Public Schools

maintains the attendance data, suspension data, and the gender and race data input by schools so it can be retrieved by the Baltimore County Public Schools Department of Research, Accountability, and Assessment. It should be noted that student attendance rates are presented as the number of days absent and that student suspension rates are listed as the number of days suspended.

Validity and Reliability

The sections below under the titles MSA Reading Test Validity and MSA Math Test Validity were taken from the Maryland State Department of Educations website (www.marylandpublicschools.org) from the MSA Technical Reports on the Middle School Assessment tests validity and further reference is made to information regarding reliability. Evidence for validity involves several approaches:

- The content of the test items through a blueprint that aligns the items with the Voluntary State Curriculum (VSC) of the State of Maryland
- Items were written by teams of content specialists, teachers, the testing company (Harcourt), and by staff at Maryland State Department of Education (MSDE)
- Items were field tested and subjected to item analysis
- Items were reviewed by content, bias, and vision committees
- Items were revised or replaced and subsequent field tests conducted for more review
- The structure of the test conformed to the three reading areas assessed, general, literary, and informational

- Statistical analysis (e.g., factorization) confirmed the content structure and that one dominant factor drove test performance
- A statistical tool, DIF (differential item functioning), was employed to detect if gender and ethnic bias in the items existed

The Maryland State Department of Education website at http://www.msde.maryland.gov/MSDE/divisions/planningresultstest/MSA+Technical+Reports.htm. states the following:

> **MSA Reading Test Validity:**
>
> As noted in the *Standards for Educational and Psychological Testing* (AERA, APA, & NCME, 1999), "validity is the most important consideration in test evaluation." Messick (1989) defined validity as follows: Validity is an integrated evaluative judgment of the degree to which empirical evidence and theoretical rationales support the adequacy and appropriateness of inferences and actions based on test scores or other modes of assessment. (p.5) This definition implies that test validation is the process of accumulating evidence to support intended use of test scores. Consequently, test validation is a series of on-going an independent processes that are essential investigations of the appropriate use or interpretation of test scores from a particular measurement procedure (Suen, 1990). In addition, test validation embraces all of the experimental, statistical, and philosophical means by which hypotheses and scientific theories can be evaluated. This is the reason that validity is now recognized as a unitary concept (Messick, 1989). To investigate the

validity evidence of the 2007 MSA-Reading, content-related evidence, evidence of internal structure, and evidence of unidimensionality were collected.

Content-Related Evidence

Content validity is frequently defined in terms of the sampling adequacy of test items. That is, content validity is the extent to which the items in a test adequately represent the domain of items or the construct of interest (Suen, 1990). Consequently, content validity provides judgmental evidence in support of the domain relevance and representativeness of the content in the test (Messick, 1989). The 2007 MSA-Reading blueprints provide extensive evidence regarding the alignment between the content in the 2007 MSA-Reading and the *VSC*. The 2007 MSA-Reading operational test forms were created from the pool of item that had been field-tested in 2006 and before. The item composition of these tests is reported in section 1.5, Test Structure of the 2007 MSA-Reading. In addition, 2007 MSA-Reading blueprints are presented in Appendix D.

Item Development

Test development for MSA-Reading is ongoing and continuous. Content specialists, teachers all over Maryland, Harcourt, and MSDE were greatly involved in developing and reviewing test items. Committees such as content review, bias review, and vision review reviewed all of the items which were finally stored in the item bank. Specifically, an internal review by MSDE and Harcourt staff for alignment and quality required a great

> deal of time and energy. More specific information on item (test) development and review can be obtained in section 1.4, Development and Review of the 2007 MSA-Reading. Field testing was conducted within a test window scheduled. Once field-test items were scored, MSDE and Harcourt conducted additional item analysis and content review. Any field-test items that exhibited statistics that suggested potential problems were carefully reviewed by content specialists within MSDE and Harcourt. A determination was then made as to whether the item should be eliminated or revised and field-tested again. Information on statistical analyses for field test items can be obtained in section 1.9, Field Test Analyses.

(http://www.msde.maryland.gov/MSDE/divisions/planningresultstest/MSA+Technical+Reports.htm.)

For information relating to the reliability of the MSA Reading Test, refer to the full MSA Reading Technical Report at: http://www.msde.maryland.gov/MSDE/divisions/planningresultstest/MSA+Technical+Reports.htm.

The Maryland State Department of Education website at http://www.msde.maryland.gov/MSDE/divisions/planningresultstest/MSA+Technical+Reports.htm. states the following:

> **MSA Math Test Validity**
>
> 1.11 Test Validity of the 2009 MSA-Math

As noted in the *Standards for Educational and Psychological Testing* (AERA, APA, & NCME, 1999), "validity is the most important consideration in test evaluation." Messick (1989) defined validity as follows:

Validity is an integrated evaluative judgment of the degree to which empirical evidence and theoretical rationales support the adequacy and appropriateness of inferences and actions based on test scores or other modes of assessment. (p.5) This definition implies that test validation is the process of accumulating evidence to support intended use of test scores. Consequently, test validation is a series of ongoing and independent processes that are essential investigations of the appropriate use or interpretation of test scores from a particular measurement procedure (Suen, 1990). In addition, test validation embraces all of the experimental, statistical, and philosophical means by which hypotheses and scientific theories can be evaluated. This is the reason that validity is now recognized as a unitary concept (Messick, 1989). To investigate the validity evidence of the 2009 MSA-Math, content-related evidence, item development procedures, differential item functioning (DIF) analysis on gender and ethnicity, and evidence from internal structure were collected.

Content-Related Evidence

Content validity is frequently defined in terms of the sampling adequacy of test items. That is, content validity is the extent to which the items in a test adequately represent the domain of items or the construct of interest

(Suen, 1990). Consequently, content validity provides judgmental evidence in support of the domain relevance and representativeness of the content in the test (Messick, 1989). The 2009 MSA-Math blueprints provide extensive evidence regarding the alignment between the content in the 2009 MSA-Math and the *VSC*. It should be noted that the 2009 MSA-Math operational test forms were built exclusively using a Maryland item bank program which contained both content and statistical information about both operational and field-tested items. Information on the item composition of the operational test forms can be obtained from section 1.4, *Test Form Design, Specifications, Item Type, and Item Roles*. In addition, the 2009 MSA Math blueprints are presented in Appendix D.

Item Development

Test development for MSA-Math is ongoing and continuous. Content specialists, teachers from across Maryland, Pearson, and MSDE were greatly involved in developing and reviewing items. Committees such as content review, bias review, and vision review reviewed all of the items, which were finally stored in a Maryland item bank. Specifically, an internal review by MSDE and Pearson staff for content alignment and quality required a great deal of time and energy. More specific information on item (test) development and review can be obtained in section 1.3, *Development and Review of the 2009 MSA-Math Items and Test Maryland School Assessment-Mathematics: Grades 3 through 8 2009 Administration*123 Field test items were embedded and administered in

one of ten test forms. Once these items were scored, MSDE and Pearson conducted additional item analysis and content review. Any field test items that exhibited statistical results that suggested potential problems were carefully reviewed by both MSDE and Pearson content specialists. A determination was then made as to whether an item should be eliminated, revised, or field-tested again. Information on statistical analyses for field test items can be obtained in section 1.13, *Field Test Analyses and Item Bank Construction.*

***Differential Item Functioning* (DIF)**

1) Bias Review of Items

A separate Bias Review Committee examined each math item, with looking for indications of bias that could impact the performance of an identifiable group of students. They discussed or rejected items biased on gender, ethnic, religious, or geographical bias.

2) *DIF* Statistics

For DIF analyses, subgroups were first identified according to either reference or focal groups. For the 2009 MSA-Math, males and whites were assigned to the reference group and females and African-Americans were assigned to the focal group.

While the Mantel-Haenszel procedure was used for SR and SPR items, the standardized mean difference (SMD) and the standard deviation (SD), along with the Mantel statistic, were calculated for BCR and ECR items. All of the items were classified based on Educational Testing Service

(ETS) guidelines. All *DIF* results were kept in the 2009 Maryland item bank. More information on *DIF* analyses can be obtained in section 3.7, *Differential Item Functioning.*

Evidence from Internal Structure

The 2009 MSA-Math has five reporting math standards: *Algebra, Geometry and Measurement, Statistics and Probability, Numbers and Computations,* and *Process.* Tables 4.3 through 4.8 show the correlations among the math standards.

(http://www.msde.maryland.gov/MSDE/divisions/planningresultstest/MSA+Technical+Reports.htm.)

For information relating to the reliability of the MSA Math Test, refer to the MSA Math Technical Report at: http://www.msde.maryland.gov/MSDE/divisions/planningresultstest/MSA+Technical+Reports.htm.

Data Analysis

The data collected was statistically analyzed using the SPSS 17.0 software package and the results are provided in both descriptive tables and analysis of variance (ANOVA) tables to reveal if there is a statistically significant difference at the .05 level in the comparisons made in each of the five research questions. The dependent variables for this study were the student performance measures: MSA scores in math, reading, science, and school district data on student attendance and suspension rates. The independent variables for this study were the eighth grade students in the AVID middle school program and the non-AVID students. One-Way ANOVA tests were run to

determine if a statistically significant difference existed between the variables of school, race, and gender. It should be noted that the random sampling for the school comparisons chose students from only seven of the eight middle schools in this study, thus, the reason for a degree of freedom of six instead of seven in Table 3. Any variables that were significant in those tests were analyzed using a two-way ANOVA. The results of all these analysis are presented in Chapter IV. Table 2 is the null hypothesis analysis table that shows each rejected and/or accepted part of each null hypothesis of this study. As a note to the reader, if the null hypothesis is rejected then there is a statistically significant difference in the outcomes.

Table 2

Null Hypothesis Analysis

Null Hypothesis	Type of Outcome	Variables	Null Accepted or Rejected
Null Hypothesis 1: There is no statistically significant difference in academic outcomes or non-cognitive outcomes for eighth grade students in the AVID middle school program when compared to those eighth grade students not in the AVID middle school program.	Academic Outcomes	MSA Math	Null Rejected
		MSA Reading	Null Accepted
		MSA Science	Null Accepted
	Non-Cognitive Outcomes	Days Absent	Null Accepted
		Days Suspended	Null Accepted
Null Hypothesis 2: There is no statistically significant difference in academic outcomes or non-cognitive outcomes for eighth grade ethnic minority students in the AVID middle school program when compared to those eighth grade White students not in the AVID middle school program.	Academic Outcomes	MSA Math	Null Accepted
		MSA Reading	Null Rejected
		MSA Science	Null Rejected
	Non-Cognitive Outcomes	Days Absent	Null Rejected
		Days Suspended	Null Accepted
Null Hypothesis 3: There is no statistically significant difference in academic outcomes or non-cognitive outcomes for eighth grade ethnic minority students not in the AVID middle school program when compared to those eighth grade White students not in the AVID middle school program.	Academic Outcomes	MSA Math	Null Rejected
		MSA Reading	Null Rejected
		MSA Science	Null Rejected
	Non-Cognitive Outcomes	Days Absent	Null Accepted
		Days Suspended	Null Rejected
Null Hypothesis 4: There is no statistically significant difference in academic outcomes or non-cognitive outcomes for eighth grade African American male students in the AVID middle school program when compared to those eighth grade African American male students not in the AVID middle school program.	Academic Outcomes	MSA Math	Null Rejected
		MSA Reading	Null Accepted
		MSA Science	Null Accepted
	Non Cognitive Outcomes	Days Absent	Null Accepted
		Days Suspended	Null Accepted
Null Hypothesis 5: There is no statistically significant difference in academic outcomes or non-cognitive outcomes for eighth grade students who had 1 year in the AVID middle school program when compared to those eighth grade students who had 2 years in the AVID middle school program.	Academic Outcomes	MSA Math	Null Accepted
		MSA Reading	Null Accepted
		MSA Science	Null Accepted
	Non-Cognitive Outcomes	Days Absent	Null Accepted
		Days Suspended	Null Accepted

The results of the one-way ANOVA tests that were run specifically to determine if there were statistical differences between schools, genders, and races are now presented.

Data Analysis of One-Way ANOVA Difference Between Schools: Table 3

The analysis of variance (ANOVA), in Table 3, shows a non-statistically significant difference between the groups in MSA Reading scores, F (7, 158) = 2.023, p =.066, Days Suspended, F (7, 158) = 1.508, p =.179, and in Days Absent, F (7, 158) = .947, p =.463. However, the ANOVA (see Table 3) shows a statistically significant difference between the groups in MSA Math scores, F (7, 158) = 8.624, p =.000, and in MSA Science scores, F (7, 158) = 3.584, p =.002.

Table 3

One-Way ANOVA to Determine Difference Between Schools

ANOVA

		Sum of Squares	*df*	Mean Square	*F*	Sig.
Read MSA 09-10	Between Groups	6119.772	6	1019.962	2.023	.066
	Within Groups	79659.492	158	504.174		
	Total	85779.248	164			
Math MSA 09-10	Between Groups	22772.319	6	3795.387	8.624	.000
	Within Groups	69537.256	158	440.109		
	Total	92309.576	164			
Science MSA 09-10	Between Groups	19695.188	6	3282.531	3.584	.002
	Within Groups	144697.322	158	915.806		
	Total	164392.509	164			
Days Suspended 09-10	Between Groups	13.629	6	2.271	1.508	.179
	Within Groups	237.971	158	1.506		
	Total	251.600	164			
Days Absent 09-10	Between Groups	139.590	6	23.265	.947	.463
	Within Groups	3880.904	158	24.563		
	Total	4020.494	164			

Data Analysis of One-Way ANOVA Difference Between Races: Table 4

The analysis of variance (ANOVA), in Table 4, shows a non-statistically significant difference between the groups in MSA Reading scores, F (4, 160) = .800, p =.527, Days Suspended, F (4, 160) = .188, p =.944, and in Days Absent, F (4, 160) = 1.835, p =.125. However, the ANOVA (see Table 4) shows a statistically significant difference between the groups in MSA Math scores, F (4, 160) = 2.506, p =.044, and in MSA Science scores, F (4, 160) = 4.848, p =.002.

Table 4

One-Way ANOVA to Determine Difference Between Races

ANOVA

		Sum of Squares	*df*	Mean Square	*F*	Sig.
Read MSA 09-10	Between Groups	1682.422	4	420.605	.800	.527
	Within Groups	84096.827	160	525.605		
	Total	85779.248	164			
Math MSA 09-10	Between Groups	5442.682	4	1360.671	2.506	.044
	Within Groups	86866.893	160	542.918		
	Total	92309.576	164			
Science MSA 09-10	Between Groups	16571.724	4	4142.931	4.484	.002
	Within Groups	147820.785	160	923.880		
	Total	164392.509	164			
Days Suspended 09-10	Between Groups	1.177	4	.294	.188	.944
	Within Groups	250.423	160	1.565		
	Total	251.600	164			
Days Absent 09-10	Between Groups	176.340	4	44.085	1.835	.125
	Within Groups	3844.154	160	24.026		
	Total	4020.494	164			

Data Analysis of One-Way ANOVA Difference Between Genders: Table 5

The analysis of variance (ANOVA) in Table 5, shows a statistically significant difference between the groups in MSA Reading scores, $F(1, 163) = 4.218, p = .042$. However, the ANOVA (see Table 5) shows a non-statistically significant difference between the groups in MSA Math scores, $F(1, 163) = .587, p = .445$, MSA Science scores, $F(1, 163) = 3.412, p = .067$, Days Suspended, $F(1, 163) = .739, p = .391$, and in Days Absent, $F(1, 163) = 3.190, p = .076$.

Table 5

One-Way ANOVA to Determine Difference Between Genders

ANOVA

		Sum of Squares	*df*	Mean Square	*F*	Sig.
Read MSA 09-10	Between Groups	2164.395	1	2164.395	4.219	.042
	Within Groups	83614.853	163	512.975		
	Total	85779.248	164			
Math MSA 09-10	Between Groups	331.454	1	331.454	.587	.445
	Within Groups	91978.122	163	564.283		
	Total	92309.576	164			
Science MSA 09-10	Between Groups	3370.331	1	3370.331	3.412	.067
	Within Groups	161022.178	163	987.866		
	Total	164392.509	164			
Days Suspended 09-10	Between Groups	1.136	1	1.136	.739	.391
	Within Groups	250.464	163	1.537		
	Total	251.600	164			
Days Absent 09-10	Between Groups	77.163	1	77.163	3.190	.076
	Within Groups	3943.331	163	24.192		
	Total	4020.494	164			

Summary

This research study draws conclusions from the comparison of student performance measures to show if a statistically significant difference is present in the measures of:

- Students in the AVID middle school program as compared to those students not in the AVID program.
- Ethnic minority students in the AVID middle school program as compared to White students not in the AVID program.
- Ethnic minority students not in the AVID middle school program as compared to White students not in the AVID program.
- African American male students in the AVID middle school program as compared to African American male students not in the program.
- Students in the AVID middle school program for 1 year as compared to those students in the AVID program for 2 years.

This study aims to expand the research on the Advancement Via Individual Determination (AVID) program, specifically, at the middle school level. However, this research does not stop at merely comparing how middle school students in AVID fair when compared to middle school students not in AVID. This study looks at this programs ability to be an effective program worth implementing to assist in closing the achievement gap and further, evaluate this program's ability to assist the lowest achieving subgroup within that gap, namely, African American males. The key findings of this study are identified in the next chapter.

Chapter IV

FINDINGS

Introduction

This chapter provides the findings of the data analysis that examined the effectiveness of the AVID program on middle schools student's performance. The purpose of this study was to determine the effectiveness of a particular supplemental program, namely, AVID. The research examined the overall effectiveness of this supplemental program and its ability to close the achievement gap by analyzing data that compared; AVID students and non-AVID students, ethnic minority students in the program as compared to White students not in the program, ethnic minority students not in the program as compared to White students not in the program, African American male students in the program as compared to African American male students not in the program, and students in the program for 1 year as compared to those students in the program for 2 years.

This chapter contains the research questions, description of the data, and data analysis. The participants were 1,417 eighth grade middle school students from eight middle schools in the Baltimore County Public School system that had the AVID program during the 2009-2010 school year. Within these eight middle schools 165 students in the eighth grade AVID program were identified. This calculates to an average eighth grade AVID class size of 21 students in each school (20.6 rounded up to 21).

This study was guided by the five main research questions for which the findings are reported throughout this chapter, and at the end of each analysis a decision is made as to whether to accept or reject the null hypotheses. Those research questions are, (a) To what degree, if any, does the AVID middle school program contribute to the academic outcomes (Maryland School Assessments in math/reading/science) and non-cognitive outcomes

(attendance data and suspension data) of eighth grade students in the AVID middle school program as compared to those eighth grade students not in the AVID middle school program? (b) To what degree, if any, does the AVID middle school program contribute to the academic outcomes (Maryland School Assessments in math/reading/science) and non-cognitive outcomes (attendance data and suspension data) of closing the achievement gap of eighth grade ethnic minorities in the AVID middle school program as compared to those eighth grade white students not in the AVID middle school program? (c) To what degree, if any, are there differences in the academic outcomes (Maryland School Assessments in math/reading/science) and non-cognitive outcomes (attendance data and suspension data) of eighth grade ethnic minorities not in the AVID middle school program as compared to those eighth grade white students not in the AVID middle school program? (d) To what degree, if any, does the AVID middle school program contribute to the academic outcomes (Maryland School Assessments in math/reading/science) and non-cognitive outcomes (attendance data and suspension data) of eighth grade African American males in the AVID middle school program as compared to those eighth grade African American males who are not in the AVID middle school program? (e) To what degree, if any, is there a significant difference in the contribution to the academic outcomes (Maryland School Assessments in math/reading/science) and non-cognitive outcomes (attendance data and suspension data) of eighth grade students who had 1 year of the AVID middle school program as compared to those students who had 2 years of the AVID middle school program?

The student performance measures used for each research question were divided into two categories: the academic outcomes category represented by the Maryland School Assessments (MSA) in math/reading/science, and the non-cognitive outcomes; school district data on days absent and days suspended.

Null hypotheses 1. There is no statistically significant difference in academic outcomes or non-cognitive outcomes for eighth grade students in the AVID middle school program when compared to those eighth grade students not in the AVID middle school program.

There were 165 students identified as being in the eighth grade AVID program in the eight middle schools used in this study. Another 165 students not in the eighth grade AVID program were randomly selected using SPSS software to be compared to those students in the AVID program. Further, random sampling was conducted on the 165 students not in the AVID program in order to match the number of ethnic minorities to those of the 165 students in the AVID program. This was done to create a racial balance in the comparable groups to avoid the limitation of race imbalance in the comparable groups. This hypothesis was created to determine if there is an overall effectiveness of the AVID middle school program on the previously stated student performance measures. The statistical results and analysis of the data are shown in the tables below each analysis.

Data Analysis of Null Hypothesis 1

When comparing all eighth grade students that were in the AVID program compared to those eighth grade students that were not in the AVID program, an Analysis of Variance (ANOVA) was used to determine if there were any statistically significant differences between these two groups in terms of math, reading, science, days suspended, and days absent.

Maryland School Assessment (MSA): Reading

The ANOVA (see Table 7) showed no statistically significant difference between the two groups in reading scores $F(1, 328) = 0.458, p = .499$. Based on the descriptive analysis provided in Table 6, it shows that those eighth graders in the AVID middle school program had higher average means on the Reading assessment than those eighth graders who were not a part

of the AVID middle school program (M_1 = 410.23, M_2 =408.42), but again, it was not significant.

Maryland School Assessment (MSA): Math

Based on the inferential test, a statistically significant finding was discovered F (1, 328) = 8.794, $p < .003$ between the groups in which the eighth grade students in the AVID middle school program (M = 415.12) scored higher on average on the math assessment than those eighth grade students not in the AVID middle school program (M = 406.96).

Since this is the only area of a statistical significant interaction between School and AVID in this research question, included is a profile plot for MSA Math, Figure 1. Further, the calculations of effect size (.028 partial eta squared) reveal that the magnitude of the effect is considered weak because the differences between the scores is very small. (Refer to Appendix I for null hypothesis 1: Math effect size.)

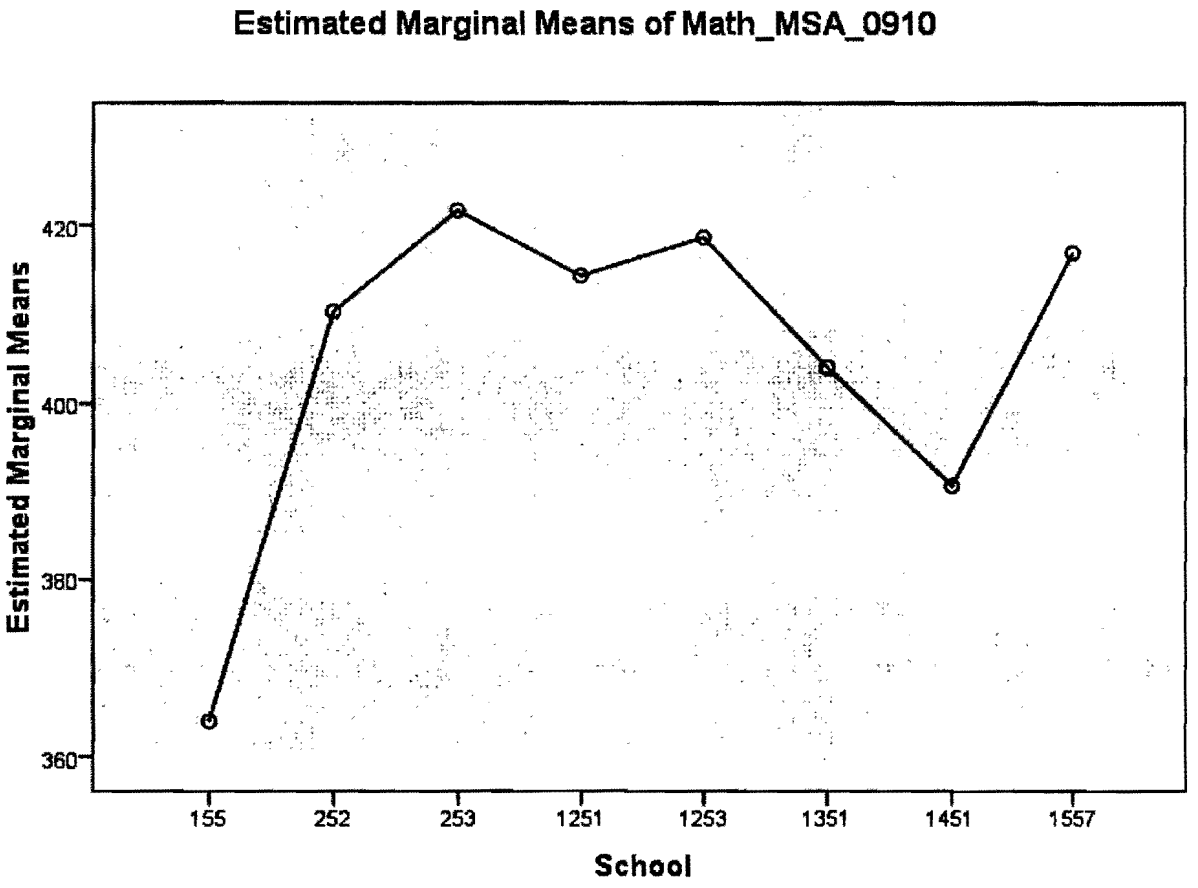


Figure 1. Profile plot of estimated marginal means of math MSA 09-10

Days Suspended:

No statistically significant finding was seen in Days Suspended $F(1, 328) = 2.183, p = .140$. However, although the difference was not significant, those eighth grade students in the AVID middle school program were reported to have fewer days of suspension on average than those eighth grade students not in the AVID middle school program ($M_1 = 0.40$, $M_2 = 0.65$).

Days Absent:

There was no statistically significant difference seen in Days Absent between eighth grade students in the AVID middle school program and eighth grade students not in the AVID

middle school program. However, a difference was seen in the averages (M_1 =5.21, M_2 = 5.80), where those students in the AVID middle school program were reported to have fewer days absent than those students not in the AVID middle school program, however, that difference was deemed to be not statistically significant as well $F(1, 328) = 1.025, p = .312$.

Maryland School Assessment (MSA): Science

The Science assessment analysis found no statistically significant difference between the two groups $F(1, 328) = 2.274, p = .133$. However, those eighth grade students in AVID middle school program scored higher on average on the Science assessment ($M = 400.15$) than those eighth grade students who were not in the AVID middle school program ($M = 394.53$).

Thus, the null hypothesis was rejected at the .05 level for math, and accepted at the .05 level for reading, science, days absent, and days suspended as summarized in Table 2.

Table 6

8th Grade Middle School Students in AVID / Not in AVID

Descriptives

						95% Confidence Interval for Mean			
		N	Mean	Std. Deviation	Std. Error	Lower Bound	Upper Bound	Minimum	Maximum
Read MSA 09-10	AVID	165	410.23	22.870	1.780	406.71	413.75	354	471
	Not in AVID	165	408.42	25.553	1.989	404.50	412.35	350	485
	Total	330	409.33	24.229	1.334	406.70	411.95	350	485
Math MSA 09-10	AVID	165	415.12	23.725	1.847	411.47	418.77	364	486
	Not in AVID	165	406.96	26.185	2.039	402.94	410.99	338	482
	Total	330	411.04	25.279	1.392	408.30	413.78	338	486
Science MSA 09-10	AVID	165	400.15	31.661	2.465	395.28	405.01	315	500
	Not in AVID	165	394.53	35.824	2.789	389.03	400.04	254	482
	Total	330	397.34	33.872	1.865	393.67	401.01	254	500
Days Suspended 09-10	AVID	165	.400	1.2386	.0964	.210	.590	.0	7.0
	Not in AVID	165	.648	1.7697	.1378	.376	.921	.0	11.0
	Total	330	.524	1.5301	.0842	.359	.690	.0	11.0
Days Absent 09-10	AVID	165	5.206	4.9513	.3855	4.445	5.967	.0	27.0
	Not in AVID	165	5.800	5.6799	.4422	4.927	6.673	.0	38.0
	Total	330	5.503	5.3283	.2933	4.926	6.080	.0	38.0

Table 7

8th Grade Middle School Students in AVID / Not in AVID

ANOVA

		Sum of Squares	*df*	Mean Square	*F*	Sig.
Read MSA 09-10	Between Groups	269.103	1	269.103	.458	.499
	Within Groups	192865.552	328	588.005		
	Total	193134.655	329			
Math MSA 09-10	Between Groups	5490.048	1	5490.048	8.794	.003
	Within Groups	204757.358	328	624.260		
	Total	210247.406	329			
Science MSA 09-10	Between Groups	2598.412	1	2598.412	2.274	.133
	Within Groups	374863.576	328	1142.877		
	Total	377461.988	329			
Days Suspended 09-10	Between Groups	5.094	1	5.094	2.183	.140
	Within Groups	765.212	328	2.333		
	Total	770.306	329			
Days Absent 09-10	Between Groups	29.103	1	29.103	1.025	.312
	Within Groups	9311.394	328	28.388		
	Total	9340.497	329			

Data Analysis of Two-Way ANOVA for Null Hypothesis 1

A two-way ANOVA (see Table 8) was used to test for score differences among schools as well as participation in AVID. MSA Reading scores differed significantly across the schools, $F(7, 315) = 3.02, p = .004$, but did not differ among AVID group $F(1, 315) = .203, p = .653$. Furthermore, the interaction effect, School*AVID, was not deemed significant $F(6, 315) = .413, p = .870$. (Refer to Appendix G for the mean differences between the schools used in this study and their significance.)

Table 8

Data Analysis of Two-Way ANOVA for Null Hypothesis 1: MSA Reading

Tests of Between-Subjects Effects

Dependent Variable: MSA Reading 2009-10

Source	Type III Sum of Squares	*df*	Mean Square	*F*	Sig.
Corrected Model	13835.607[a]	14	988.258	1.736	.048
Intercept	2.334E7	1	2.334E7	40999.437	.000
School	12062.288	7	1723.184	3.027	.004
AVID	115.463	1	115.463	.203	.653
School * AVID	1411.566	6	235.261	.413	.870
Error	179299.048	315	569.203		
Total	5.548E7	330			
Corrected Total	193134.655	329			

a. R Squared = .072 (Adjusted R Squared = .030)

A two-way ANOVA (see Table 9) was used to test for score differences among schools as well as participation in AVID. MSA Math scores differed significantly across the schools, $F(7, 315) = 10.083, p = .000$, and among AVID group $F(1, 315) = 6.653, p = .010$. Furthermore, the interaction effect, School*AVID, was not deemed significant for MSA Math $F(6, 315) = 1.499, p = .178$. (Refer to Appendix H for the mean differences between the schools used in this study and their significance.)

Table 9

Data Analysis of Two-Way ANOVA for Null Hypothesis 1: MSA Math

Tests of Between-Subjects Effects

Dependent Variable: MSA Math 2009-10

Source	Type III Sum of Squares	*df*	Mean Square	*F*	Sig.
Corrected Model	46095.783[a]	14	3292.556	6.318	.000
Intercept	2.340E7	1	2.340E7	44902.323	.000
School	36780.182	7	5254.312	10.083	.000
AVID	3466.926	1	3466.926	6.653	.010
School * AVID	4688.288	6	781.381	1.499	.178
Error	164151.624	315	521.116		
Total	5.597E7	330			
Corrected Total	210247.406	329			

a. R Squared = .219 (Adjusted R Squared = .185)

A two-way ANOVA (see Table 10) was used to test for score differences among schools as well as participation in AVID. MSA Science scores differed significantly across the schools, $F(7, 315) = 4.152, p = .000$, but did not differ among AVID group $F(1, 315) = 1.024, p = .312$. Furthermore, the interaction effect, School*AVID, was not deemed significant $F(6, 315) = .458, p = .839$. (Refer to Appendix I for the mean differences between the schools used in this study and their significance.)

Table 10

Data Analysis of Two-Way ANOVA for Null Hypothesis 1: MSA Science

Tests of Between-Subjects Effects

Dependent Variable: MSA Science 2009-10

Source	Type III Sum of Squares	*df*	Mean Square	*F*	Sig.
Corrected Model	36694.742[a]	14	2621.053	2.423	.003
Intercept	2.177E7	1	2.177E7	20127.598	.000
School	31443.284	7	4491.898	4.152	.000
AVID	1107.788	1	1107.788	1.024	.312
School * AVID	2975.504	6	495.917	.458	.839
Error	340767.246	315	1081.801		
Total	5.248E7	330			
Corrected Total	377461.988	329			

a. R Squared = .097 (Adjusted R Squared = .057)

A two-way ANOVA (see Table 11) was used to test for score differences among schools as well as participation in AVID. Days Suspended did not differ significantly across the schools, F (7, 315) = 1.507, p = .164, and did not differ among AVID group F (1, 315) = 2.860, p = .092. Furthermore, the interaction effect, School*AVID, was not deemed significant F (6, 315) = .698, p = .652. (Refer to Appendix J for the mean differences between the schools used in this study and their significance.)

Table 11

Data Analysis of Two-Way ANOVA for Null Hypothesis 1: Days Suspended

Tests of Between-Subjects Effects

Dependent Variable: Days Suspended 2009-10

Source	Type III Sum of Squares	*df*	Mean Square	*F*	Sig.
Corrected Model	37.347[a]	14	2.668	1.146	.316
Intercept	66.039	1	66.039	28.381	.000
School	24.538	7	3.505	1.507	.164
AVID	6.655	1	6.655	2.860	.092
School * AVID	9.741	6	1.624	.698	.652
Error	732.959	315	2.327		
Total	861.000	330			
Corrected Total	770.306	329			

a. R Squared = .048 (Adjusted R Squared = .006)

A two-way ANOVA (see Table 12) was used to test for score differences among schools as well as participation in AVID. Days Absent did not differ significantly across the schools, F (7, 315) = 1.999, p = .055, and it did not differ among AVID group F (1, 315) = .512, p = .475. Furthermore, the interaction effect, School*AVID, was not deemed significant F (6, 315) = 1.405, p = .212. (Refer to Appendix K for the mean differences between the schools used in this study and their significance.)

Table 12

Data Analysis of Two-Way ANOVA for Null Hypothesis 1

Tests of Between-Subjects Effects

Dependent Variable: Days Absent 2009-10

Source	Type III Sum of Squares	*df*	Mean Square	*F*	Sig.
Corrected Model	624.198[a]	14	44.586	1.611	.075
Intercept	4028.834	1	4028.834	145.599	.000
School	387.257	7	55.322	1.999	.055
AVID	14.166	1	14.166	.512	.475
School * AVID	233.193	6	38.866	1.405	.212
Error	8716.299	315	27.671		
Total	19334.000	330			
Corrected Total	9340.497	329			

a. R Squared = .067 (Adjusted R Squared = .025)

Research Question 1 Summary

To what degree, if any, does the AVID middle school program positively affect student performance measures for eighth grade students in the AVID middle school program as compared to those eighth grade students not in the AVID middle school program?

This research question was designed to inquire if students in the AVID middle school program outperformed students not in the AVID program. The findings revealed that students in the AVID middle school program outperformed those students not in the AVID program in every

measured variable. An Analysis of Variance (ANOVA) was used to determine if there were any differences between these two groups in terms of math, reading, science, days suspended, and days absent. The ANOVA (see Table 7) showed a higher mean score for those students in AVID than those students not in AVID in reading scores, math scores, science scores, and lower mean scores showing fewer days absent, and fewer days suspended. These outcomes reveal that the AVID middle school program maintained a higher mean average in every comparison; however, those mean averages did not result in a statistically significant result between AVID and non-AVID students except in the comparison for math.

As shown in Table 13, there is only one dependent variable that the data analysis revealed to be statistically significant and that was MSA Math. Although the other dependent variables were not considered statistically significant, as Table 13 shows, those students in the AVID Middle School Program had a higher average mean than those students not in the AVID Middle School Program on all three measurements of academic outcome, namely, the Maryland School Assessment (MSA) in reading, math, and science. Further, Table 13 shows that those students in the AVID Middle School Program had fewer absences and suspensions.

Table 13

Research Question 1: Summary of Results

	Statistically Significant	AVID Students (Means)	Non-AVID Students (Means)
MSA Reading	No	$M_1 = 410.23$	$M_1 = 408.42$
MSA Math	Yes	$M_1 = 415.12$	$M_1 = 406.96$
MSA Science	No	$M_1 = 400.15$	$M_1 = 394.53$
Days Absent	No	$M_1 = 5.21$	$M_1 = 5.80$
Days Suspended	No	$M_1 = 0.40$	$M_1 = 0.65$

As seen in the Table 13:

- AVID students had higher means in math, reading, and science, than non-AVID students.
- AVID students had fewer absences and suspensions than non-AVID students.

Null hypotheses 2. There is no statistically significant difference in academic outcomes or non-cognitive outcomes for eighth grade ethnic minority students in the AVID middle school program when compared to those eighth grade White students not in the AVID middle school program.

There were 111 ethnic minority students identified as being in the eighth grade AVID program in the eight middle schools used in this study. Another 111 White students not in the eighth grade AVID program were randomly selected using SPSS software to be compared to those 111 ethnic minority students in the AVID program. This null hypothesis was created to see if there is an overall effectiveness of the AVID middle school program on closing the achievement gap between ethnic minority students and white students. The statistical results and analysis of the data are shown in the next section.

Data Analysis of Null Hypothesis 2

When comparing ethnic minority students that were in the AVID middle school program to White students that were not in the AVID middle school program, an Analysis of Variance (ANOVA) was used to determine if there were any statistically significant differences between these two groups in terms of math, reading, science, days suspended, and days absent.

Maryland School Assessment (MSA): Reading

The ANOVA (see Table 15) showed a statistically significant difference between the two groups in reading scores $F(1, 220) = 5.488, p = .020$. Based on the data provided in Table 14, ethnic minority students in the AVID middle school program scored lower on average on the test

than White students that were not a part of the AVID middle school program ($M_1 = 410.16$, $M_2 = 417.94$).

Maryland School Assessment (MSA): Math

Based on the inferential test, no significant finding was discovered between the groups in math scores $F(1, 220) = 2.673$, $p = .106$ in which the ethnic minority students in the AVID middle school program ($M = 413.14$) scored lower than white students not in the AVID middle school program ($M = 418.95$).

Days Absent:

A statistically significant finding was seen in days absent $F(1, 220) = 8.842$, $p < .003$. Those ethnic minority students in the AVID middle school program were reported to have fewer days of absenteeism than those White students not in the AVID middle school program ($M_1 = 4.59$, $M_2 = 6.806$).

Days Suspended:

There was no statistically significant difference between ethnic minority students in the AVID middle school program and White students not in the AVID middle school program was in Days Suspended. However, a difference was seen in the averages ($M_1 = 0.38$, $M_2 = 0.41$), where it was reported that ethnic minorities in the AVID middle school program had fewer days suspended than those White students not in the AVID middle school program but the difference was deemed not statistically significant $F(1, 220) = 0.054$, $p = .816$.

Maryland School Assessment (MSA): Science

Science was found to have a statistically significant difference between the two groups $F(1, 220) = 19.088$, $p < .001$. The ethnic minority students in the AVID program scored lower ($M = 394.77$) than the White students not in the AVID program ($M = 414.05$), the difference was statistically significant.

Thus, the null hypothesis was rejected at the .05 level for reading, science, and days absent, and accepted at the .05 level for math, and days suspended as summarized in Table 2. If the null hypothesis for the ANOVA was rejected, the Bonferroni multiple comparison post hoc testing was done to determine the differences. This was done for research questions 2 to 5 with pairwise comparisons.

Table 14

Ethnic Minority Students in AVID / White Students Not in AVID

Descriptives

						95% Confidence Interval for Mean			
		N	Mean	Std. Deviation	Std. Error	Lower Bound	Upper Bound	Minimum	Maximum
Read_MSA_0910	AVID	111	410.16	20.812	1.975	406.25	414.08	362	459
	Not in AVID	111	417.94	28.097	2.667	412.65	423.22	350	485
	Total	222	414.05	24.974	1.676	410.75	417.35	350	485
Math_MSA_0910	AVID	111	413.14	24.229	2.300	408.58	417.69	364	478
	Not in AVID	111	418.95	28.958	2.749	413.51	424.40	373	493
	Total	222	416.05	26.797	1.799	412.50	419.59	364	493
Science_MSA_0910	AVID	111	394.77	28.208	2.677	389.47	400.08	315	447
	Not in AVID	111	414.05	36.930	3.505	407.10	420.99	338	506
	Total	222	404.41	34.178	2.294	399.89	408.93	315	506
SuspDays0910	AVID	111	.378	1.1759	.1116	.157	.600	.0	7.0
	Not in AVID	111	.414	1.1239	.1067	.203	.626	.0	5.0
	Total	222	.396	1.1477	.0770	.245	.548	.0	7.0
Days_Abs_0910	AVID	111	4.590	4.2336	.4018	3.794	5.386	.0	22.0
	Not in AVID	111	6.806	6.6131	.6277	5.562	8.050	.0	38.0
	Total	222	5.698	5.6500	.3792	4.951	6.446	.0	38.0

Table 15

Ethnic Minority Students in AVID / White Students Not in AVID

ANOVA

		Sum of Squares	*df*	Mean Square	*F*	Sig.
Read_MSA_0910	Between Groups	3354.815	1	3354.815	5.488	.020
	Within Groups	134485.640	220	611.298		
	Total	137840.455	221			
Math_MSA_0910	Between Groups	1879.802	1	1879.802	2.637	.106
	Within Groups	156817.748	220	712.808		
	Total	158697.550	221			
Science_MSA_0910	Between Groups	20609.554	1	20609.554	19.088	.000
	Within Groups	237542.144	220	1079.737		
	Total	258151.698	221			
SuspDays0910	Between Groups	.072	1	.072	.054	.816
	Within Groups	291.045	220	1.323		
	Total	291.117	221			
Days_Abs_0910	Between Groups	272.595	1	272.595	8.842	.003
	Within Groups	6782.185	220	30.828		
	Total	7054.779	221			

Data Analysis of Two-Way ANOVA for Null Hypothesis 2

A two-way ANOVA (see Table 16) was used to test for score differences among schools as well as participation in AVID. MSA Reading scores did not differ significantly across the schools, F (6, 210) = .753, p = .608, but did differ among AVID group F (1, 210) = 7.756, p = .006. Furthermore, the interaction effect, School*AVID, was deemed significant F (4, 210) = 3.313, p = .012. (Refer to Appendix L for the mean differences between the schools used in this study and their significance.)

Table 16

Data Analysis of Two-Way ANOVA for Null Hypothesis 2: MSA Reading

Tests of Between-Subjects Effects

Dependent Variable: MSA Reading 2009-10

Source	Type III Sum of Squares	*df*	Mean Square	*F*	Sig.
Corrected Model	18178.091[a]	11	1652.554	2.900	.001
Intercept	2.594E7	1	2.594E7	45523.673	.000
School	2573.690	6	428.948	.753	.608
AVID	4419.532	1	4419.532	7.756	.006
School * AVID	7550.549	4	1887.637	3.313	.012
Error	119662.364	210	569.821		
Total	3.820E7	222			
Corrected Total	137840.455	221			

a. R Squared = .132 (Adjusted R Squared = .086)

A two-way ANOVA (see Table 17) was used to test for score differences among schools as well as participation in AVID. MSA Math scores differed significantly across the schools, $F(6, 210) = 3.360, p = .003$, but did not differ among AVID group $F(1, 210) = 3.818, p = .052$. Furthermore, the interaction effect, School*AVID, was deemed significant $F(4, 210) = 5.184, p = .001$. (Refer to Appendix M for the mean differences between the schools used in this study and their significance.)

Table 17

Data Analysis of Two-Way ANOVA for Null Hypothesis 2: MSA Math

Tests of Between-Subjects Effects

Dependent Variable: MSA Math 2009-10

Source	Type III Sum of Squares	*df*	Mean Square	*F*	Sig.
Corrected Model	30005.678[a]	11	2727.789	4.451	.000
Intercept	2.639E7	1	2.639E7	43069.713	.000
School	12353.735	6	2058.956	3.360	.003
AVID	2339.659	1	2339.659	3.818	.052
School * AVID	12708.105	4	3177.026	5.184	.001
Error	128691.871	210	612.818		
Total	3.859E7	222			
Corrected Total	158697.550	221			

a. R Squared = .189 (Adjusted R Squared = .147)

A two-way ANOVA (see Table 18) was used to test for score differences among schools as well as participation in AVID. MSA Science scores did not differ significantly across the schools, $F(6, 210) = 1.554, p = .162$, but did differ among AVID group $F(1, 210) = 10.353, p = .001$. Furthermore, the interaction effect, School*AVID, was not deemed significant $F(4, 210) = 1.913, p = .110$. (Refer to Appendix N for the mean differences between the schools used in this study and their significance.)

Table 18

Data Analysis of Two-Way ANOVA for Null Hypothesis 2: MSA Science

Tests of Between-Subjects Effects

Dependent Variable: MSA Science 2009-10

Source	Type III Sum of Squares	*df*	Mean Square	*F*	Sig.
Corrected Model	37942.148[a]	11	3449.286	3.289	.000
Intercept	2.492E7	1	2.492E7	23762.160	.000
School	9774.604	6	1629.101	1.554	.162
AVID	10855.888	1	10855.888	10.353	.001
School * AVID	8022.996	4	2005.749	1.913	.110
Error	220209.551	210	1048.617		
Total	3.657E7	222			
Corrected Total	258151.698	221			

a. R Squared = .147 (Adjusted R Squared = .102)

A two-way ANOVA (see Table 19) was used to test for score differences among schools as well as participation in AVID. Days Suspended did not differ significantly across the schools, $F(6, 210) = 1.022$, $p = .412$, and did not differ among AVID group $F(1, 210) = .043$, $p = .837$. Furthermore, the interaction effect, School*AVID, was not deemed significant $F(4, 210) = 1.091$, $p = .362$. (Refer to Appendix O for the mean differences between the schools used in this study and their significance.)

Table 19

Data Analysis of Two-Way ANOVA for Null Hypothesis 2: Days Suspended

Tests of Between-Subjects Effects

Dependent Variable: Days Suspended 2009-10

Source	Type III Sum of Squares	*df*	Mean Square	*F*	Sig.
Corrected Model	17.683[a]	11	1.608	1.235	.266
Intercept	19.763	1	19.763	15.178	.000
School	7.985	6	1.331	1.022	.412
AVID	.055	1	.055	.043	.837
School * AVID	5.680	4	1.420	1.091	.362
Error	273.434	210	1.302		
Total	326.000	222			
Corrected Total	291.117	221			

a. R Squared = .061 (Adjusted R Squared = .012)

A two-way ANOVA (see Table 20) was used to test for score differences among schools as well as participation in AVID. Days Absent did not differ significantly across the schools, $F(6, 210) = 1.583$, $p = .153$, and did not differ among AVID group $F(1, 210) = 1.750$, $p = .187$. Furthermore, the interaction effect, School*AVID, was not deemed significant $F(4, 210) = 1.450$, $p = .219$. (Refer to Appendix P for the mean differences between the schools used in this study and their significance.)

Table 20

Data Analysis of Two-Way ANOVA for Null Hypothesis 2: Days Absent

Tests of Between-Subjects Effects

Dependent Variable: Days Absent 2009-10

Source	Type III Sum of Squares	*df*	Mean Square	*F*	Sig.
Corrected Model	832.167[a]	11	75.652	2.553	.005
Intercept	4359.947	1	4359.947	147.139	.000
School	281.406	6	46.901	1.583	.153
AVID	51.864	1	51.864	1.750	.187
School * AVID	171.885	4	42.971	1.450	.219
Error	6222.613	210	29.631		
Total	14263.000	222			
Corrected Total	7054.779	221			

a. R Squared = .118 (Adjusted R Squared = .072)

Research Question 2 Summary

To what degree, if any, is the AVID middle school program effective in closing the achievement gap by positively affecting student performance measures of eighth grade ethnic minorities in the AVID middle school program as compared to those eighth grade White students not in the AVID middle school program?

This research question was designed to inquire if the AVID middle school program is an effective program for closing the achievement gap. The findings revealed that ethnic minority students in the AVID middle school program did not outperform the White students that were not in the AVID program in reading, math, or science. An Analysis of Variance (ANOVA) was used to determine if there were any significant differences between these two groups in terms of math, reading, science, days suspended, and days absent. The ANOVA (see Table 15) showed a statistically significant difference between the two groups in reading scores, science scores, and in days absent. There was no significant difference reported for days suspended or for the math exam scores. However, the ethnic minority students in the AVID middle school program had fewer days of suspensions and statistically significant fewer days absent when compared with White students not in the AVID program. These outcomes do not reveal the AVID middle school program to be an effective program in closing the achievement gap by assisting ethnic minority students to outperform White students in the measurable variables explained above. However, it may be said that the AVID program assisted in narrowing the achievement gap by raising ethnic minority achievement scores overall.

As shown in Table 21, there are three dependent variables that the data analysis revealed to be statistically significant and they were in MSA Reading, MSA Math, and Days Absent. However, MSA Reading and MSA Math scores were considered statistically significant in favor of the non-AVID White students rather than the AVID ethnic minority students, while the Days Absent were statistically significant in favor of the AVID ethnic minority students. The other dependent variables of MSA Math and Days Suspended were not considered statistically significant. Those ethnic minority

students in the AVID Middle School Program scored lower on average than those White students not in the AVID Middle School Program in all three measurements of academic outcome, namely, the Maryland School Assessment (MSA) in reading, math, and science. However, Table 21 shows that those ethnic minority students in the AVID Middle School Program had fewer absences and suspensions than white students not in the AVID Middle School Program.

Table 21

Research Question 2: Summary of Results

	Statistically Significant	AVID Ethnic Minority Students (Means)	Non-AVID White Students (Means)
MSA Reading	Yes	$M_1 = 410.16$	$M_1 = 417.94$
MSA Math	No	$M_1 = 413.14$	$M_1 = 418.95$
MSA Science	Yes	$M_1 = 394.77$	$M_1 = 414.05$
Days Absent	Yes	$M_1 = 4.59$	$M_1 = 6.806$
Days Suspended	No	$M_1 = 0.38$	$M_1 = 0.41$

As seen in the Table 21:

- AVID ethnic minority students had fewer absences and suspensions than non-AVID White students
- AVID ethnic minority students scored lower in math, reading, and science than non-AVID White students. However, as shown in the results for research question 3, ethnic minority students in AVID narrowed that achievement gap, although they did not completely close the achievement gap.

Null hypotheses 3. There is no statistically significant difference in academic outcomes or non-cognitive outcomes for eighth grade ethnic minority students not in the AVID middle school program when compared to those eighth grade White students not in the AVID middle school program.

There were 111 ethnic minority students identified as being in the eighth grade AVID program in the eight middle schools used in this study. For this research question, the 351 ethnic minority students identified as not in the AVID program were compared to 111 White students not in the AVID program in research question 2. This null hypothesis was created to examine how ethnic minority students not in the AVID program and White students not in the AVID program compare to each other in both academic and non-cognitive outcomes. Further, those results were compared to the results in research question 2 where ethnic minority students in AVID are compared to white students not in AVID. This analysis of comparison was used to examine if the AVID program is effective in assisting ethnic minorities in closing the achievement gap between them and White students by further comparing the mean scores of ethnic minorities in AVID in research question 2 with those ethnic minorities not in AVID in research question 3.

Data Analysis of Null Hypothesis 3

When comparing ethnic minority students that were not in the AVID middle school program to white students that were not in the AVID middle school program, an Analysis of Variance (ANOVA) was used to determine if there were any differences between these two groups in terms of math, reading, science, days suspended, and days absent.

Maryland School Assessment (MSA): Reading

The ANOVA (see Table 23) showed a statistically significant difference between the two groups in reading scores $F(1, 460) = 14.934, p = .000$. Based on the descriptive analysis provided in Table 22, it shows that ethnic minority students not in the AVID middle school program scored lower on average on the test than White students that were also not a part of the AVID middle school program ($M_1 = 405.38$, $M_2 = 417.94$). However, compare those results to the mean results between ethnic minorities students in AVID compared to White students not in AVID in research question 2 ($M_1 = 410.16$, $M_2 = 417.94$), and the means reveal that ethnic minority students in AVID ($M_1 = 410.16$) scored higher on average in reading than those ethnic minorities not in AVID ($M_1 = 405.38$). (Refer to Table 24 for a summary of results.)

Maryland School Assessment (MSA): Math

Based on the inferential test, a significant finding was also discovered $F(1, 460) = 13.287, p = .000$ between the groups in which the ethnic minority students not in the AVID middle school program scored lower ($M_1 = 407.11$) than White students not in the AVID middle school program ($M_2 = 418.95$). Compare those results to the mean results between ethnic minorities students in AVID compared to White students not in AVID in research question 2 ($M_1 = 413.14$, $M_2 = 418.95$), and the means reveal that ethnic minority students in AVID ($M_1 = 413.14$) scored higher on average in math than those ethnic minorities not in AVID ($M_1 = 407.11$).

Days Absent

A statistically significant finding was not seen in days absent $F(1, 460) = .883, p = .348$. Those ethnic minority students not in the AVID middle school program were reported to have fewer days of absenteeism than those White students not in the AVID

middle school program (M_1 = 6.184, M_2 = 6.806). Compare those results to the mean results between ethnic minorities students in AVID compared to White students not in AVID in research question 2 (M_1 = 4.59, M_2 = 6.806), and the means reveal that ethnic minority students in AVID (M_1 = 4.59) were reported to have fewer days of absenteeism than those ethnic minorities not in AVID (M_1 = 6.184).

Days Suspended

There was a statistically significant difference between ethnic minority students not in the AVID middle school program and White students not in the AVID middle school program in days suspended F (1, 460) = 7.126, p = .008. Those ethnic minority students not in the AVID middle school program were reported to have more days of suspension than those White students not in the AVID middle school program (M_1 =1.06, M_2 = .41). Compare those results to the mean results between ethnic minorities students in AVID compared to White students not in AVID in research question 2 (M_1 =.38, M_2 =.41), and the means reveal that ethnic minority students in AVID (M_1 = .38) were reported to have fewer days of suspension than those ethnic minorities not in AVID (M_1 = 1.06).

Maryland School Assessment (MSA): Science

Science was found to have a statistically significant difference between the two groups F (1, 460) = 52.797, p = .000. Those ethnic minority students not in the AVID middle school program were reported to have lower scores in science than those White students not in the AVID middle school program (M_1 = 386.77, M_2 = 414.05). However, compare those results to the mean results between ethnic minorities students in AVID compared to White students not in AVID in research question 2 (M_1 = 394.77, M_2 =

414.05), and the means reveal that ethnic minority students in AVID (M_1 = 394.77) were reported to have higher science scores than those ethnic minorities not in AVID (M_1 =386.77).

Thus, the null hypothesis was rejected at the .05 level for math, reading, science, and days suspended as summarized in Table 2.

Table 22

Ethnic Minority Students Not in AVID / White Students Not in AVID

Descriptives

						95% Confidence Interval for Mean		Minimum	Maximum
		N	Mean	Std. Deviation	Std. Error	Lower Bound	Upper Bound		
Read MSA 09-10	White	111	417.94	28.097	412.65	412.65	332	350	485
	Minority	351	405.38	30.361	402.19	402.19	332	332	520
	Total	462	408.40	30.283	405.63	405.63	373	332	520
Math MSA 09-10	White	111	418.95	28.958	413.51	413.51	336	373	493
	Minority	351	407.11	30.128	403.94	403.94	336	336	532
	Total	462	409.95	30.248	407.19	407.19	338	336	532
Science MSA 09-10	White	111	414.05	36.930	407.10	407.10	282	338	506
	Minority	351	386.77	33.653	383.24	383.24	282	282	485
	Total	462	393.33	36.350	390.00	390.00	.0	282	506
Days Suspended 09-10	White	111	.414	1.1239	.203	.203	.0	.0	5.0
	Minority	351	1.057	2.4547	.799	.799	.0	.0	17.0
	Total	462	.903	2.2252	.699	.699	.0	.0	17.0
Days Absent 09-10	White	111	6.806	6.6131	5.562	5.562	.0	.0	38.0
	Minority	351	6.184	5.9086	5.563	5.563	.0	.0	33.0
	Total	462	6.333	6.0837	5.777	5.777	350	.0	38.0

Table 23

Ethnic Minority Students Not in AVID / White Students Not in AVID

ANOVA

		Sum of Squares	*df*	Mean Square	*F*	Sig.
Read MSA 09-10	Between Groups	13293.317	1	14.934	14.934	.000
	Within Groups	409461.402	460			
	Total	422754.719	461			
Math MSA 09-10	Between Groups	11841.078	1	13.287	13.287	.000
	Within Groups	409945.874	460			
	Total	421786.952	461			
Science MSA 09-10	Between Groups	62713.653	1	52.797	52.797	.000
	Within Groups	546399.994	460			
	Total	609113.647	461			
Days Suspended 09-10	Between Groups	34.820	1	7.126	7.126	.008
	Within Groups	2247.797	460			
	Total	2282.617	461			
Days Absent 09-10	Between Groups	32.684	1	.883	.883	.348
	Within Groups	17029.483	460			
	Total	17062.167	461			

Research Question 3 Summary

To what degree, if any, are there differences in the academic outcomes (Maryland School Assessments in math/reading/science) and non-cognitive outcomes (attendance data and suspension data) of eighth grade ethnic minorities not in the AVID middle school program as compared to those eighth grade White students not in the AVID middle school program?

In the previous research question, research question 2, it was explained that ethnic minority students did not completely close the achievement gap between them and White students. This third research question was created to examine how ethnic minority students not in the AVID program and white students not in the AVID program compare to each other in both academic and non-cognitive outcomes. Further, those results were compared to the results of research question 2

in which ethnic minority students in AVID are compared to White students not in AVID from research question 2. This analysis of comparison is used to examine if the AVID program is effective in assisting ethnic minorities in closing the achievement gap between them and White students by further comparing the mean scores of ethnic minorities in AVID from research question 2 with those ethnic minorities not in AVID in this third research question. The statistical results and analysis of the data are described and Table 24 provides a comparison table for reference.

When comparing ethnic minority students that were not in the AVID middle school program to white students that were not in the AVID middle school program, an Analysis of Variance (ANOVA) was used to determine if there were any differences between these two groups in terms of math, reading, science, days suspended, and days absent. The ANOVA (see Table 23) showed a statistically significant difference between the two groups in Reading scores $F(1, 460) = 14.934, p = .000$. Based on the descriptive analysis provided in Table 22, it shows that ethnic minority students not in the AVID middle school program scored lower on average on the test than white students that were also not a part of the AVID middle school program ($M_1 = 405.38$, $M_2 = 417.94$). However, compare those results to the mean results between ethnic minorities students in AVID compared to white students not in AVID in research question 2 ($M_1 = 410.16$, $M_2 = 417.94$), and the means reveal that ethnic minority students in AVID ($M_1 = 410.16$) scored higher on average in reading than those ethnic minorities not in AVID ($M_1 = 405.38$).

Based on the inferential test, a significant finding was also discovered for Math, $F(1, 460) = 13.287, p = .000$ between the groups in which the ethnic minority students not in the AVID middle school program scored lower ($M = 407.11$) than white students not in the AVID middle school program ($M = 418.95$). Compare those results to the mean results between ethnic minorities students in AVID compared to White students not in avid in research question 2 ($M = 413.14$, $M =$

418.95), and the means reveal that ethnic minority students in AVID (M_1 = 413.14) scored higher on average in math than those ethnic minorities not in AVID (M_1 = 407.11).

A statistically significant finding was not seen in Days Absent F (1, 460) = .883, p = .348. Those ethnic minority students not in the AVID middle school program were reported to have fewer days of absenteeism than those white students not in the AVID middle school program (M_1 =6.184, M_2 = 6.806). Compare those results to the mean results between ethnic minorities students in AVID compared to White students not in AVID in research question 2 (M_1 = 4.59, M_2 = 6.806), and the means reveal that ethnic minority students in AVID (M_1 = 4.59) were reported to have fewer days of absenteeism than those ethnic minorities not in AVID (M_1 = 6.184).

There was a statistically significant difference between ethnic minority students not in the AVID middle school program and White students not in the AVID middle school program in Days Suspended F (1, 460) = 7.126, p = .008. Those ethnic minority students not in the AVID middle school program were reported to have more days of suspension than those White students not in the AVID middle school program (M_1 =1.06, M_2 = .41). Compare those results to the mean results between ethnic minorities students in AVID compared to White students not in AVID in research question 2 (M_1 =.38, M_2 =.41), and the means reveal that ethnic minority students in AVID (M_1 = .38) were reported to have fewer days of suspension than those ethnic minorities not in AVID (M_1 = 1.06).

Science was found to have a statistically significant difference between the two groups F (1, 460) = 52.797, p = .000. Those ethnic minority students not in the AVID middle school program were reported to have lower scores in science than those White students not in the AVID middle school program (M_1 =386.77, M_2 = 414.05). However, compare those results to the mean results between ethnic minorities students in AVID compared to White students not in AVID in research question 2 (M_1 = 394.77, M_2 = 414.05), and the means reveal that ethnic minority students in

AVID (M_1 = 394.77) were reported to have higher science scores than those ethnic minorities not in AVID (M_1 = 386.77).

Thus, in every category of measurement, the ethnic minority students in the AVID middle school program outperformed those ethnic minority students not in the AVID program. As mentioned in research question 2, those ethnic minority students in the AVID program did not match or outperform non-AVID White students, however, in this comparison in research question 3 it is shown that the ethnic minority students in the AVID program have higher average scores in reading, math, and science as well as fewer days absent and fewer days suspended than their non-AVID ethnic minority counterparts.

Table 24

Research Question 3: Summary of Results

	Statistically Significant	AVID Ethnic Minority Students In research question 2 (Means)	Non-AVID Ethnic Minority Students (Means)	Non-AVID White Students in research question 2 (Means)
MSA Reading	Yes	M_1 =410.16	M_1 = 405.38	M_2 = 417.94
MSA Math	Yes	M_1 =413.14	M_1 = 407.11	M_2 = 418.59
MSA Science	Yes	M_1 =394.77	M_1 = 386.77	M_2 = 414.05
Days Absent	No	M_1 = 4.59	M_1 = 6.184	M_2 = 6.806
Days Suspended	Yes	M_1 = 0.38	M_1 = 1.06	M_2 = 0.41

As seen in the Table 24:

- AVID ethnic minority students scored higher in math, reading and science than the non-AVID ethnic minority students. *
- AVID ethnic minority students had fewer absences and suspensions than the non-AVID ethnic minority students.

- AVID ethnic minority students scored lower in math, reading, and science than non- AVID White students.*
- AVID ethnic minority students had fewer absences and suspensions than the non-AVID White students.

*Although the achievement gap between ethnic minorities and Whites was not completely closed the achievement gap was narrowed.

Null hypotheses 4. There is no statistically significant difference in academic outcomes or non-cognitive outcomes for eighth grade African American male students in the AVID middle school program when compared to those eighth grade African American male students not in the AVID middle school program.

As discussed in the Chapter II literature reviews, research shows that African American males are the lowest achieving subgroup in public schools, and therefore, warrant further research in order to find programs that can assist them. It was because of this fact this null hypothesis was developed in order to collect data and analyze the effectiveness of the AVID program in middle school to positively affect student performance measures for African American males.

African American males not in the AVID program were randomly selected to compare to those African American males in the AVID middle school program using SPSS software. The statistical results and analysis of the data are shown in the tables below each analysis.

Data Analysis of Null Hypothesis 4

When comparing African American males that were in the AVID middle school program to African American males that were not in the AVID middle school program, an Analysis of Variance (ANOVA) was used to determine if there were any differences between these two groups in terms of math, reading, science, days suspended, and days absent.

Maryland School Assessment (MSA): Reading

The ANOVA (see Table 24) showed no statistically significant difference between the two groups in reading scores $F(1, 84) = .887, p = .349$. Table 25 shows that those African American males in the AVID middle school program scored higher on the test than those African American males who were not in the AVID middle school program ($M_1 = 407.56$, $M_2 = 403.40$).

Maryland School Assessment (MSA): Math

Based on the inferential test, a statistically significant finding was discovered $F(1, 84) = 4.641, p = .034$ between the groups in which the African American males in the AVID middle school program ($M = 413.35$) scored higher than those African American males not in the AVID middle school program ($M = 403.16$).

Since this is the only area of a statistical significant interaction between school and AVID in this research question, a profile plot for MSA Math in included in Figure 2. Further, the calculations of effect size (.036 partial eta squared) reveal that the magnitude of the effect is considered weak because the differences between the scores is very small. (Refer to Appendix T.)

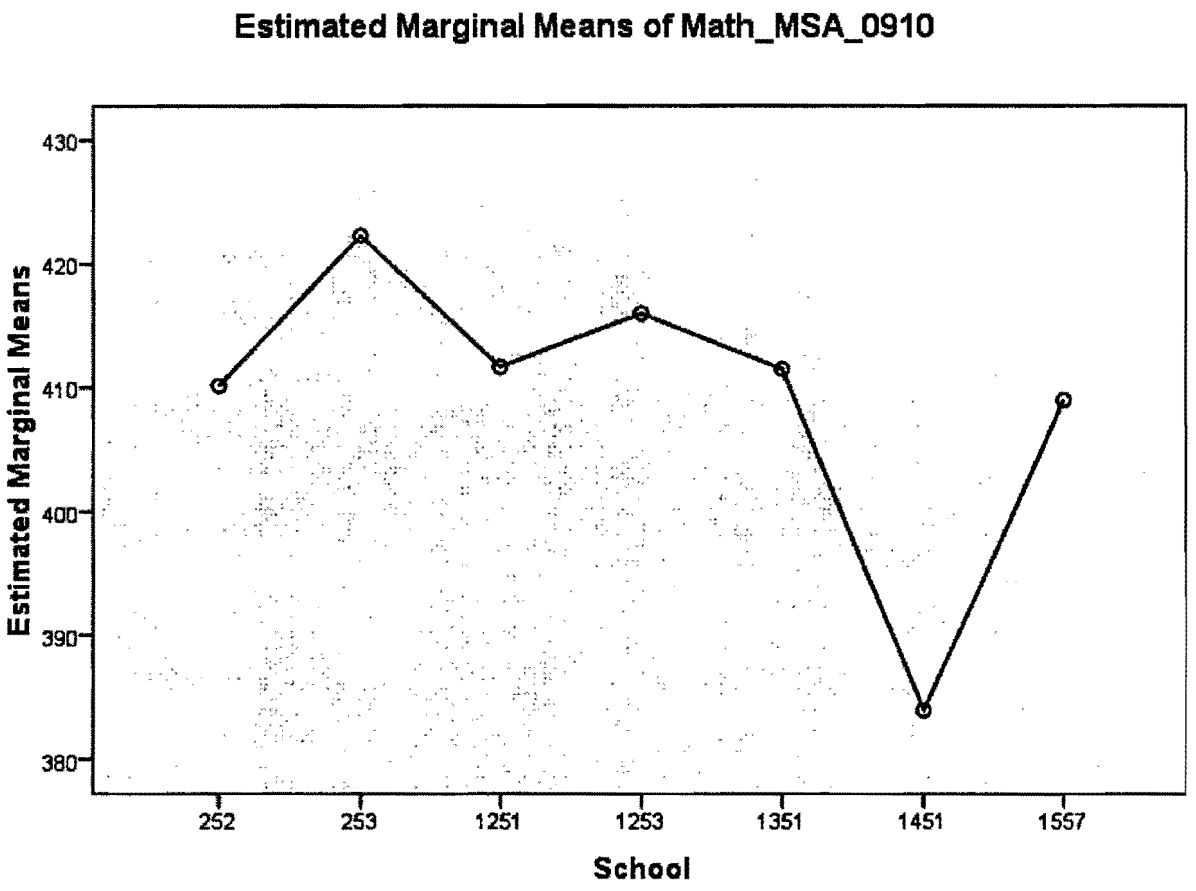


Figure 2. Profile plot of estimated marginal means of Math MSA 09-10

Days Suspended

No statistically significant finding was seen in Days Suspended $F(1, 84) = .388, p = .562$. Those African American males in the AVID middle school program were reported to have fewer days of suspension than those African American males not in the AVID program (M_1 =0.67, M_2 = 0.88*)*. However, it was deemed not a statistically significant difference.

Days Absent

No statistically significant difference between African American males in the AVID middle school program and African American males not in the AVID middle school program was seen in the days absent data. Although a difference was seen in the averages (M_1 =4.49, M_2 =

5.83) with African American males in the AVID middle school program having fewer days absent than those African American males not in the AVID middle school program, the difference was deemed not statistically significant $F(1, 84) = 1.435, p = .234$.

Maryland School Assessment (MSA): Science

Science was found to have no statistically significant difference between the two groups $F(1, 84) = 1.768, p = .187$. Although those African American males in the AVID program scored higher ($M = 399.21$) than those African American males who were not in the AVID program ($M = 390.05$), the difference was not statistically significant.

Thus, the null hypothesis was rejected at the .05 level for math, and accepted at the .05 level for, and reading, science, days absent, and days suspended as summarized in Table 2.

Limitation

Notice that the population of African American males in the AVID program spread across eight middle schools in this study is 43. This may be considered a low number to analyze; however, 43 African American males out of 165 students in the AVID program in eight, eighth grade middle schools is 26 % of the total AVID student population in this study. The total population of 86 students used for comparison in this research question includes the other 43 African American males randomly selected for comparison.

Table 25

African American Males in AVID / African American Males Not in AVID

Descriptives

						95% Confidence Interval for Mean			
		N	Mean	Std. Deviation	Std. Error	Lower Bound	Upper Bound	Minimum	Maximum
Read MSA 09-10	AVID	43	407.56	18.338	2.797	401.91	413.20	366	443
	Not in AVID	43	403.40	22.448	3.423	396.49	410.30	332	443
	Total	86	405.48	20.483	2.209	401.09	409.87	332	443
Math MSA 09-10	AVID	43	413.35	23.759	3.623	406.04	420.66	366	464
	Not in AVID	43	403.16	19.919	3.038	397.03	409.29	353	437
	Total	86	408.26	22.388	2.414	403.46	413.06	353	464
Science MSA 09-10	AVID	43	399.21	28.832	4.397	390.34	408.08	351	447
	Not in AVID	43	390.05	34.789	5.305	379.34	400.75	315	448
	Total	86	394.63	32.094	3.461	387.75	401.51	315	448
Days Suspended 09-10	AVID	43	.674	1.6579	.2528	.164	1.185	.0	7.0
	Not in AVID	43	.884	1.6791	.2561	.367	1.400	.0	5.0
	Total	86	.779	1.6620	.1792	.423	1.135	.0	7.0
Days Absent 09-10	AVID	43	4.488	4.7428	.7233	3.029	5.948	.0	22.0
	Not in AVID	43	5.826	5.5741	.8500	4.110	7.541	.0	22.0
	Total	86	5.157	5.1884	.5595	4.045	6.269	.0	22.0

Table 26

African American Males in AVID / African American Males Not in AVID

ANOVA

		Sum of Squares	*df*	Mean Square	*F*	Sig.
Read MSA 09-10	Between Groups	372.570	1	372.570	.887	.349
	Within Groups	35288.884	84	420.106		
	Total	35661.453	85			
Math MSA 09-10	Between Groups	2230.744	1	2230.744	4.641	.034
	Within Groups	40371.628	84	480.615		
	Total	42602.372	85			
Science MSA 09-10	Between Groups	1805.070	1	1805.070	1.768	.187
	Within Groups	85747.023	84	1020.798		
	Total	87552.093	85			
Days Suspended 09-10	Between Groups	.942	1	.942	.338	.562
	Within Groups	233.860	84	2.784		
	Total	234.802	85			
Days Absent 09-10	Between Groups	38.445	1	38.445	1.435	.234
	Within Groups	2249.686	84	26.782		
	Total	2288.131	85			

Data Analysis of Two-Way ANOVA for Null Hypothesis 4

A two-way ANOVA (see Table 27) was used to test for score differences among schools as well as participation in AVID. MSA Reading scores differed significantly across the schools, $F(6, 73) = 2.841, p = .015$, but did not differ among AVID group $F(1, 73) = .3.321, p = .072$. Furthermore, the interaction effect, School*AVID, was not deemed significant $F(5, 73) = 3.321, p = .953$. (Refer to Appendix Q for the mean differences between the schools used in this study and their significance.)

Table 27

Data Analysis of Two-Way ANOVA for Null Hypothesis 4: MSA Reading

Tests of Between-Subjects Effects

Dependent Variable: MSA Reading 2009-10

Source	Type III Sum of Squares	*df*	Mean Square	*F*	Sig.
Corrected Model	7287.385[a]	12	607.282	1.562	.122
Intercept	8252806.546	1	8252806.546	21232.587	.000
School	6625.617	6	1104.270	2.841	.015
AVID	1290.997	1	1290.997	3.321	.072
School * AVID	499.655	5	99.931	.257	.935
Error	28374.069	73	388.686		
Total	1.418E7	86			
Corrected Total	35661.453	85			

a. R Squared = .204 (Adjusted R Squared = .074)

A two-way ANOVA (see Table 28) was used to test for score differences among schools as well as participation in AVID. MSA Math scores differed significantly across the schools, F (6, 73) = 6.095, p = .000, and differed among AVID group F (1, 73) = .6.958, p = .010. Furthermore, the interaction effect, School*AVID, was not deemed significant F (5, 73) = .549, p = .739. (Refer to Appendix R for the mean differences between the schools used in this study and their significance.)

Table 28

Data Analysis of Two-Way ANOVA for Null Hypothesis 4: MSA Math

Tests of Between-Subjects Effects

Dependent Variable: MSA Math 2009-10

Source	Type III Sum of Squares	*df*	Mean Square	*F*	Sig.
Corrected Model	17067.849[a]	12	1422.321	4.066	.000
Intercept	8442848.771	1	8442848.771	24137.046	.000
School	12792.347	6	2132.058	6.095	.000
AVID	2433.673	1	2433.673	6.958	.010
School * AVID	959.603	5	191.921	.549	.739
Error	25534.523	73	349.788		
Total	1.438E7	86			
Corrected Total	42602.372	85			

a. R Squared = .401 (Adjusted R Squared = .302)

A two-way ANOVA (see Table 29) was used to test for score differences among schools as well as participation in AVID. MSA Science scores did not differ significantly across the schools, $F(6, 73) = 1.416, p = .220$, and did not differ among AVID group $F(1, 73) = 1.041, p = .311$. Furthermore, the interaction effect, School*AVID, was not deemed significant $F(5, 73) = .677, p = .642$. (Refer to Appendix S for the mean differences between the schools used in this study and their significance.)

Table 29

Data Analysis of Two-Way ANOVA for Null Hypothesis 4: MSA Science

Tests of Between-Subjects Effects

Dependent Variable: MSA Science 2009-10

Source	Type III Sum of Squares	*df*	Mean Square	*F*	Sig.
Corrected Model	13505.039[a]	12	1125.420	1.110	.366
Intercept	7992740.779	1	7992740.779	7879.720	.000
School	8616.904	6	1436.151	1.416	.220
AVID	1056.079	1	1056.079	1.041	.311
School * AVID	3431.862	5	686.372	.677	.642
Error	74047.054	73	1014.343		
Total	1.348E7	86			
Corrected Total	87552.093	85			

a. R Squared = .154 (Adjusted R Squared = .015)

A two-way ANOVA (see Table 30) was used to test for score differences among schools as well as participation in AVID. Days Suspended did not differ significantly across the schools, F (6, 73) = .337, p = .915, and did not differ among AVID group F (1, 73) = .090, p = .765. Furthermore, the interaction effect, School*AVID, was not deemed significant F (5, 73) = .611, p = .692. (Refer to Appendix T for the mean differences between the schools used in this study and their significance.)

Table 30

Data Analysis of Two-Way ANOVA for Null Hypothesis 4

Tests of Between-Subjects Effects

Dependent Variable: Days Suspended 2009-10

Source	Type III Sum of Squares	*df*	Mean Square	*F*	Sig.
Corrected Model	15.365[a]	12	1.280	.426	.948
Intercept	35.227	1	35.227	11.719	.001
School	6.074	6	1.012	.337	.915
AVID	.271	1	.271	.090	.765
School * AVID	9.178	5	1.836	.611	.692
Error	219.437	73	3.006		
Total	287.000	86			
Corrected Total	234.802	85			

a. R Squared = .065 (Adjusted R Squared = -.088)

A two-way ANOVA (see Table 31) was used to test for score differences among schools as well as participation in AVID. Days Absent did not differ significantly across the schools, F (6, 73) = 1.208, p = .312, and did not differ among AVID group F (1, 73) = 3.650, p = .060. Furthermore, the interaction effect, School*AVID, was not deemed significant F (5, 73) = .644, p = .667. (Refer to Appendix U for the mean differences between the schools used in this study and their significance.)

Table 31

Data Analysis of Two-Way ANOVA for Null Hypothesis 4: Days Absent

Tests of Between-Subjects Effects

Dependent Variable: Days Absent 2009-10

Source	Type III Sum of Squares	*df*	Mean Square	*F*	Sig.
Corrected Model	312.170[a]	12	26.014	.961	.493
Intercept	1253.636	1	1253.636	46.314	.000
School	196.120	6	32.687	1.208	.312
AVID	98.798	1	98.798	3.650	.060
School * AVID	87.178	5	17.436	.644	.667
Error	1975.961	73	27.068		
Total	4575.250	86			
Corrected Total	2288.131	85			

a. R Squared = .136 (Adjusted R Squared = -.006)

Research Question 4 Summary

To what degree, if any, does the AVID middle school program positively affect student performance measures for eighth grade African American males in the AVID middle school program as compared to those eighth grade African American males who are not in the AVID middle school program?

The first research question was designed to inquire if the AVID middle school program was effective in assisting African American male students in positively affecting student

performance measures as measured by the Maryland School Assessment (MSA) exams in math, reading, and science. Further, this question uses days absent and days suspended as student performance measures for comparison. The findings presented in the previous chapter, demonstrated that those African American male students in the AVID program outperformed those African American male students not in the AVID program on every variable measured in this research question. An Analysis of Variance (ANOVA) was used to determine if there were any differences between these two groups in terms of math, reading, science, days suspended, and days absent. The ANOVA (see Table 26) showed a statistically significant difference between the two groups only on math scores. Although there was no statistically significant difference between the two groups in reading scores, science scores, days absent, or days suspended, African American males in the AVID program did have fewer days absent and fewer days suspended, as well as higher mean scores in reading, math, and science, than those African American males not in the AVID program.

According to Table 32, there is only one dependent variable that the data analysis revealed to be statistically significant, and that was MSA Math. Although the other dependent variables were not considered statistically significant (see Table 32), those African American male students in the AVID Middle Program scored higher on average than those African American male students not in the AVID Middle School Program in all three measurements of academic outcome, namely, the Maryland School Assessment (MSA) in reading, math, and science. Further, Table 32 shows that those African American male students in the AVID Middle School Program had fewer absences and suspensions than those African American males not in the AVID Middle School Program.

Table 32

Research Question 4: Summary of Results

	Statistically Significant	AVID AA Males (Means)	Non-AVID AA Males (Means)
MSA Reading	No	$M_1 = 407.56$	$M_1 = 403.40$
MSA Math	Yes	$M_1 = 413.35$	$M_1 = 403.16$
MSA Science	No	$M_1 = 399.21$	$M_1 = 390.05$
Days Absent	No	$M_1 = 4.49$	$M_1 = 5.83$
Days Suspended	No	$M_1 = 0.67$	$M_1 = 0.88$

As seen in the Table 32:

- AVID African American males students scored higher in math, reading, and science than non-AVID African American male students.
- AVID African American males had fewer absences and suspensions than non-AVID African American male students.

Null hypotheses 5. There is no statistically significant difference in academic outcomes or non-cognitive outcomes for eighth grade students who had 1 year in the AVID middle school program when compared to those eighth grade students who had 2 years in the AVID middle school program.

Of the 165 students identified to be in the eighth grade AVID program in the eight middle schools used to conduct this study, 77 students were found to be in the AVID program for 2 years in a row, and 88 students were found to be in their first year in the AVID middle school program. This null hypothesis was created to see if there would be any significant difference in the previously stated student performance measure for those with 2 years in the AVID middle school program as compared to those with only 1 year in the AVID middle school program.

Data Analysis of Null Hypothesis 5

When comparing all students that were in the AVID middle school program for 1 year compared to those who were in the AVID middle school program for 2 years, an Analysis of Variance (ANOVA) was used to determine if there were any differences between these two groups in terms of math, reading, science, days suspended, and days absent.

Maryland School Assessment (MSA): Reading

The ANOVA (see Table 34) showed no statistically significant difference between the two groups in reading scores $F(1, 164) = 1.321, p < .252$. Based on the descriptive analysis provided in Table 33, it shows that those students in the AVID middle school program for 1 year scored lower on the test than those students who were part of the AVID middle school program for 2 years ($M_1 = 408.32$, $M_2 = 412.42$), however, it was deemed not significantly different.

Maryland School Assessment (MSA): Math

Based on the inferential test, no statistically significant finding was discovered $F(1, 164) = 0.394, p = .531$ between the groups in which the students in the 1 year AVID middle school program ($M = 414.03$) scored lower than those students in the AVID middle school program for 2 years ($M = 416.36$).

Days Suspended:

No statistically significant finding was seen in days suspended $F(1, 164) = 0.076, p = .783$. Those students in the AVID middle school program for 1 year were reported to have lower days of suspension than those students in the AVID middle school program for 2 years ($M_1 = 0.38$, $M_2 = 0.43$).

Days Absent:

There was no statistically significant difference between 1 year AVID and 2 year AVID students seen in days absent. A difference was seen in the averages ($M_1 = 5.49$, $M_2 = 4.88$), where

those students in the AVID middle school program for 2 years were reported to have fewer days absent than those students in the AVID middle school program for 1 year, however, the difference was deemed to not be statistically significant $F(1, 164) = 0.613, p = .435$.

Maryland School Assessment (MSA): Science

Science was found to have no statistically significant difference between the two groups $F(1, 164) = 0.373, p = .542$. Those students in the AVID middle school program for 1 year scored higher ($M = 401.56$) than those students who were ($M = 398.53$) in the AVID middle school program for 2 years.

Thus, the null hypothesis was accepted at the .05 level for math, reading, science, days absent, and days suspended as summarized in Table 2.

Table 33

Students in AVID for 1 Year / Student in AVID for 2 Years

Descriptives

						95% Confidence Interval for Mean			
		N	Mean	Std. Deviation	Std. Error	Lower Bound	Upper Bound	Minimum	Maximum
Reading (MSA)	1	88	408.32	25.477	2.716	402.92	413.72	354	471
2009-10	2	77	412.42	19.406	2.212	408.01	416.82	369	459
School Year	Total	165	410.23	22.870	1.780	406.71	413.75	354	471
Math (MSA)	1	88	414.03	24.644	2.627	408.81	419.26	366	486
2009-10	2	77	416.36	22.725	2.590	411.21	421.52	364	478
School Year	Total	165	415.12	23.725	1.847	411.47	418.77	364	486
Science (MSA)	1	88	401.56	32.683	3.484	394.63	408.48	341	500
2009-10	2	77	398.53	30.584	3.485	391.59	405.47	315	463
School Year	Total	165	400.15	31.661	2.465	395.28	405.01	315	500
Days Suspended	1	88	.375	1.2064	.1286	.119	.631	.0	7.0
2009-10	2	77	.429	1.2817	.1461	.138	.719	.0	7.0
School Year	Total	165	.400	1.2386	.0964	.210	.590	.0	7.0
Days Absent	1	88	5.489	4.9497	.5276	4.440	6.537	.0	22.0
2009-10	2	77	4.883	4.9656	.5659	3.756	6.010	.0	27.0
School Year	Total	165	5.206	4.9513	.3855	4.445	5.967	.0	27.0

1 = 1 year in AVID middle school program

2 = 2 years in AVID middle school program

Table 34

Students in AVID for 1 Year / Student in AVID for 2 Years

ANOVA

		Sum of Squares	*df*	Mean Square	*F*	Sig.
Reading (MSA) 2009-10 School Year	Between Groups	689.456	1	689.456	1.321	.252
	Within Groups	85089.792	163	522.023		
	Total	85779.248	164			
Math (MSA) 2009-10 School Year	Between Groups	222.860	1	222.860	.394	.531
	Within Groups	92086.716	163	564.949		
	Total	92309.576	164			
Science (MSA) 2009-10 School Year	Between Groups	375.624	1	375.624	.373	.542
	Within Groups	164016.885	163	1006.239		
	Total	164392.509	164			
Days Suspended 2009-10 School Year	Between Groups	.118	1	.118	.076	.783
	Within Groups	251.482	163	1.543		
	Total	251.600	164			
Days Absent 2009-10 School Year	Between Groups	15.057	1	15.057	.613	.435
	Within Groups	4005.437	163	24.573		
	Total	4020.494	164			

Research Question 5 Summary

To what degree, if any, is there a significant difference in the student performance measures of eighth grade students who had 1 year of the AVID middle school program as compared to those students who had 2 years of the AVID middle school program?

This final research question was designed to inquire if students in the AVID middle school program benefited more from having 2 years in the AVID program as compared to students that only had 1 year in the AVID program. The findings revealed no statistically significant difference between outcomes for any of the variables measured. An Analysis of Variance (ANOVA) was used to determine if there were any differences

between these two groups in terms of math, reading, science, days suspended, and days absent. The ANOVA (see Table 34) showed no statistical significant difference between the two groups in reading scores, math scores, science scores, days suspended, or in days absent. Students who were in the AVID middle school program for 2 years did have higher scores in both reading and math, but not in science when compared to those students in the AVID program for 1 year. However, the scores were close in science (M_1 = 401.56 / M_1 = 398.53). Further, students in the AVID middle school program for 2 years had fewer days absent than those in the program for 1 year. However, those students in the AVID middle school program for 1 year were reported to have lower days of suspension than those students in the AVID middle school program for 2 years. These outcomes do not show a statistically significant difference in the outcomes between 1 year and 2 year AVID students, however, the outcomes reveal that the majority of variables measured had shown that students with 2 years in AVID had outperformed those students with only 1 year in AVID in three of the five measured variables.

According to Table 35, there were no dependent variables that the data analysis revealed to be statistically significant. Although the other dependent variables were not considered statistically significant, Table 35, those students in the AVID Middle Program for 2 years scored higher on average than those students in the AVID Middle School Program for only 1 year in two measurements of academic outcome, namely, the State of Maryland Middle School Assessment (MSA) in reading and math. One year AVID students scored slightly higher on average on the MSA in science. Further, the chart shows that those students in the AVID Middle School Program for 1 year had fewer suspensions while those AVID students who had 2 years of AVID had fewer absences.

Table 35

Research Question 5: Summary of Results

	Statistically Significant	1 Year of AVID (Means)	2 Years of AVID (Means)
MSA Reading	No	$M_1 = 408.32$	$M_1 = 412.42$
MSA Math	No	$M_1 = 414.03$	$M_1 = 416.36$
MSA Science	No	$M_1 = 401.56$	$M_1 = 398.53$
Days Absent	No	$M_1 = 5.49$	$M_1 = 4.88$
Days Suspended	No	$M_1 = 0.38$	$M_1 = 0.43$

As seen in the Table 35:

- Two Year AVID students scored higher in math and reading than 1 year AVID students.
- One Year AVID students scored higher in science than 2 year AVID students.
- Two Year AVID students had fewer absences than 1 year AVID students.
- One Year AVID students had fewer suspensions than 2 year AVID students.

Summary

The quantitative analysis of the data trends positively in favor of the AVID middle school program being an overall effective middle school program since those students in AVID outperformed students not in the AVID program in every measured variable. It should be noted that math had a statistically significant outcome across the research questions in favor of those students in the AVID program. Further, the data rendered positive results of the AVID middle school program as an effective program for assisting African American males academically. African American male students in AVID outperformed those African American male students not in AVID in every

measured variable. The data in this study also revealed that the AVID middle school program was not effective in completely closing the achievement gap between the ethnic minority students in AVID when compared to White students not in AVID, but rather assisted in narrowing that achievement gap. It is important to note that although AVID did have higher averaged means than those students not in AVID, in most analysis, it was often not statistically significant.

In Chapter V, I will draw conclusions from the data analysis presented in Chapter IV and make recommendations for future research.

Chapter V

CONCLUSIONS AND RECOMMENDATIONS

This quantitative study analyzed the effectiveness of the Advancement Via Individual Determination (AVID) middle school program to measure its effects on student achievement. The research analyzed data from eighth grade students from eight middle schools that employ the AVID program in the Baltimore County Public School system. Specifically, the data analyzed were the scores from the 2009-10 Maryland School Assessment (MSA) in math, reading, and science, as well as other student performance measures collected from district data, namely, attendance and suspension data.

The significance of this study was to examine the effectiveness of a particular supplemental educational program, namely, the Advancement Via Individual Determination (AVID) middle school program, on its ability to positively affect student achievement of middle school students, close the achievement gap between ethnic minority and White students, and positively affect student achievement of African American males since they are currently the lowest achieving subgroup. Further, a student achievement comparison is made between students in the AVID middle school program for 1 year and those in the program for 2 years to see if more than one year in this program had a significant difference on the student's outcomes.

After examining the AVID program at the middle school level and analyzing the data, the findings are mixed; however, the findings trend in favor of the AVID middle school program being an effective program when you look at the mean average results that show AVID students when compared to non-AVID students, for positively affecting

student achievement in middle school students and in narrowing the achievement gap between ethnic minorities and Whites. Further, the data analysis on this program's ability to assist African American male achievement is promising. However, these findings show mixed results on the data regarding differences of statistical significance.

Harkening back to Chapter II of this dissertation, there is mention of a study involving ten high schools in which students in the AVID program outperformed their classmates on different standardized tests and their attendance rates were higher than that of their classmates (Watt, Powell, Mendiola, Cossio, 2004). In comparison, the findings of this study for research question 1 on the AVID middle school program found similar results between comparable groups of AVID and non-AVID students where AVID middle school students outperformed non-AVID students on different standardized tests in math, reading, and science as well as in attendance rates. However, it is important to note with regard to research question 1 of this study, only the math standardized test results were statistically significant and that significance was weak. This study also included suspension rates which found that the AVID students had fewer suspensions when compared to non-AVID students.

A key finding of Larry and Grace Guthrie's (2002) research was that middle school students who had two years of AVID had significantly higher high school GPA's than their peers with only one year of AVID. In comparison, the findings of this study for research question 5 reveal that AVID middle school students with 2 years in the AVID middle school program as compared to 1 year of AVID outperformed those with only 1 year of AVID in math and reading and also had fewer days absent. However, none of these finding were statistically significant. Further, AVID students in this study with 1

year of AVID outperformed students with 2 years of AVID in science and had fewer days suspended. Again, these results were not statistically significant. Refer to the mean results of research question 5 in Table 35 which reveals just how close these means are for 1 and 2 year AVID students in the comparison.

In relation to the issue of the achievement gap discussed in Chapter II, Mickelson and Green (2006) state that "... African American student achievement is, lower than that of Whites..." (p. 1) in reference to the achievement gap that exists between minority and White students. They go on to make reference to African American males and cite studies that show that "... persistent and lower performance is particularly evident among males (Boyd-Franklin & Franklin, 2000; Garibaldi, 1992; Majors & Billson, 1992; NCES, 2001; Polite & Davis, 1999)" (p. 1). In the results for research question 4, African American males in the AVID middle school program outperformed African American male non-AVID students in standardized tests in math, reading, and science as well as in having fewer days absent and fewer suspensions. However, math was the only outcome that African American males in AVID scored significantly higher than Non-AVID African American students, but again, the significance was weak. Further, in regard to research question 2, an overall comparison of ethnic minority students in AVID to non-AVID White students to further investigate AVID's effectiveness in closing the achievement gap. These results were not as encouraging as those discussed above for African American males. Ethnic minority students in AVID scored lower than White non-AVID students on the standardized tests in math, reading, and science. While White students scored significantly higher in reading and science, ethnic minorities in AVID did have fewer days absent and fewer suspensions than White students. However, in

comparing these results to those in research question 3, it reveals that ethnic minorities in AVID may not have closed the achievement gap but rather narrowed the achievement gap since results show that ethnic minorities in AVID did outperform ethnic minorities not in AVID in math, reading, and science as well as in having fewer days absent and fewer suspensions when compared to White students not in AVID.

Although the results are mixed throughout the comparisons in this study, the results of the mean averages often trend in a positive direction toward the AVID middle school program in student achievement overall, in assisting in closing the achievement for ethnic minorities and African American males. However, AVID does not appear to be effective in a statistically significant way overall except in math. It should be noted that class size was not controlled for and further, I can only speculate that perhaps the additional AVID tutoring in math was a reason for the statistical significance in this measurement.

Recommendations for Future Research

As shown in Chapter II in the literature review, there has been a plethora of research conducted and articles written about the AVID program; however, very little has been researched or written on the middle school program. This is understandable, since at its inception, AVID began as a high school initiative focused on high school achievement in order to assist students to become eligible for and attain college acceptance. I hope that this study will add to the knowledge base of research on the AVID program and its ability to positively affect student achievement at the middle school level and further add to the research on this program's ability to close the achievement gap that still exists between

ethnic minorities and White students. The recommendations that follow are based on the findings and conclusions of this dissertation.

I recommend additional studies be conducted on the AVID program at the middle school level to broaden the knowledge base on the AVID middle school program to be as extensive as that of the AVID high school program. A replication of the extensive research studies on the AVID high school program should be done on the middle school program to include a large sample of students and schools.

Future studies should include longitudinal studies to show the effects of the AVID program on middle school students as they progress both through the middle school years and into the high school years as compared to those students not in the AVID program. In order to use a large research population for these studies it would be ideal to access districts and states with large numbers of students in the AVID middle school program since the numbers of AVID classes in each grade level are normally small.

Studies on the AVID program in urban middle schools would allow for a larger population of ethnic minorities of middle school students to be examined for further research regarding the AVID program's ability to close the achievement gap. Future studies should be expanded to include further research on the specific subgroup of African American males at the middle school level in order to add to the research in this area and to the studies involved in the African American Male Initiative programs that are effective in increasing student achievement for these students.

A similar study to this dissertation should be replicated across a larger population of AVID middle school students using multiple measures of student performance and student achievement beyond even those employed within this study. The goal would be to

examine the AVID middle school program using very large comparison groups in every quantitative measure of student achievement available. A study of this size should also be conducted using a qualitative approach to interview AVID middle school students, AVID middle school parents, AVID middle school teachers, non-AVID middle school teachers, administrators, and other identified stakeholders to get a cross section of reaction to this program overall.

A study on the cost effectiveness of the AVID middle school program should be conducted to examine how both small and large school districts could afford to implement this supplementary program. A study on the cost effectiveness of AVID with competing supplemental educational programs might prove a worthy effort of a future study as well as a controlled randomized trial to gauge the short-term and long-term effects of AVID on student achievement.

Conclusion

The outcomes revealed in this study should encourage school systems to implement the AVID middle school program to assist in increasing student achievement and in narrowing the achievement gap. According to the results of this study, the AVID middle school program is one supplemental education program worth implementing at the secondary level to foster academic success for students and to reverse academic stagnation.

The results of the comparisons made between AVID and non-AVID middle school students, AVID ethnic minority and non-AVID White students, and African American males in AVID as compared to those African American males not in AVID, all revealed that those students in the middle school AVID program had fewer days absent

and fewer days suspended than those students not in AVID. Further, AVID students scored higher in math, reading, and science in the comparisons made between AVID and non-AVID students, as well as in comparisons made between African American males in AVID compared to those African American males not in AVID. In addition to that, students who had 2 years of AVID did better in math and reading, as well as having had fewer absences than those students in AVID for only 1 year.

The results of this study may be of particular importance to public school districts that may be looking for a program to implement to assist them in making Adequate Yearly Progress (AYP) in their state, since AYP is measured in part by results in math and reading scores, and often includes attendance rates as a measured variable as well.

The best practices of the AVID program that make it successful should be considered for incorporation into schools by all teachers. For example, the AVID programs use of tutoring, an elective class for study skills, teaching test taking strategies, specific professional development for teachers, and the use of small cohorts of students in its elective course are just a few components of the program to consider as an initiative in all schools to help increase student achievement. To review information on the AVID program, search online information, existing dissertations, research, and visit the AVID program's website at www.avidonline.org.

REFERENCES

Abramson, P. (2004, May). Problems with middle schools. *School Planning & Management*. Vol. 43. Iss. 5; pg. 63. Retrieved May, 2010, from Pro Quest Educational Journals. (Document ID: 650779451).

Adelman, C. (1999). *Answers in the tool box: Academic intensity, attendance patters and bachelor's degree attainment*. Washington, DC: US. Department of Education, Office of Educational Research and Improvement.

AVID Center online. (2009). Retrieved from: http://www.avidcenter.org/

AVID Center. (2006). *Ethnic breakdown of AVID student population*. Retrieved May 30, 2008, from http://www.avidonline.org/info/?ID=2095&tabiD=1

Black, A., Little, C., McCoach, D., Purcell, J., & Seigle, D.. (2008). Advancement via individual determination: Method selection in conclusions about program effectiveness. *The Journal of Educational Research*, 102(2), 111-123, 160. Retrieved December 16, 2010, from ABI/INFORM Global. (Document ID: 1592652611).

Brown v. Board of Education, Topeka, Kansas, 347 U.S. 483 (1954).

Diamond, J. (2006). Still separate and unequal: Examining race, opportunity, and school achievement in "integrated" suburbs. *The Journal of Negro Education, 75*(3), 495-505. Retrieved February 19, 2011, from Pro Quest Educational Journals. (Document ID: 1190707371).

Farkas, G. (2004). The Black-White test score gap. *Contexts, 3*, 12-19.

Ford, C. (2010). Impact of the Advancement Via Individual Determination (AVID) Program on Closing the Achievement Gap. (Doctoral dissertation), The University of Texas at Arlington, United States – Texas. Retrieved November 11, 2010, from Dissertation and Theses: Full Text. (Publication No. AAT 3408957).

Fowler, F. (2009). *Policy studies for educational learners: An introduction*. (3rd ed.). Boston, MA: Pearson Education, Inc.

Fullan, M. (1991). *The new meaning of educational change*. New York, NY: Teachers College Press.

Gagne, R. M. (1970). *Conditions of learning*. New York, NY: Holt, Rinehart & Winston Inc.

Gordon, D., Iwamoto, D., Ward, N., Potts, R., & Boyd, E. (2009, Summer). Mentoring urban Black middle school male students: Implications for academic achievement. *The Journal of Negro Education*. Vol. 78. Iss. 3: pg. 277. Retrieved May, 2010, from Pro Quest Educational Journals. (Document ID: 1901887131).

Gould, S. J. (1981). *The mismeasure of man*. New York, NY: Norton

Goza, F., & Ryabov, I. (2009). Adolescents' educational outcomes: Ethnic and racial variations in peer network importance. *Journal of Youth and Adolescents, 38*(9), 1264-1279. Retrieved February 19, 2011, from Pro Quest Educational Journals. (Document ID: 1846050611).

Gulino, J., & Valentine, J. (1999, September). Middle school programmatic practices and student satisfaction with school. *National Association of Secondary School Principals NASSP Bulletin. 83*(608), 90. Retrieved May, 2010, from Pro Quest Educational Journals. (Document ID: 49063068).

Guthrie, L., & Guthrie, G. (2002). *Longitudinal research of AVID 1999-2000: Final report*. Retrieved September 10, 2009, from http://www.ldonline.org/article/An_Introduction_to_College_Access_Programs

High, J., & Andrews, P. (2009). Turning Points 2000: Lessons learned. *Middle School Journal, 41*(2), 58-63. Retrieved November 14, 2010, from Research Library. (Document ID: 1908589721).

Hynds, S. (2008, December). No middle ground: Taking a stand at the crossroads. *Voices From the Middle*. Vol. 16. Iss. 2; pg. 9. Retrieved May, 2010, from Pro Quest Educational Journals. (Document ID: 1618382781).

Jackson, A. (2009). New middle schools for new futures. *Middle School Journal*, 40(5), 6-10. Retrieved November 16, 2010, from Research Library. (Document ID: 1711520641).

Jackson, C. (1986). The middle school curriculum: A general examination. Information Analyses.

Kafele, B. K., (2010, March). Teaching Black male students. *Principal Leadership. 10*(7), 76-78.

Kim, J., & Sunderman, G. (2005). Measuring academic proficiency under the No Child Left Behind Act: Implications for educational equity. *Educational Researcher, 34*(8), 3-13. Retrieved February 19, 2011, from Pro Quest Educational Journals. (Document ID: 1024889421).

Maryland State Department of Education. (n.-d.). *MSA Math and Reading technical reports*. Retrieved from: http://www.msde.maryland.gov/MSDE/divisions/planningresultstest/MSA+Technical+Reports.htm.

Martinez, M., & Klopott, S. (2005). The link between high school reform and college access for low-income and minority youth. Washington, DC: American Youth Policy Forum and Pathways to College Network. ISBN 1-887031-91-X

McDonald, D. (2010, February). What a difference a year makes. *Momentum, 41*(1), 48-49. Retrieved April, 2010, from Pro Quest Education Journals. (Document ID: 1994787001).

McEwin, C. (1983). Schools for early adolescents. *Theory Into Practice, 22*(2), 119-124.

Mehan, H., Villanueva, I., Hubbard, L., & Lintz, A. (1996) *Constructing school success: The consequences of untracking low-achieving students*. Cambridge, UK: Cambridge University Press.

Mendiola, I. D., Watt, K. M., Huerta, J. (2009). The impact of advancement via individual determination (AVID) on Mexican American students Enrolled in a four year university. Submitted to *Journal of Latinos in Higher Education*.

Mickelson, R., & Greene, A. (2006 Winter). Connecting pieces of the puzzle: Gender differences in Black middle school students' achievement. *The Journal of Negro Education, 75*(1),34. Retrieved May, 2010, from Pro Quest Educational Journals. (Document ID: 1034805921).

Murphy, J.. (2009) Closing achievement gaps: Lessons from the last 15 years. *Phi Delta Kappa, 91*(3), 8, 10-12. Retrieved April, 2010, from Pro Quest Educational Journals. (Document ID: 1916871741).

No Child Left Behind Act of 2001 (H.R.1), Title II. (2002). Available at http://www.ed.gov/policy/elsec/leg/esea02/index.html

Noguera, P.. (2008). The 2007 Charles H. Thompson Lecture-Colloquium Presentation: Creating schools where race does not predict achievement: The Role and significance of race in the racial achievement gap. *The Journal of Negro Education, 77*(2), 90-103. Retrieved February, 19, 2011 from Pro Quest Educational Journals. (Document ID: 5567073181).

Olsen, K. D. (2010). *What brain research can teach about cutting school budgets.* Thousand Oaks, CA: Corwin.

Pagano, P.. (2009)Perceptions of California middle school AVID and non-AVID teachers regarding their partnership and AVID program implementation. (Doctoral Dissertation). Retrieved November 11, 2010, from Dissertation and Theses: Full Text. (Publication No. AAT 3395306).

Peak, D.. A correlational study of the Advancement Via Individual Determination (AVID) program with middle school student achievement in mathematics. (Doctoral dissertation), University of Denver, United States-Colorado. Retrieved November 2, 2010, from Dissertations and These: Full Text. (Publication No. AAT 3426057).

Perna, L. (2000). Racial and ethnic group differences in college enrollment decisions. *New Directions for Institutional Research, 107*, 65-83.

Petzko, V. (2004 March). Findings and implications of the NASSP national study of the leadership in middle level schools, volumes I and II: Teachers in middle level schools. *National Association of Secondary School Principals NASSP Bulletin, 88*(638), 69. Retrieved May, 2010, from Pro Quest Educational Journals. (Document ID: 585480021).

Polinard, J., Wrinkle, R., Meier, K.. (1995). The influence of educational and political resources on minority students' success. *The Journal of Negro Education*, 64(4), 463-474. Retrieved February 19, 2011, from Pro Quest Educational Journals. (Document ID: 10428975).

Richardson, J. (2010). Equitable education. *Principal Leadership*, pp. 68-69.

Roach, R. (2001 May). The Black male research agenda. *Black Issues in Higher Education. 18*(6), 22. Retrieved May, 2010, from Pro Quest Educational Journals. (Document ID: 73220650).

Skerrtett, A., & Hargreaves, A.. (2008). Student diversity and secondary school change in the context of increasingly standardized reform. *American Educational Journal, 45*(4), 913-945. Retrieved February 19, 2011, from Pro Quest Educational Journals. (Document ID: 1607406731).

Slavin, R. E. (1998). *Show me the evidence!: Proven and promising programs for America's schools*. Thousand Oaks, CA: Corwin Press.

Swanson, M. C. (2005). AVID as the catalyst for school-wide change. *AVID summer institute 2006 participant materials*, p. 10-13. San Diego, CA: AVID Center

The Associated Press. (2011). Bush institute to target middle schools in new education initiative. *Education Week, 30*(1). Retrieved February 12, 2011 from http://www.huffingtonpost.com/2011/02/08/bush-institute-middle-school-matters_n_820463.html

Turner, S.. (2009). Ethical and appropriate high-stakes testing preparation in middle school: Five methods that matter. *Middle School Journal, 41*(1), 36-45. Retrieved November 16, 2010, from Research Library. (Document ID: 1862973151).

Watt, K. M., Huerta, J., & Alkan, E. (2009a). Identifying predictors of college success through an examination of AVID graduates' college preparatory achievements. Submitted to *Journal of Hispanics in Higher Education.*

Watt, K. M., Huerta, J., & Alkan, E. (2009b). The implementation of advancement via individual determination (AVID) in a community college setting: A case study. Submitted to *Community College Journal of Research and Practice.*

Watt, K. M., Huerta, J., & Cossio, G. (2004). Leadership and AVID implementation levels in four south Texas border schools. *Catalyst for Change, 33*(2), 10-14.

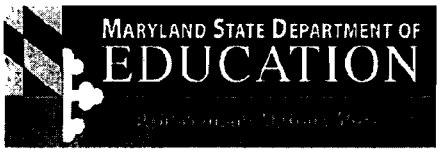
Watt, K. M., J. Huerta, & A. Lozano. (2007). A comparison study of AVID and GEAR UP 10th-grade students in two high schools in the Rio Grande Valley of Texas. *Journal of Education for Students Placed At Risk,* 12(2), 1-29.

Watt, K. M., Powell, C. A., Mendiola, I. D., & Cossio, G. (2004). Implications of one comprehensive school reform model for secondary school students underrepresented in higher education. *Journal of Education for Students At Risk, 9*(3), 241-259.

Watt, K. M., Yanez, D., & Cossio, G. (2002). AVID: A comprehensive school reform model for Texas. *National Forum of Educational Administration and Supervision Journal,* 19(3), 43-59.

APPENDIX A

Maryland State Department of Education (MSDE) Middle School Assessment (MSA) Exam Cut Scores and Proficiency Level Information



Nancy S. Grasmick
State Superintendent of Schools

200 West Baltimore Street, Baltimore, MD 21201 410-767-0100 410-333-6442 TTY/TDD

Division of Accountability and Assessment
HSA, Mod-HSA, MSA, Mod-MSA and ALT-MSA
Cut Scores and Proficiency Level Information

Maryland School Assessment READING		
Grade	Scale Score for Proficient	Scale Score for Advanced
3	388	456
4	371	437
5	384	425
6	381	421
7	385	425
8	391	425

Maryland School Assessment MATHEMATICS		
Grade	Scale Score for Proficient	Scale Score for Advanced
3	379	441
4	374	433
5	392	453
6	396	447
7	396	451
8	407	444

Maryland School Assessment SCIENCE		
Grade	Scale Score for Proficient	Scale Score for Advanced
5	391	467
8	387	478

High School Assessments and Modified High School Assessments			
Content	Passing Scale Score	Proficient Scale Score	Advanced Scale Score
Algebra	412	412	450
Biology	400	400	452
English	396	396	429
Government	394		
Total Combined Score Option	1602		

Note: For the MSA Reading, Mathematics and Science Assessments and the HSA and Mod-HSA Assessments, the Lowest Obtainable Scale Score (LOSS) is 240 and the Highest Obtainable Scale Score (HOSS) is 650.

****

Mod-MSA READING			Mod-MSA MATHEMATICS		
Grade	Scale Score Proficient	Scale Score Advanced	Grade	Scale Score Proficient	Scale Score Advanced
3	54	64	3	54	66
4	53	65	4	53	67
5	53	69	5	54	70
6	54	67	6	56	69
7	56	72	7	54	71
8	54	66	8	60	73

Note: For the Mod-MSA Reading and Mod-MSA Mathematics Assessments the Lowest Obtainable Scale Score (LOSS) is 2 and the Highest Obtainable Scale Score (HOSS) is 98.

Updated 06/11/2010

APPENDIX B

Fidelity of Implementation of the AVID Program in the Baltimore County Public School System

This form illustrates the percentage of sites at each level of implementation across each of the 11 Essentials. There are 24 Certified middle and high schools represented in the table below.

Certified Middle and High Schools

		Percentage of Sites			
Essential	Description	Not AVID	Meets Certification Standards	Routine Use	Institutionalization
1	Student Selection	0.0	0.0	37.5	62.5
2	Self-Select to Participate	0.0	33.3	45.8	20.8
3	Implementation Fidelity	0.0	0.0	12.5	87.5
4	Enrollment in Rigorous	0.0	41.7	50.0	8.3
5	Strong Reading and	0.0	8.3	83.3	8.3
6	Inquiry used in AVID	0.0	25.0	58.3	16.7
7	Collaboration in AVID	0.0	16.7	50.0	33.3
8	Use of College Tutors	0.0	41.7	45.8	12.5
9	Participate in Data	0.0	54.2	33.3	12.5
10	Sustainability and Growth	0.0	29.2	70.8	0.0
11	Establish Interdisciplinary	0.0	33.3	54.2	12.5

Essentials most challenging to implement as indicated by highest percentage rated as "Not AVID" and/or lowest percentage of sites at "Routine" or "Institutionalized" levels.

- Participate in Data Collection
- Enrollment in Rigorous Courses
- Use of College Tutors

Essentials most successfully implemented as indicated by lowest percentage of sites rated as "Not AVID" and/or highest percentage of sites rated as "Routine" or "Institutionalized" levels.

- Implementation Fidelity

- Student Selection
- Strong Reading and Writing Curriculum

This form illustrates the percentage of sites at each level of implementation across each of the 11 Essentials. There are 2 middle and high schools represented in the table below. Among these, 2 are Affiliate and 0 is Non-Certified

Affiliate and Non-Certified Middle and High Schools

		Percentage of Sites			
Essential	**Description**	**Not AVID**	**Meets Certification Standards**	**Routine Use**	**Institutionalization**
1	Student Selection	0.0	0.0	50.0	50.0
2	Self-Select to Participate	0.0	0.0	0.0	100.0
3	Implementation Fidelity	0.0	0.0	0.0	100.0
4	Enrollment in Rigorous Courses	0.0	0.0	100.0	0.0
5	Strong Reading and Writing Curriculum	0.0	0.0	100.0	0.0
6	Inquiry used in AVID Classroom	0.0	0.0	50.0	50.0
7	Collaboration in AVID Classroom	0.0	0.0	100.0	0.0
8	Use of College Tutors	0.0	100.0	0.0	0.0
9	Participate in Data Collection	50.0	0.0	50.0	0.0
10	Sustainability and Growth	0.0	50.0	50.0	0.0
11	Establish Interdisciplinary Site Team	0.0	0.0	50.0	50.0

Essentials most challenging to implement as indicated by highest percentage rated as "Not AVID" and/or lowest percentage of sites at "Routine" or "Institutionalized" levels.

- Use of College Tutors
- Sustainability and Growth
- Participate in Data Collection

Essentials most successfully implemented as indicated by lowest percentage of sites rated as "Not AVID" and/or highest percentage of sites rated as "Routine" or "Institutionalized" levels.

- Implementation Fidelity
- Self-Select to Participate
- Student Selection

APPENDIX C

www.avid.org 858.380.4800

THE CHALLENGE FOR EDUCATION

Closing the achievement gap and preparing students for success in a global society are significant educational reform challenges that must be met now, particularly for low-income and minority students.

Improving students' critical thinking, reading and writing abilities allows them to participate and succeed in courses of high rigor and better prepares them for postsecondary access and success.

Building cultures of college- and career-readiness and confidence in the ability of all students to achieve their dreams creates an exponentially positive momentum to transform schools and school districts.

THE SOLUTION: AVID

AVID, Advancement Via Individual Determination, is a systemic instructional and achievement program for students in grades 4 through 12 and postsecondary. The AVID college readiness system is designed to increase the number of students who enroll in four-year colleges and succeed in postsecondary education and training.

For 30 years, this simple formula has worked: *Raise expectations of students and, with the AVID support system in place, they will rise to the challenge.*

HOW IT WORKS

AVID began with one teacher in one high school classroom who developed the AVID elective class, which is still the core component of the middle and high school programs. AVID Elementary is implemented in all classes of grades 4-6 in a school. The AVID elective concept is also being implemented at colleges through our postsecondary program.

At the heart of the system are proven AVID methodologies based on **W**riting to Learn; Emphasis on **I**nquiry; **C**ollaborative Approach; and Critical **R**eading (**WICR**).

The AVID program is delivered by teachers trained by AVID staff developers and coached by AVID staff in effective strategies of instruction and best practices in building a college-going culture.

Teachers use AVID resource materials aligned with curriculum standards in core content areas.

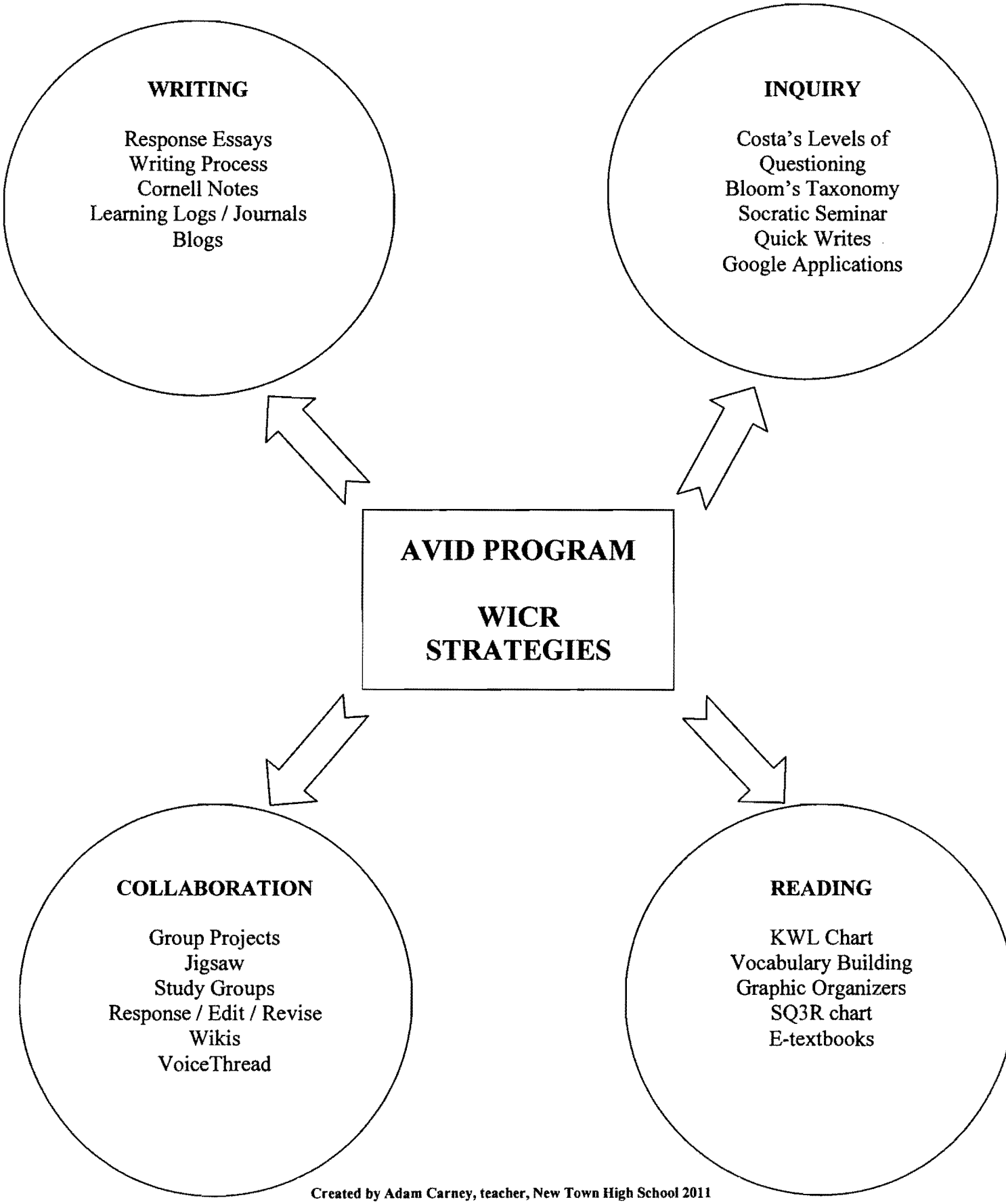
Administrators and teachers work together on school site teams to implement and expand AVID.

Schoolwide achievement results from the professional development received by content area teachers, counselors, administrators, and district administrators, and through the success of the AVID students. "Schoolwide" AVID reflects systemic changes in attitude; when a strong AVID program transforms the leadership, structure, instruction, and culture of a school, ensuring college readiness for all students.

FACT SHEET

APPENDIX D

WICR



Created by Adam Carney, teacher, New Town High School 2011

APPENDIX E

Cornell Notes

Source: http://lsc.sas.cornell.edu/Sidebars/Study_Skills_Resources/cornellsystem.pdf

The Cornell Note-taking System

2 1/2"	6"
Cue Column	**Notetaking Column** 1. **Record**: During the lecture, use the notetaking column to record the lecture using telegraphic sentences. 2. **Questions**: As soon after class as possible, formulate questions based on the notes in the right-hand column. Writing questions helps to clarify meanings, reveal relationships, establish continuity, and strengthen memory. Also, the writing of questions sets up a perfect stage for exam-studying later. 3. **Recite**: Cover the notetaking column with a sheet of paper. Then, looking at the questions or cue-words in the question and cue column only, say aloud, in your own words, the answers to the questions, facts, or ideas indicated by the cue-words. 4. **Reflect**: Reflect on the material by asking yourself questions, for example: "What's the significance of these facts? What principle are they based on? How can I apply them? How do they fit in with what I already know? What's beyond them? 5. **Review**: Spend at least ten minutes every week reviewing all your previous notes. If you do, you'll retain a great deal for current use, as well as, for the exam.
2"	Summary After class, use this space at the bottom of each page to summarize the notes on that page.

Adapted from How to Study in College 7/e by Walter Pauk, 2001 Houghton Mifflin Company

APPENDIX F

Table F1

Demographics of Middle Schools in this Study

	Middle School		Deep Creek	Dundalk	Golden Ring	Holabird	Lansdowne	Old Court	Southwest Academy	Woodlawn
Demographics Data 2009-10	Total # of Students Enrolled		767	447	637	643	675	581	748	642
	Attendance Rate		94.5%	94.4%	93.9%	94.4%	93.8%	94.4%	94.7%	94.4%
	FARMS		72.0%	73.0%	69.0%	67.0%	78.0%	67.0%	62.0%	73.0%
	SPED		16.0%	19.0%	18.0%	14.0%	15.0%	15.0%	14.0%	13.0%
	LEP		1.0%	0.0%	1.0%	7.0%	10.0%	0.0%	1.0%	1.0%
	African American		59.0%	42.0%	69.0%	16.0%	34.0%	92.0%	83.0%	93.0%
	American Indian		0.0%	2.0%	2.0%	2.0%	0.0%	0.0%	0.0%	1.0%
	Hispanic		6.0%	5.0%	5.0%	9.0%	12.0%	3.0%	6.0%	5.0%
	Asians		2.0%	1.0%	4.0%	4.0%	8.0%	2.0%	8.0%	0.0%
	White		33.0%	50.0%	20.0%	69.0%	46.0%	3.0%	3.0%	1.0%
	Mobility	Entry	15.0%	22.3%	15.4%	12.9%	12.4%	22.2%	19.4%	19.6%
		Withdrawn	18.0%	18.5%	11.4%	11.2%	16.2%	17.8%	14.3%	16.2%
Staff Instructional Experience	Under 2 Years		7	3.5	8	2	17	5	14.5	8.7
	2-5 Years		15.4	9	7	11	14	5	12	11
	6-10 Years		12	8.5	8	15	11	11.5	7	13
	11-20 Years		15	11	16	11	6	11	14	10
	21-29 Years		4	3	6	5.7	5	7	5	2
	30 or More Years		1	1	3	1	1	4	0	1
Staff Education Level	Bachelors		39.0%	35.0%	38.0%	28.0%	44.0%	22.0%	40.0%	50.0%
	Masters		49.0%	65.0%	62.0%	72.0%	54.0%	73.0%	60.0%	50.0%
	Doctorate		2.0%	0.0%	0.0%	0.0%	2.0%	5.0%	0.0%	0.0%

APPENDIX G

Null Hypothesis 1: MSA Reading Pairwise Comparisons

Table G1

Data Analysis of Two-Way ANOVA for Research Question 1

Pairwise Comparisons

Dependent Variable: MSA Reading 2009-10

(I) School	(J) School	Mean Difference (I-J)	Std. Error	Sig.[b]	95% Confidence Interval for Difference[b]	
					Lower Bound	Upper Bound
155	252	-35.568*,a	17.405	.042	-69.813	-1.324
	253	-38.279*,a	17.150	.026	-72.023	-4.536
	1251	-35.383*,a	17.276	.041	-69.374	-1.393
	1253	-31.736a	17.205	.066	-65.586	2.115
	1351	-32.703a	17.241	.059	-66.625	1.220
	1451	-20.125a	17.239	.244	-54.044	13.794
	1557	-35.724*,a	17.209	.039	-69.583	-1.865
252	155	35.568*,c	17.405	.042	1.324	69.813
	253	-2.711	5.278	.608	-13.095	7.673
	1251	.185	5.672	.974	-10.975	11.344
	1253	3.833	5.452	.483	-6.895	14.560
	1351	2.866	5.566	.607	-8.086	13.817
	1451	15.443*	5.560	.006	4.504	26.383
	1557	-.156	5.466	.977	-10.910	10.599
253	155	38.279*,c	17.150	.026	4.536	72.023
	252	2.711	5.278	.608	-7.673	13.095
	1251	2.896	4.835	.550	-6.617	12.408
	1253	6.543	4.575	.154	-2.458	15.545
	1351	5.576	4.710	.237	-3.691	14.844
	1451	18.154*	4.703	.000	8.901	27.407
	1557	2.555	4.591	.578	-6.478	11.588

(I) School	(J) School	Mean Difference (I-J)	Std. Error	Sig.[b]	95% Confidence Interval for Difference[b]	
					Lower Bound	Upper Bound
1251	155	35.383*,c	17.276	.041	1.393	69.374
	252	-.185	5.672	.974	-11.344	10.975
	253	-2.896	4.835	.550	-12.408	6.617
	1253	3.648	5.025	.468	-6.238	13.534
	1351	2.681	5.148	.603	-7.447	12.809
	1451	15.258*	5.141	.003	5.143	25.374
	1557	-.341	5.039	.946	-10.255	9.574
1253	155	31.736*,c	17.205	.066	-2.115	65.586
	252	-3.833	5.452	.483	-14.560	6.895
	253	-6.543	4.575	.154	-15.545	2.458
	1251	-3.648	5.025	.468	-13.534	6.238
	1351	-.967	4.905	.844	-10.617	8.683
	1451	11.611*	4.898	.018	1.974	21.248
	1557	-3.988	4.791	.406	-13.415	5.438
1351	155	32.703*,c	17.241	.059	-1.220	66.625
	252	-2.866	5.566	.607	-13.817	8.086
	253	-5.576	4.710	.237	-14.844	3.691
	1251	-2.681	5.148	.603	-12.809	7.447
	1253	.967	4.905	.844	-8.683	10.617
	1451	12.578*	5.024	.013	2.692	22.463
	1557	-3.021	4.920	.540	-12.702	6.659
1451	155	20.125*,c	17.239	.244	-13.794	54.044
	252	-15.443*	5.560	.006	-26.383	-4.504
	253	-18.154*	4.703	.000	-27.407	-8.901
	1251	-15.258*	5.141	.003	-25.374	-5.143
	1253	-11.611*	4.898	.018	-21.248	-1.974
	1351	-12.578*	5.024	.013	-22.463	-2.692
	1557	-15.599*	4.913	.002	-25.266	-5.932

(I) School	(J) School	Mean Difference (I-J)	Std. Error	Sig.[b]	95% Confidence Interval for Difference[b] Lower Bound	Upper Bound
1557	155	35.724*,[c]	17.209	.039	1.865	69.583
	252	.156	5.466	.977	-10.599	10.910
	253	-2.555	4.591	.578	-11.588	6.478
	1251	.341	5.039	.946	-9.574	10.255
	1253	3.988	4.791	.406	-5.438	13.415
	1351	3.021	4.920	.540	-6.659	12.702
	1451	15.599*	4.913	.002	5.932	25.266

Based on estimated marginal means

*. The mean difference is significant at the .05 level.

a. An estimate of the modified population marginal mean (I).

b. Adjustment for multiple comparisons: Least Significant Difference (equivalent to no adjustments).

c. An estimate of the modified population marginal mean (J).

APPENDIX H

Table H1

Null Hypothesis 1: MSA Math Pairwise Comparisons

Pairwise Comparisons

Dependent Variable: MSA Math 2009-10

(I) School	(J) School	Mean Difference (I-J)	Std. Error	Sig.[b]	95% Confidence Interval for Difference[b] Lower Bound	Upper Bound
155	252	-46.314*,[a]	16.653	.006	-79.080	-13.548
	253	-57.708*,[a]	16.410	.001	-89.994	-25.421
	1251	-50.346*,[a]	16.530	.003	-82.869	-17.823
	1253	-54.659*,[a]	16.462	.001	-87.048	-22.269
	1351	-40.028*,[a]	16.497	.016	-72.485	-7.570
	1451	-26.565,[a]	16.495	.108	-59.020	5.889
	1557	-52.938*,[a]	16.466	.001	-85.336	-20.541
252	155	46.314*,[c]	16.653	.006	13.548	79.080
	253	-11.393*	5.050	.025	-21.329	-1.457
	1251	-4.032	5.427	.458	-14.710	6.646
	1253	-8.344	5.217	.111	-18.609	1.920
	1351	6.287	5.326	.239	-4.192	16.765
	1451	19.749*	5.320	.000	9.282	30.216
	1557	-6.624	5.230	.206	-16.914	3.666
253	155	57.708*,[c]	16.410	.001	25.421	89.994
	252	11.393*	5.050	.025	1.457	21.329
	1251	7.361	4.626	.113	-1.740	16.463
	1253	3.049	4.378	.487	-5.564	11.662
	1351	17.680*	4.507	.000	8.813	26.547
	1451	31.142*	4.500	.000	22.289	39.996
	1557	4.769	4.393	.278	-3.874	13.413

(I) School	(J) School	Mean Difference (I-J)	Std. Error	Sig.[b]	95% Confidence Interval for Difference[b] Lower Bound	Upper Bound
1251	155	50.346*,c	16.530	.003	17.823	82.869
	252	4.032	5.427	.458	-6.646	14.710
	253	-7.361	4.626	.113	-16.463	1.740
	1253	-4.312	4.808	.370	-13.772	5.147
	1351	10.318*	4.925	.037	.628	20.009
	1451	23.781*	4.919	.000	14.102	33.459
	1557	-2.592	4.822	.591	-12.079	6.895
1253	155	54.659*,c	16.462	.001	22.269	87.048
	252	8.344	5.217	.111	-1.920	18.609
	253	-3.049	4.378	.487	-11.662	5.564
	1251	4.312	4.808	.370	-5.147	13.772
	1351	14.631*	4.693	.002	5.397	23.865
	1451	28.093*	4.687	.000	18.872	37.314
	1557	1.720	4.584	.708	-7.299	10.740
1351	155	40.028*,c	16.497	.016	7.570	72.485
	252	-6.287	5.326	.239	-16.765	4.192
	253	-17.680*	4.507	.000	-26.547	-8.813
	1251	-10.318*	4.925	.037	-20.009	-.628
	1253	-14.631*	4.693	.002	-23.865	-5.397
	1451	13.462*	4.807	.005	4.004	22.921
	1557	-12.911*	4.708	.006	-22.173	-3.649
1451	155	26.565*,c	16.495	.108	-5.889	59.020
	252	-19.749*	5.320	.000	-30.216	-9.282
	253	-31.142*	4.500	.000	-39.996	-22.289
	1251	-23.781*	4.919	.000	-33.459	-14.102
	1253	-28.093*	4.687	.000	-37.314	-18.872
	1351	-13.462*	4.807	.005	-22.921	-4.004
	1557	-26.373*	4.701	.000	-35.622	-17.124

(I) School	(J) School	Mean Difference (I-J)	Std. Error	Sig.[b]	95% Confidence Interval for Difference[b] Lower Bound	Upper Bound
1557	155	52.938*,[c]	16.466	.001	20.541	85.336
	252	6.624	5.230	.206	-3.666	16.914
	253	-4.769	4.393	.278	-13.413	3.874
	1251	2.592	4.822	.591	-6.895	12.079
	1253	-1.720	4.584	.708	-10.740	7.299
	1351	12.911*	4.708	.006	3.649	22.173
	1451	26.373*	4.701	.000	17.124	35.622

Based on estimated marginal means

*. The mean difference is significant at the .05 level.

a. An estimate of the modified population marginal mean (I).

b. Adjustment for multiple comparisons: Least Significant Difference (equivalent to no adjustments).

c. An estimate of the modified population marginal mean (J).

Table H2 shows that there is a statistically significant difference at the .05 level between AVID and Non-AVID students on the Math MSA Exam where p = .000.

Table H2

AVID/Non-AVID Students Statistical Significance Results for MSA Math Exam

Pairwise Comparisons

Dependent Variable: MSA Math 2009-10

(I) Avid	(J) Avid	Mean Difference (I-J)	Std. Error	Sig.[b]	95% Confidence Interval for Difference[b] Lower Bound	Upper Bound
No	Yes	-12.135*,[a]	3.156	.000	-18.345	-5.924
Yes	No	12.135*,[c]	3.156	.000	5.924	18.345

Based on estimated marginal means

*. The mean difference is significant at the .05 level.

a. An estimate of the modified population marginal mean (J).

b. Adjustment for multiple comparisons: Least Significant Difference (equivalent to no adjustments).

c. An estimate of the modified population marginal mean (I).

APPENDIX I

Table I1

Null Hypothesis 1: Math Effect Size

Tests of Between-Subjects Effects

Dependent Variable:Math_MSA_0910

Source	Type III Sum of Squares	*df*	Mean Square	*F*	Sig.	Partial Eta Squared
Corrected Model	46095.783[a]	14	3292.556	6.318	.000	.219
Intercept	2.340E7	1	2.340E7	44902.323	.000	.993
School	36780.182	7	5254.312	10.083	.000	.183
Avid	3466.926	1	3466.926	6.653	.010	.021
School * Avid	4688.288	6	781.381	1.499	.178	.028
Error	164151.624	315	521.116			
Total	5.597E7	330				
Corrected Total	210247.406	329				

a. R Squared = .219 (Adjusted R Squared = .185)

APPENDIX J

Table J1

Null Hypothesis 1: MSA Science Pairwise Comparisons

Pairwise Comparisons

Dependent Variable: MSA Science 2009-10

(I) School	(J) School	Mean Difference (I-J)	Std. Error	Sig.[b]	95% Confidence Interval for Difference[b] Lower Bound	Upper Bound
155	252	-58.879*,[a]	23.994	.015	-106.088	-11.669
	253	-54.540*,[a]	23.643	.022	-101.059	-8.021
	1251	-72.273*,[a]	23.816	.003	-119.132	-25.414
	1253	-69.247*,[a]	23.719	.004	-115.914	-22.580
	1351	-51.370*,[a]	23.769	.031	-98.135	-4.604
	1451	-45.792[a]	23.766	.055	-92.553	.968
	1557	-63.295*,[a]	23.725	.008	-109.974	-16.617
252	155	58.879*,[c]	23.994	.015	11.669	106.088
	253	4.339	7.276	.551	-9.977	18.654
	1251	-13.394	7.819	.088	-28.778	1.991
	1253	-10.368	7.517	.169	-25.157	4.421
	1351	7.509	7.673	.329	-7.589	22.607
	1451	13.086	7.665	.089	-1.995	28.168
	1557	-4.417	7.535	.558	-19.243	10.409
253	155	54.540*,[c]	23.643	.022	8.021	101.059
	252	-4.339	7.276	.551	-18.654	9.977
	1251	-17.732*	6.665	.008	-30.846	-4.619
	1253	-14.707*	6.307	.020	-27.116	-2.297
	1351	3.171	6.493	.626	-9.605	15.946
	1451	8.748	6.483	.178	-4.008	21.504
	1557	-8.755	6.330	.168	-21.209	3.698

(I) School	(J) School	Mean Difference (I-J)	Std. Error	Sig.[b]	95% Confidence Interval for Difference[b] Lower Bound	Upper Bound
1251	155	72.273*,c	23.816	.003	25.414	119.132
	252	13.394	7.819	.088	-1.991	28.778
	253	17.732*	6.665	.008	4.619	30.846
	1253	3.026	6.927	.663	-10.603	16.655
	1351	20.903*	7.097	.003	6.940	34.866
	1451	26.480*	7.088	.000	12.535	40.425
	1557	8.977	6.947	.197	-4.692	22.646
1253	155	69.247*,c	23.719	.004	22.580	115.914
	252	10.368	7.517	.169	-4.421	25.157
	253	14.707*	6.307	.020	2.297	27.116
	1251	-3.026	6.927	.663	-16.655	10.603
	1351	17.877*	6.762	.009	4.573	31.181
	1451	23.454*	6.752	.001	10.169	36.740
	1557	5.951	6.605	.368	-7.044	18.946
1351	155	51.370*,c	23.769	.031	4.604	98.135
	252	-7.509	7.673	.329	-22.607	7.589
	253	-3.171	6.493	.626	-15.946	9.605
	1251	-20.903*	7.097	.003	-34.866	-6.940
	1253	-17.877*	6.762	.009	-31.181	-4.573
	1451	5.577	6.926	.421	-8.051	19.205
	1557	-11.926	6.783	.080	-25.271	1.419
1451	155	45.792c	23.766	.055	-.968	92.553
	252	-13.086	7.665	.089	-28.168	1.995
	253	-8.748	6.483	.178	-21.504	4.008
	1251	-26.480*	7.088	.000	-40.425	-12.535
	1253	-23.454*	6.752	.001	-36.740	-10.169
	1351	-5.577	6.926	.421	-19.205	8.051
	1557	-17.503*	6.773	.010	-30.830	-4.177

(I) School	(J) School	Mean Difference (I-J)	Std. Error	Sig.[b]	95% Confidence Interval for Difference[b] Lower Bound	Upper Bound
1557	155	63.295*,c	23.725	.008	16.617	109.974
	252	4.417	7.535	.558	-10.409	19.243
	253	8.755	6.330	.168	-3.698	21.209
	1251	-8.977	6.947	.197	-22.646	4.692
	1253	-5.951	6.605	.368	-18.946	7.044
	1351	11.926	6.783	.080	-1.419	25.271
	1451	17.503*	6.773	.010	4.177	30.830

Based on estimated marginal means

*. The mean difference is significant at the .05 level.

a. An estimate of the modified population marginal mean (I).

b. Adjustment for multiple comparisons: Least Significant Difference (equivalent to no adjustments).

c. An estimate of the modified population marginal mean (J).

Table J2 shows there is no statistically significant difference at the .05 level between AVID and Non-AVID students on the MSA Science Exams where p = .113

Table J2

AVID/Non-AVID Students Statistical Significance Results for MSA Science Exam

Pairwise Comparisons

Dependent Variable: MSA Science 2009-10

(I) Avid	(J) Avid	Mean Difference (I-J)	Std. Error	Sig.[b]	95% Confidence Interval for Difference[b] Lower Bound	Upper Bound
No	Yes	-10.961*,a	4.548	.017	-19.909	-2.013
Yes	No	10.961*,c	4.548	.017	2.013	19.909

Based on estimated marginal means

*. The mean difference is significant at the .05 level.

a. An estimate of the modified population marginal mean (J).

b. Adjustment for multiple comparisons: Least Significant Difference (equivalent to no adjustments).

c. An estimate of the modified population marginal mean (I).

APPENDIX K

Table K1

Null Hypothesis 1: Days Suspended Pairwise Comparisons

Pairwise Comparisons

Dependent Variable: Days Suspended 2009-10

(I) School	(J) School	Mean Difference (I-J)	Std. Error	Sig.[b]	95% Confidence Interval for Difference[b]	
					Lower Bound	Upper Bound
155	252	1.023[a]	1.113	.359	-1.167	3.212
	253	1.688[a]	1.097	.125	-.470	3.845
	1251	1.292[a]	1.105	.243	-.881	3.465
	1253	1.845[a]	1.100	.095	-.320	4.009
	1351	1.308[a]	1.102	.236	-.861	3.477
	1451	1.304[a]	1.102	.238	-.865	3.472
	1557	1.622[a]	1.100	.141	-.543	3.787
252	155	-1.023[c]	1.113	.359	-3.212	1.167
	253	.665*	.337	.050	.001	1.329
	1251	.269	.363	.459	-.444	.983
	1253	.822*	.349	.019	.136	1.508
	1351	.286	.356	.423	-.415	.986
	1451	.281	.355	.430	-.418	.981
	1557	.599	.349	.088	-.089	1.287
253	155	-1.688[c]	1.097	.125	-3.845	.470
	252	-.665*	.337	.050	-1.329	-.001
	1251	-.396	.309	.201	-1.004	.213
	1253	.157	.293	.592	-.418	.733
	1351	-.379	.301	.209	-.972	.213
	1451	-.384	.301	.203	-.975	.208
	1557	-.066	.294	.823	-.643	.512

(I) School	(J) School	Mean Difference (I-J)	Std. Error	Sig.[b]	95% Confidence Interval for Difference[b] Lower Bound	Upper Bound
1251	155	-1.292[c]	1.105	.243	-3.465	.881
	252	-.269	.363	.459	-.983	.444
	253	.396	.309	.201	-.213	1.004
	1253	.553	.321	.086	-.079	1.185
	1351	.016	.329	.960	-.631	.664
	1451	.012	.329	.971	-.635	.659
	1557	.330	.322	.307	-.304	.964
1253	155	-1.845[c]	1.100	.095	-4.009	.320
	252	-.822*	.349	.019	-1.508	-.136
	253	-.157	.293	.592	-.733	.418
	1251	-.553	.321	.086	-1.185	.079
	1351	-.536	.314	.088	-1.153	.081
	1451	-.541	.313	.085	-1.157	.075
	1557	-.223	.306	.468	-.825	.380
1351	155	-1.308[c]	1.102	.236	-3.477	.861
	252	-.286	.356	.423	-.986	.415
	253	.379	.301	.209	-.213	.972
	1251	-.016	.329	.960	-.664	.631
	1253	.536	.314	.088	-.081	1.153
	1451	-.004	.321	.989	-.636	.628
	1557	.313	.315	.320	-.305	.932
1451	155	-1.304[c]	1.102	.238	-3.472	.865
	252	-.281	.355	.430	-.981	.418
	253	.384	.301	.203	-.208	.975
	1251	-.012	.329	.971	-.659	.635
	1253	.541	.313	.085	-.075	1.157
	1351	.004	.321	.989	-.628	.636
	1557	.318	.314	.312	-.300	.936

(I) School	(J) School	Mean Difference (I-J)	Std. Error	Sig.[b]	95% Confidence Interval for Difference[b] Lower Bound	Upper Bound
1557	155	-1.622[c]	1.100	.141	-3.787	.543
	252	-.599	.349	.088	-1.287	.089
	253	.066	.294	.823	-.512	.643
	1251	-.330	.322	.307	-.964	.304
	1253	.223	.306	.468	-.380	.825
	1351	-.313	.315	.320	-.932	.305
	1451	-.318	.314	.312	-.936	.300

Based on estimated marginal means

a. An estimate of the modified population marginal mean (I).

b. Adjustment for multiple comparisons: Least Significant Difference (equivalent to no adjustments).

c. An estimate of the modified population marginal mean (J).

*. The mean difference is significant at the .05 level.

Table K2 shows that there is a statistically significant difference at the .05 level between AVID and Non-AVID students on the Days Suspended where p = .032.

Table K2

AVID/Non-AVID Students Statistical Significance Results for Days Suspended

Pairwise Comparisons

Dependent Variable: Days Suspended 2009-10

(I) Avid	(J) Avid	Mean Difference (I-J)	Std. Error	Sig.[b]	95% Confidence Interval for Difference[b] Lower Bound	Upper Bound
No	Yes	.455*,a	.211	.032	.040	.870
Yes	No	-.455*,c	.211	.032	-.870	-.040

Based on estimated marginal means

*. The mean difference is significant at the .05 level.

a. An estimate of the modified population marginal mean (J).

b. Adjustment for multiple comparisons: Least Significant Difference (equivalent to no adjustments).

c. An estimate of the modified population marginal mean (I).

APPENDIX L

Table L1

Null Hypothesis 1: Days Absent Pairwise Comparisons

Pairwise Comparisons

Dependent Variable: Days Absent 2009-10

(I) School	(J) School	Mean Difference (I-J)	Std. Error	Sig.[b]	95% Confidence Interval for Difference[b]	
					Lower Bound	Upper Bound
155	252	-.811[a]	3.837	.833	-8.361	6.740
	253	-.124[a]	3.781	.974	-7.564	7.316
	1251	-.211[a]	3.809	.956	-7.705	7.283
	1253	-2.394[a]	3.793	.528	-9.858	5.069
	1351	-3.215[a]	3.801	.398	-10.695	4.264
	1451	-1.938[a]	3.801	.610	-9.417	5.540
	1557	-1.780[a]	3.794	.639	-9.245	5.685
252	155	.811[c]	3.837	.833	-6.740	8.361
	253	.687	1.164	.556	-1.603	2.976
	1251	.600	1.251	.632	-1.861	3.060
	1253	-1.584	1.202	.189	-3.949	.782
	1351	-2.405	1.227	.051	-4.819	.010
	1451	-1.128	1.226	.358	-3.540	1.284
	1557	-.969	1.205	.422	-3.341	1.402
253	155	.124[c]	3.781	.974	-7.316	7.564
	252	-.687	1.164	.556	-2.976	1.603
	1251	-.087	1.066	.935	-2.184	2.010
	1253	-2.270*	1.009	.025	-4.255	-.286
	1351	-3.092*	1.038	.003	-5.135	-1.048
	1451	-1.815	1.037	.081	-3.855	.226
	1557	-1.656	1.012	.103	-3.648	.336

(I) School	(J) School	Mean Difference (I-J)	Std. Error	Sig.[b]	95% Confidence Interval for Difference[b] Lower Bound	Upper Bound
1251	155	.211[c]	3.809	.956	-7.283	7.705
	252	-.600	1.251	.632	-3.060	1.861
	253	.087	1.066	.935	-2.010	2.184
	1253	-2.183*	1.108	.050	-4.363	-.004
	1351	-3.004*	1.135	.009	-5.238	-.771
	1451	-1.727	1.134	.129	-3.958	.503
	1557	-1.569	1.111	.159	-3.755	.617
1253	155	2.394[c]	3.793	.528	-5.069	9.858
	252	1.584	1.202	.189	-.782	3.949
	253	2.270*	1.009	.025	.286	4.255
	1251	2.183*	1.108	.050	.004	4.363
	1351	-.821	1.081	.448	-2.949	1.307
	1451	.456	1.080	.673	-1.669	2.581
	1557	.614	1.056	.561	-1.464	2.693
1351	155	3.215[c]	3.801	.398	-4.264	10.695
	252	2.405	1.227	.051	-.010	4.819
	253	3.092*	1.038	.003	1.048	5.135
	1251	3.004*	1.135	.009	.771	5.238
	1253	.821	1.081	.448	-1.307	2.949
	1451	1.277	1.108	.250	-.903	3.457
	1557	1.435	1.085	.187	-.699	3.570
1451	155	1.938[c]	3.801	.610	-5.540	9.417
	252	1.128	1.226	.358	-1.284	3.540
	253	1.815	1.037	.081	-.226	3.855
	1251	1.727	1.134	.129	-.503	3.958
	1253	-.456	1.080	.673	-2.581	1.669
	1351	-1.277	1.108	.250	-3.457	.903
	1557	.158	1.083	.884	-1.973	2.290

(I) School	(J) School	Mean Difference (I-J)	Std. Error	Sig.[b]	95% Confidence Interval for Difference[b] Lower Bound	Upper Bound
1557	155	1.780[c]	3.794	.639	-5.685	9.245
	252	.969	1.205	.422	-1.402	3.341
	253	1.656	1.012	.103	-.336	3.648
	1251	1.569	1.111	.159	-.617	3.755
	1253	-.614	1.056	.561	-2.693	1.464
	1351	-1.435	1.085	.187	-3.570	.699
	1451	-.158	1.083	.884	-2.290	1.973

Based on estimated marginal means

a. An estimate of the modified population marginal mean (I).

b. Adjustment for multiple comparisons: Least Significant Difference (equivalent to no adjustments).

c. An estimate of the modified population marginal mean (J).

*. The mean difference is significant at the .05 level.

Table L2 shows that there is not a statistically significant difference at the .05 level between AVID and Non-AVID students for Days Absent where p = .769.

Table L2

AVID/Non-AVID Students Statistical Significance Results for Days Absent

Pairwise Comparisons

Dependent Variable: Days Absent 2009-10

(I) Avid	(J) Avid	Mean Difference (I-J)	Std. Error	Sig.[b]	95% Confidence Interval for Difference[b] Lower Bound	Upper Bound
No	Yes	.214[a]	.727	.769	-1.217	1.645
Yes	No	-.214[c]	.727	.769	-1.645	1.217

Based on estimated marginal means

a. An estimate of the modified population marginal mean (J).

b. Adjustment for multiple comparisons: Least Significant Difference (equivalent to no adjustments).

c. An estimate of the modified population marginal mean (I).

APPENDIX M

Null Hypothesis 2: MSA Reading Pairwise Comparisons

Table M1

Data Analysis of Two-Way ANOVA for Research Question 2

Pairwise Comparisons

Dependent Variable: MSA Reading 2009-10

(I) School	(J) School	Mean Difference (I-J)	Std. Error	Sig.[c]	95% Confidence Interval for Difference[c]	
					Lower Bound	Upper Bound
252	253	1.922[a,b]	6.801	.778	-11.485	15.329
	1251	-.803[a]	6.953	.908	-14.510	12.904
	1253	3.160[a]	8.758	.719	-14.105	20.424
	1351	5.657[a]	6.542	.388	-7.239	18.553
	1451	2.589[a]	7.923	.744	-13.029	18.208
	1557	-2.692[a]	6.342	.672	-15.193	9.809
253	252	-1.922[a,b]	6.801	.778	-15.329	11.485
	1251	-2.725[a]	6.542	.677	-15.622	10.171
	1253	1.238[a]	8.435	.883	-15.391	17.866
	1351	3.735[a]	6.103	.541	-8.296	15.766
	1451	.667[a]	7.564	.930	-14.245	15.579
	1557	-4.614[a]	5.888	.434	-16.221	6.993
1251	252	.803[b]	6.953	.908	-12.904	14.510
	253	2.725[b]	6.542	.677	-10.171	15.622
	1253	3.963	8.558	.644	-12.909	20.834
	1351	6.460	6.272	.304	-5.904	18.825
	1451	3.392	7.702	.660	-11.790	18.575
	1557	-1.889	6.063	.756	-13.842	10.064

(I) School	(J) School	Mean Difference (I-J)	Std. Error	Sig.[b]	95% Confidence Interval for Difference[b] Lower Bound	Upper Bound
1253	252	-3.160[b]	8.758	.719	-20.424	14.105
	253	-1.238[b]	8.435	.883	-17.866	15.391
	1251	-3.963	8.558	.644	-20.834	12.909
	1351	2.498	8.227	.762	-13.721	18.717
	1451	-.570	9.363	.951	-19.028	17.888
	1557	-5.852	8.069	.469	-21.759	10.055
1351	252	-5.657[b]	6.542	.388	-18.553	7.239
	253	-3.735[b]	6.103	.541	-15.766	8.296
	1251	-6.460	6.272	.304	-18.825	5.904
	1253	-2.498	8.227	.762	-18.717	13.721
	1451	-3.068	7.332	.676	-17.522	11.387
	1557	-8.349	5.587	.137	-19.362	2.664
1451	252	-2.589[b]	7.923	.744	-18.208	13.029
	253	-.667[b]	7.564	.930	-15.579	14.245
	1251	-3.392	7.702	.660	-18.575	11.790
	1253	.570	9.363	.951	-17.888	19.028
	1351	3.068	7.332	.676	-11.387	17.522
	1557	-5.281	7.154	.461	-19.385	8.822
1557	252	2.692[b]	6.342	.672	-9.809	15.193
	253	4.614[b]	5.888	.434	-6.993	16.221
	1251	1.889	6.063	.756	-10.064	13.842
	1253	5.852	8.069	.469	-10.055	21.759
	1351	8.349	5.587	.137	-2.664	19.362
	1451	5.281	7.154	.461	-8.822	19.385

Based on estimated marginal means

a. An estimate of the modified population marginal mean (I).

b. An estimate of the modified population marginal mean (J).

c. Adjustment for multiple comparisons: Least Significant Difference (equivalent to no adjustments).

Table M2 shows that there is a statistically significant difference at the .05 level between AVID and Non-AVID students on the MSA Reading Exams where p = .007.

Table M2

AVID/Non-AVID Students Statistical Significance Results for MSA Reading Exam

Pairwise Comparisons

Dependent Variable: MSA Reading 2009-10

		Mean Difference			95% Confidence Interval for Difference[b]	
(I) Avid	(J) Avid	(I-J)	Std. Error	Sig.[b]	Lower Bound	Upper Bound
No	Yes	11.174*[,a]	4.080	.007	3.130	19.217
Yes	No	-11.174*[,c]	4.080	.007	-19.217	-3.130

Based on estimated marginal means

*. The mean difference is significant at the .05 level.

a. An estimate of the modified population marginal mean (I).

b. Adjustment for multiple comparisons: Least Significant Difference (equivalent to no adjustments).

c. An estimate of the modified population marginal mean (J).

APPENDIX N

Table N1

Null Hypothesis 2: MSA Math Pairwise Comparisons

Pairwise Comparisons

Dependent Variable: MSA Math 2009-10

(I) School	(J) School	Mean Difference (I-J)	Std. Error	Sig.[c]	95% Confidence Interval for Difference[c] Lower Bound	Upper Bound
252	253	-16.276[*,a,b]	7.053	.022	-30.179	-2.373
	1251	-8.373[a]	7.211	.247	-22.588	5.842
	1253	-19.528[*,a]	9.082	.033	-37.432	-1.624
	1351	4.481[a]	6.784	.510	-8.892	17.855
	1451	-6.343[a]	8.216	.441	-22.540	9.854
	1557	-10.619[a]	6.577	.108	-23.583	2.346
253	252	16.276[*,a,b]	7.053	.022	2.373	30.179
	1251	7.903[a]	6.784	.245	-5.471	21.277
	1253	-3.252[a]	8.747	.710	-20.496	13.992
	1351	20.757[*,a]	6.329	.001	8.281	33.234
	1451	9.933[a]	7.845	.207	-5.531	25.398
	1557	5.657[a]	6.106	.355	-6.379	17.694
1251	252	8.373[b]	7.211	.247	-5.842	22.588
	253	-7.903[b]	6.784	.245	-21.277	5.471
	1253	-11.155	8.875	.210	-28.652	6.341
	1351	12.854[*]	6.505	.049	.031	25.677
	1451	2.030	7.987	.800	-13.715	17.775
	1557	-2.246	6.288	.721	-14.641	10.149

(I) School	(J) School	Mean Difference (I-J)	Std. Error	Sig.[b]	95% Confidence Interval for Difference[b] Lower Bound	Upper Bound
1253	252	19.528*,b	9.082	.033	1.624	37.432
	253	3.252[b]	8.747	.710	-13.992	20.496
	1251	11.155	8.875	.210	-6.341	28.652
	1351	24.010*	8.532	.005	7.190	40.829
	1451	13.185	9.710	.176	-5.956	32.327
	1557	8.909	8.368	.288	-7.587	25.406
1351	252	-4.481[b]	6.784	.510	-17.855	8.892
	253	-20.757*,b	6.329	.001	-33.234	-8.281
	1251	-12.854*	6.505	.049	-25.677	-.031
	1253	-24.010*	8.532	.005	-40.829	-7.190
	1451	-10.824	7.604	.156	-25.814	4.166
	1557	-15.100*	5.793	.010	-26.521	-3.679
1451	252	6.343[b]	8.216	.441	-9.854	22.540
	253	-9.933[b]	7.845	.207	-25.398	5.531
	1251	-2.030	7.987	.800	-17.775	13.715
	1253	-13.185	9.710	.176	-32.327	5.956
	1351	10.824	7.604	.156	-4.166	25.814
	1557	-4.276	7.419	.565	-18.902	10.350
1557	252	10.619[b]	6.577	.108	-2.346	23.583
	253	-5.657[b]	6.106	.355	-17.694	6.379
	1251	2.246	6.288	.721	-10.149	14.641
	1253	-8.909	8.368	.288	-25.406	7.587
	1351	15.100*	5.793	.010	3.679	26.521
	1451	4.276	7.419	.565	-10.350	18.902

Based on estimated marginal means

*. The mean difference is significant at the .05 level.

a. An estimate of the modified population marginal mean (I).

b. An estimate of the modified population marginal mean (J).

c. Adjustment for multiple comparisons: Least Significant Difference (equivalent to no adjustments).

Table N2 shows that there is not a statistically significant difference at the .05 level between AVID and Non-AVID students on the Math MSA Exams where p = .053.

Table N2

AVID/Non-AVID Students Statistical Significance Results for MSA Math Exam

Pairwise Comparisons

Dependent Variable: MSA Math 2009-10

		Mean Difference			95% Confidence Interval for Difference[b]	
(I) Avid	(J) Avid	(I-J)	Std. Error	Sig.[b]	Lower Bound	Upper Bound
No	Yes	8.241[a]	4.231	.053	-.100	16.583
Yes	No	-8.241[c]	4.231	.053	-16.583	.100

Based on estimated marginal means

a. An estimate of the modified population marginal mean (I).

b. Adjustment for multiple comparisons: Least Significant Difference (equivalent to no adjustments).

c. An estimate of the modified population marginal mean (J).

APPENDIX O

Table O1

Null Hypothesis 2: MSA Science Pairwise Comparisons

Pairwise Comparisons

Dependent Variable: MSA Science 2009-10

(I) School	(J) School	Mean Difference (I-J)	Std. Error	Sig.[c]	95% Confidence Interval for Difference[c] Lower Bound	Upper Bound
252	253	4.698[a,b]	9.226	.611	-13.489	22.885
	1251	-16.970[a]	9.433	.073	-35.564	1.625
	1253	-15.506[a]	11.880	.193	-38.926	7.914
	1351	5.785[a]	8.874	.515	-11.709	23.279
	1451	-12.662[a]	10.748	.240	-33.850	8.525
	1557	-9.464[a]	8.603	.273	-26.423	7.495
253	252	-4.698[a,b]	9.226	.611	-22.885	13.489
	1251	-21.668[a,*]	8.875	.015	-39.163	-4.173
	1253	-20.204[a]	11.443	.079	-42.761	2.353
	1351	1.087[a]	8.279	.896	-15.234	17.407
	1451	-17.360[a]	10.262	.092	-37.589	2.869
	1557	-14.162[a]	7.987	.078	-29.908	1.583
1251	252	16.970[b]	9.433	.073	-1.625	35.564
	253	21.668[b,*]	8.875	.015	4.173	39.163
	1253	1.464	11.610	.900	-21.423	24.351
	1351	22.755[*]	8.509	.008	5.981	39.528
	1451	4.308	10.448	.681	-16.289	24.904
	1557	7.505	8.225	.363	-8.709	23.720

(I) School	(J) School	Mean Difference (I-J)	Std. Error	Sig.[b]	95% Confidence Interval for Difference[b] Lower Bound	Upper Bound
1253	252	15.506[b]	11.880	.193	-7.914	38.926
	253	20.204[b]	11.443	.079	-2.353	42.761
	1251	-1.464	11.610	.900	-24.351	21.423
	1351	21.291	11.161	.058	-.711	43.293
	1451	2.844	12.702	.823	-22.195	27.883
	1557	6.042	10.946	.582	-15.537	27.621
1351	252	-5.785[b]	8.874	.515	-23.279	11.709
	253	-1.087[b]	8.279	.896	-17.407	15.234
	1251	-22.755*	8.509	.008	-39.528	-5.981
	1253	-21.291	11.161	.058	-43.293	.711
	1451	-18.447	9.947	.065	-38.055	1.162
	1557	-15.249*	7.578	.045	-30.189	-.309
1451	252	12.662[b]	10.748	.240	-8.525	33.850
	253	17.360[b]	10.262	.092	-2.869	37.589
	1251	-4.308	10.448	.681	-24.904	16.289
	1253	-2.844	12.702	.823	-27.883	22.195
	1351	18.447	9.947	.065	-1.162	38.055
	1557	3.198	9.705	.742	-15.935	22.330
1557	252	9.464[b]	8.603	.273	-7.495	26.423
	253	14.162[b]	7.987	.078	-1.583	29.908
	1251	-7.505	8.225	.363	-23.720	8.709
	1253	-6.042	10.946	.582	-27.621	15.537
	1351	15.249*	7.578	.045	.309	30.189
	1451	-3.198	9.705	.742	-22.330	15.935

Based on estimated marginal means

a. An estimate of the modified population marginal mean (I).

b. An estimate of the modified population marginal mean (J).

c. Adjustment for multiple comparisons: Least Significant Difference (equivalent to no adjustments).

*. The mean difference is significant at the .05 level.

Table O2 shows that there is a statistically significant difference at the .05 level between AVID and Non-AVID students on the Science MSA Exams where p = .000.

Table O2

AVID/Non-AVID Students Statistical Significance Results for MSA Science Exam

Pairwise Comparisons

Dependent Variable: MSA Science 2009-10

		Mean Difference			95% Confidence Interval for Difference[b]	
(I) Avid	(J) Avid	(I-J)	Std. Error	Sig.[b]	Lower Bound	Upper Bound
No	Yes	21.251*,a	5.535	.000	10.340	32.162
Yes	No	-21.251*,c	5.535	.000	-32.162	-10.340

Based on estimated marginal means

*. The mean difference is significant at the .05 level.

a. An estimate of the modified population marginal mean (I).

b. Adjustment for multiple comparisons: Least Significant Difference (equivalent to no adjustments).

c. An estimate of the modified population marginal mean (J).

APPENDIX P

Table P1

Null Hypothesis 2: Days Suspended Pairwise Comparisons

Pairwise Comparisons

Dependent Variable: Days Suspended 2009-10

(I) School	(J) School	Mean Difference (I-J)	Std. Error	Sig.[c]	95% Confidence Interval for Difference[c]	
					Lower Bound	Upper Bound
252	253	.455[a,b]	.325	.164	-.186	1.095
	1251	.015[a]	.332	.964	-.640	.670
	1253	.373[a]	.419	.374	-.452	1.198
	1351	-.137[a]	.313	.662	-.753	.480
	1451	.043[a]	.379	.910	-.704	.789
	1557	-.052[a]	.303	.865	-.649	.546
253	252	-.455[a,b]	.325	.164	-1.095	.186
	1251	-.439[a]	.313	.161	-1.056	.177
	1253	-.081[a]	.403	.840	-.876	.713
	1351	-.591[a,*]	.292	.044	-1.166	-.016
	1451	-.412[a]	.362	.256	-1.125	.301
	1557	-.506[a]	.281	.074	-1.061	.049
1251	252	-.015[b]	.332	.964	-.670	.640
	253	.439[b]	.313	.161	-.177	1.056
	1253	.358	.409	.383	-.448	1.164
	1351	-.152	.300	.613	-.743	.439
	1451	.028	.368	.940	-.698	.753
	1557	-.067	.290	.818	-.638	.505

(I) School	(J) School	Mean Difference (I-J)	Std. Error	Sig.[b]	95% Confidence Interval for Difference[b] Lower Bound	Upper Bound
1253	252	-.373[b]	.419	.374	-1.198	.452
	253	.081[b]	.403	.840	-.713	.876
	1251	-.358	.409	.383	-1.164	.448
	1351	-.510	.393	.196	-1.285	.265
	1451	-.330	.448	.461	-1.213	.552
	1557	-.425	.386	.272	-1.185	.336
1351	252	.137[b]	.313	.662	-.480	.753
	253	.591[b,*]	.292	.044	.016	1.166
	1251	.152	.300	.613	-.439	.743
	1253	.510	.393	.196	-.265	1.285
	1451	.180	.351	.609	-.511	.871
	1557	.085	.267	.750	-.441	.612
1451	252	-.043[b]	.379	.910	-.789	.704
	253	.412[b]	.362	.256	-.301	1.125
	1251	-.028	.368	.940	-.753	.698
	1253	.330	.448	.461	-.552	1.213
	1351	-.180	.351	.609	-.871	.511
	1557	-.094	.342	.783	-.769	.580
1557	252	.052[b]	.303	.865	-.546	.649
	253	.506[b]	.281	.074	-.049	1.061
	1251	.067	.290	.818	-.505	.638
	1253	.425	.386	.272	-.336	1.185
	1351	-.085	.267	.750	-.612	.441
	1451	.094	.342	.783	-.580	.769

Based on estimated marginal means

a. An estimate of the modified population marginal mean (I).

b. An estimate of the modified population marginal mean (J).

c. Adjustment for multiple comparisons: Least Significant Difference (equivalent to no adjustments).

*. The mean difference is significant at the .05 level.

Table P2 shows that there is not a statistically significant difference at the .05 level between AVID and Non-AVID students on the Days Suspended where p = .956.

Table P2

AVID/Non-AVID Students Statistical Significance Results for Days Suspended Exam

Pairwise Comparisons

Dependent Variable: Days Suspended 2009-10

		Mean Difference			95% Confidence Interval for Difference[b]	
(I) Avid	(J) Avid	(I-J)	Std. Error	Sig.[b]	Lower Bound	Upper Bound
No	Yes	.011[a]	.195	.956	-.374	.395
Yes	No	-.011[c]	.195	.956	-.395	.374

Based on estimated marginal means

a. An estimate of the modified population marginal mean (I).

b. Adjustment for multiple comparisons: Least Significant Difference (equivalent to no adjustments).

c. An estimate of the modified population marginal mean (J).

APPENDIX Q

Table Q1

Null Hypothesis 2: Days Absent Pairwise Comparisons

Pairwise Comparisons

Dependent Variable: Days Absent 2009-10

(I) School	(J) School	Mean Difference (I-J)	Std. Error	Sig.[c]	95% Confidence Interval for Difference[c] Lower Bound	Upper Bound
252	253	1.097[a,b]	1.551	.480	-1.960	4.155
	1251	1.912[a]	1.586	.229	-1.214	5.038
	1253	-.968[a]	1.997	.628	-4.905	2.969
	1351	-2.291[a]	1.492	.126	-5.232	.649
	1451	-.498[a]	1.807	.783	-4.060	3.063
	1557	-.878[a]	1.446	.545	-3.728	1.973
253	252	-1.097[a,b]	1.551	.480	-4.155	1.960
	1251	.815[a]	1.492	.586	-2.126	3.756
	1253	-2.065[a]	1.923	.284	-5.857	1.726
	1351	-3.389[a,*]	1.392	.016	-6.132	-.645
	1451	-1.596[a]	1.725	.356	-4.996	1.805
	1557	-1.975[a]	1.343	.143	-4.622	.672
1251	252	-1.912[b]	1.586	.229	-5.038	1.214
	253	-.815[b]	1.492	.586	-3.756	2.126
	1253	-2.880	1.952	.142	-6.727	.967
	1351	-4.204[*]	1.430	.004	-7.023	-1.384
	1451	-2.411	1.756	.171	-5.873	1.052
	1557	-2.790[*]	1.383	.045	-5.515	-.064

(I) School	(J) School	Mean Difference (I-J)	Std. Error	Sig.[b]	95% Confidence Interval for Difference[b] Lower Bound	Upper Bound
1253	252	.968[b]	1.997	.628	-2.969	4.905
	253	2.065[b]	1.923	.284	-1.726	5.857
	1251	2.880	1.952	.142	-.967	6.727
	1351	-1.324	1.876	.481	-5.022	2.375
	1451	.470	2.135	.826	-3.740	4.679
	1557	.090	1.840	.961	-3.537	3.718
1351	252	2.291[b]	1.492	.126	-.649	5.232
	253	3.389[b,*]	1.392	.016	.645	6.132
	1251	4.204[*]	1.430	.004	1.384	7.023
	1253	1.324	1.876	.481	-2.375	5.022
	1451	1.793	1.672	.285	-1.503	5.089
	1557	1.414	1.274	.268	-1.097	3.925
1451	252	.498[b]	1.807	.783	-3.063	4.060
	253	1.596[b]	1.725	.356	-1.805	4.996
	1251	2.411	1.756	.171	-1.052	5.873
	1253	-.470	2.135	.826	-4.679	3.740
	1351	-1.793	1.672	.285	-5.089	1.503
	1557	-.379	1.631	.816	-3.595	2.837
1557	252	.878[b]	1.446	.545	-1.973	3.728
	253	1.975[b]	1.343	.143	-.672	4.622
	1251	2.790[*]	1.383	.045	.064	5.515
	1253	-.090	1.840	.961	-3.718	3.537
	1351	-1.414	1.274	.268	-3.925	1.097
	1451	.379	1.631	.816	-2.837	3.595

Based on estimated marginal means

a. An estimate of the modified population marginal mean (I).

b. An estimate of the modified population marginal mean (J).

c. Adjustment for multiple comparisons: Least Significant Difference (equivalent to no adjustments).

*. The mean difference is significant at the .05 level.

Table Q2 shows that there is not a statistically significant difference at the .05 level between AVID and Non-AVID students on the Days Absent where p = .099.

Table Q2

AVID/Non-AVID Students Statistical Significance Results for Days Absent

Pairwise Comparisons

Dependent Variable: Days Absent 2009-10

		Mean Difference			95% Confidence Interval for Difference[b]	
(I) Avid	(J) Avid	(I-J)	Std. Error	Sig.[b]	Lower Bound	Upper Bound
No	Yes	1.542[a]	.930	.099	-.292	3.376
Yes	No	-1.542[c]	.930	.099	-3.376	.292

Based on estimated marginal means

a. An estimate of the modified population marginal mean (I).

b. Adjustment for multiple comparisons: Least Significant Difference (equivalent to no adjustments).

c. An estimate of the modified population marginal mean (J).

APPENDIX R

Null Hypothesis 4: MSA Reading Pairwise Comparisons

Table R1

Data Analysis of Two-Way ANOVA for Research Question 4

Pairwise Comparisons

Dependent Variable: MSA Reading 2009-10

(I) School	(J) School	Mean Difference (I-J)	Std. Error	Sig.[a]	95% Confidence Interval for Difference[a]	
					Lower Bound	Upper Bound
252	253	-6.098	6.068	.318	-18.192	5.996
	1251	3.446	9.863	.728	-16.211	23.104
	1253	4.280[b]	14.514	.769	-24.646	33.206
	1351	-1.554	9.005	.863	-19.500	16.393
	1451	16.669*	6.580	.013	3.554	29.783
	1557	16.752*	7.169	.022	2.464	31.040
253	252	6.098	6.068	.318	-5.996	18.192
	1251	9.544	10.074	.347	-10.533	29.622
	1253	10.378[b]	14.658	.481	-18.836	39.591
	1351	4.544	9.236	.624	-13.862	22.951
	1451	22.767*	6.892	.001	9.030	36.503
	1557	22.850*	7.457	.003	7.989	37.711
1251	252	-3.446	9.863	.728	-23.104	16.211
	253	-9.544	10.074	.347	-29.622	10.533
	1253	.833[b]	16.593	.960	-32.236	33.903
	1351	-5.000	12.073	.680	-29.061	19.061
	1451	13.222	10.391	.207	-7.487	33.931
	1557	13.306	10.773	.221	-8.166	34.777

(I) School	(J) School	Mean Difference (I-J)	Std. Error	Sig.[b]	95% Confidence Interval for Difference[b] Lower Bound	Upper Bound
1253	252	-4.280[c]	14.514	.769	-33.206	24.646
	253	-10.378[c]	14.658	.481	-39.591	18.836
	1251	-.833[c]	16.593	.960	-33.903	32.236
	1351	-5.833[c]	16.097	.718	-37.915	26.249
	1451	12.389[c]	14.877	.408	-17.262	42.039
	1557	12.472[c]	15.147	.413	-17.716	42.660
1351	252	1.554	9.005	.863	-16.393	19.500
	253	-4.544	9.236	.624	-22.951	13.862
	1251	5.000	12.073	.680	-19.061	29.061
	1253	5.833[b]	16.097	.718	-26.249	37.915
	1451	18.222	9.580	.061	-.870	37.315
	1557	18.306	9.994	.071	-1.612	38.223
1451	252	-16.669*	6.580	.013	-29.783	-3.554
	253	-22.767*	6.892	.001	-36.503	-9.030
	1251	-13.222	10.391	.207	-33.931	7.487
	1253	-12.389[b]	14.877	.408	-42.039	17.262
	1351	-18.222	9.580	.061	-37.315	.870
	1557	.083	7.879	.992	-15.620	15.787
1557	252	-16.752*	7.169	.022	-31.040	-2.464
	253	-22.850*	7.457	.003	-37.711	-7.989
	1251	-13.306	10.773	.221	-34.777	8.166
	1253	-12.472[b]	15.147	.413	-42.660	17.716
	1351	-18.306	9.994	.071	-38.223	1.612
	1451	-.083	7.879	.992	-15.787	15.620

Based on estimated marginal means

a. Adjustment for multiple comparisons: Least Significant Difference (equivalent to no adjustments).

b. An estimate of the modified population marginal mean (J).

*. The mean difference is significant at the .05 level.

c. An estimate of the modified population marginal mean (I).

Table R2 shows that there is not a statistically significant difference at the .05 level between AVID and Non-AVID students on the MSA Reading Exams where p = .100.

Table R2

AVID/Non-AVID Students Statistical Significance Results for MSA Reading Exam

Pairwise Comparisons

Dependent Variable: MSA Reading 2009-10

		Mean Difference			95% Confidence Interval for Difference[b]	
(I) Avid	(J) Avid	(I-J)	Std. Error	Sig.[b]	Lower Bound	Upper Bound
No	Yes	-8.739[a]	5.248	.100	-19.198	1.720
Yes	No	8.739[c]	5.248	.100	-1.720	19.198

Based on estimated marginal means

a. An estimate of the modified population marginal mean (J).

b. Adjustment for multiple comparisons: Least Significant Difference (equivalent to no adjustments).

c. An estimate of the modified population marginal mean (I).

APPENDIX S

Table S1

Null Hypothesis 4: MSA Math Pairwise Comparisons

Pairwise Comparisons

Dependent Variable: MSA Math 2009-10

(I) School	(J) School	Mean Difference (I-J)	Std. Error	Sig.[a]	95% Confidence Interval for Difference[a]	
					Lower Bound	Upper Bound
252	253	-12.177*	5.757	.038	-23.650	-.704
	1251	-1.527	9.357	.871	-20.175	17.121
	1253	-5.860[b]	13.768	.672	-33.301	21.580
	1351	-1.360	8.543	.874	-18.385	15.665
	1451	26.195*	6.242	.000	13.754	38.636
	1557	1.140	6.801	.867	-12.415	14.694
253	252	12.177*	5.757	.038	.704	23.650
	1251	10.650	9.557	.269	-8.397	29.697
	1253	6.317[b]	13.905	.651	-21.396	34.030
	1351	10.817	8.761	.221	-6.644	28.278
	1451	38.372*	6.538	.000	25.341	51.403
	1557	13.317	7.074	.064	-.781	27.415
1251	252	1.527	9.357	.871	-17.121	20.175
	253	-10.650	9.557	.269	-29.697	8.397
	1253	-4.333[b]	15.741	.784	-35.704	27.038
	1351	.167	11.453	.988	-22.659	22.992
	1451	27.722*	9.857	.006	8.077	47.367
	1557	2.667	10.220	.795	-17.702	23.035

(I) School	(J) School	Mean Difference (I-J)	Std. Error	Sig.[b]	95% Confidence Interval for Difference[b] Lower Bound	Upper Bound
1253	252	5.860[c]	13.768	.672	-21.580	33.301
	253	-6.317[c]	13.905	.651	-34.030	21.396
	1251	4.333[c]	15.741	.784	-27.038	35.704
	1351	4.500[c]	15.271	.769	-25.934	34.934
	1451	32.056*[c]	14.113	.026	3.928	60.183
	1557	7.000[c]	14.369	.628	-21.638	35.638
1351	252	1.360	8.543	.874	-15.665	18.385
	253	-10.817	8.761	.221	-28.278	6.644
	1251	-.167	11.453	.988	-22.992	22.659
	1253	-4.500[b]	15.271	.769	-34.934	25.934
	1451	27.556*	9.088	.003	9.444	45.668
	1557	2.500	9.480	.793	-16.394	21.394
1451	252	-26.195*	6.242	.000	-38.636	-13.754
	253	-38.372*	6.538	.000	-51.403	-25.341
	1251	-27.722*	9.857	.006	-47.367	-8.077
	1253	-32.056*[b]	14.113	.026	-60.183	-3.928
	1351	-27.556*	9.088	.003	-45.668	-9.444
	1557	-25.056*	7.475	.001	-39.952	-10.159
1557	252	-1.140	6.801	.867	-14.694	12.415
	253	-13.317	7.074	.064	-27.415	.781
	1251	-2.667	10.220	.795	-23.035	17.702
	1253	-7.000[b]	14.369	.628	-35.638	21.638
	1351	-2.500	9.480	.793	-21.394	16.394
	1451	25.056*	7.475	.001	10.159	39.952

Based on estimated marginal means

*. The mean difference is significant at the .05 level.

a. Adjustment for multiple comparisons: Least Significant Difference (equivalent to no adjustments).

b. An estimate of the modified population marginal mean (J).

c. An estimate of the modified population marginal mean (I).

Table S2 shows that there is a statistically significant difference at the .05 level between AVID and Non-AVID students on the Math MSA Exams where p = .030.

Table S2

AVID/Non-AVID Students Statistical Significance Results for MSA Math Exam

Pairwise Comparisons

Dependent Variable: MSA Math 2009-10

					95% Confidence Interval for Difference[b]	
(I) Avid	(J) Avid	Mean Difference (I-J)	Std. Error	Sig.[b]	Lower Bound	Upper Bound
No	Yes	-10.985*[,a]	4.978	.030	-20.907	-1.063
Yes	No	10.985*[,c]	4.978	.030	1.063	20.907

Based on estimated marginal means

*. The mean difference is significant at the .05 level.

a. An estimate of the modified population marginal mean (J).

b. Adjustment for multiple comparisons: Least Significant Difference (equivalent to no adjustments).

c. An estimate of the modified population marginal mean (I).

APPENDIX T

Table T1

Null Hypothesis 4: MSA Math Effect Size

Tests of Between-Subjects Effects

Dependent Variable:Math_MSA_0910

Source	Type III Sum of Squares	*df*	Mean Square	*F*	Sig.	Partial Eta Squared
Corrected Model	17067.849[a]	12	1422.321	4.066	.000	.401
Intercept	8442848.771	1	8442848.771	24137.046	.000	.997
School	12792.347	6	2132.058	6.095	.000	.334
Avid	2433.673	1	2433.673	6.958	.010	.087
School * Avid	959.603	5	191.921	.549	.739	.036
Error	25534.523	73	349.788			
Total	1.438E7	86				
Corrected Total	42602.372	85				

a. R Squared = .401 (Adjusted R Squared = .302)

APPENDIX U

Table U1

Null Hypothesis 4: MSA Science Pairwise Comparisons

Pairwise Comparisons

Dependent Variable: MSA Science 2009-10

(I) School	(J) School	Mean Difference (I-J)	Std. Error	Sig.[a]	95% Confidence Interval for Difference[a] Lower Bound	Upper Bound
252	253	8.878	9.803	.368	-10.659	28.415
	1251	-28.972	15.934	.073	-60.728	2.784
	1253	-8.472[b]	23.446	.719	-55.201	38.256
	1351	7.028	14.547	.630	-21.964	36.020
	1451	12.778	10.630	.233	-8.408	33.964
	1557	12.764	11.582	.274	-10.318	35.846
253	252	-8.878	9.803	.368	-28.415	10.659
	1251	-37.850*	16.274	.023	-70.285	-5.415
	1253	-17.350[b]	23.679	.466	-64.543	29.843
	1351	-1.850	14.920	.902	-31.585	27.885
	1451	3.900	11.134	.727	-18.291	26.091
	1557	3.886	12.046	.748	-20.122	27.894
1251	252	28.972	15.934	.073	-2.784	60.728
	253	37.850*	16.274	.023	5.415	70.285
	1253	20.500[b]	26.805	.447	-32.922	73.922
	1351	36.000	19.503	.069	-2.870	74.870
	1451	41.750*	16.786	.015	8.296	75.204
	1557	41.736*	17.404	.019	7.050	76.422

(I) School	(J) School	Mean Difference (I-J)	Std. Error	Sig.[b]	95% Confidence Interval for Difference[b] Lower Bound	Upper Bound
1253	252	8.472[c]	23.446	.719	-38.256	55.201
	253	17.350[c]	23.679	.466	-29.843	64.543
	1251	-20.500[c]	26.805	.447	-73.922	32.922
	1351	15.500[c]	26.004	.553	-36.327	67.327
	1451	21.250[c]	24.034	.380	-26.649	69.149
	1557	21.236[c]	24.469	.388	-27.531	70.003
1351	252	-7.028	14.547	.630	-36.020	21.964
	253	1.850	14.920	.902	-27.885	31.585
	1251	-36.000	19.503	.069	-74.870	2.870
	1253	-15.500[b]	26.004	.553	-67.327	36.327
	1451	5.750	15.476	.711	-25.093	36.593
	1557	5.736	16.144	.723	-26.439	37.911
1451	252	-12.778	10.630	.233	-33.964	8.408
	253	-3.900	11.134	.727	-26.091	18.291
	1251	-41.750*	16.786	.015	-75.204	-8.296
	1253	-21.250[b]	24.034	.380	-69.149	26.649
	1351	-5.750	15.476	.711	-36.593	25.093
	1557	-.014	12.728	.999	-25.382	25.354
1557	252	-12.764	11.582	.274	-35.846	10.318
	253	-3.886	12.046	.748	-27.894	20.122
	1251	-41.736*	17.404	.019	-76.422	-7.050
	1253	-21.236[b]	24.469	.388	-70.003	27.531
	1351	-5.736	16.144	.723	-37.911	26.439
	1451	.014	12.728	.999	-25.354	25.382

Based on estimated marginal means

a. Adjustment for multiple comparisons: Least Significant Difference (equivalent to no adjustments).

b. An estimate of the modified population marginal mean (J).

*. The mean difference is significant at the .05 level.

c. An estimate of the modified population marginal mean (I).

Table U2 shows that there is not a statistically significant difference at the .05 level between AVID and Non-AVID students on the Science MSA Exams where p = .448.

Table U2

AVID/Non-AVID Students Statistical Significance Results for MSA Science Exam

Pairwise Comparisons

Dependent Variable: MSA Science 2009-10

		Mean Difference			95% Confidence Interval for Difference[b]	
(I) Avid	(J) Avid	(I-J)	Std. Error	Sig.[b]	Lower Bound	Upper Bound
No	Yes	-6.473[a]	8.478	.448	-23.369	10.423
Yes	No	6.473[c]	8.478	.448	-10.423	23.369

Based on estimated marginal means

a. An estimate of the modified population marginal mean (J).

b. Adjustment for multiple comparisons: Least Significant Difference (equivalent to no adjustments).

c. An estimate of the modified population marginal mean (I).

APPENDIX V

Table V1

Null Hypothesis 4: Days Suspended Pairwise Comparisons

Pairwise Comparisons

Dependent Variable: Days Suspended 2009-10

(I) School	(J) School	Mean Difference (I-J)	Std. Error	Sig.[a]	95% Confidence Interval for Difference[a]	
					Lower Bound	Upper Bound
252	253	.455	.534	.397	-.609	1.518
	1251	.121	.867	.889	-1.608	1.850
	1253	-.545[b]	1.276	.670	-3.089	1.998
	1351	.205	.792	.797	-1.374	1.783
	1451	-.101	.579	.862	-1.254	1.052
	1557	.552	.630	.384	-.705	1.808
253	252	-.455	.534	.397	-1.518	.609
	1251	-.333	.886	.708	-2.099	1.432
	1253	-1.000[b]	1.289	.440	-3.569	1.569
	1351	-.250	.812	.759	-1.869	1.369
	1451	-.556	.606	.362	-1.764	.652
	1557	.097	.656	.883	-1.210	1.404
1251	252	-.121	.867	.889	-1.850	1.608
	253	.333	.886	.708	-1.432	2.099
	1253	-.667[b]	1.459	.649	-3.575	2.241
	1351	.083	1.062	.938	-2.033	2.199
	1451	-.222	.914	.809	-2.043	1.599
	1557	.431	.947	.651	-1.458	2.319

(I) School	(J) School	Mean Difference (I-J)	Std. Error	Sig.[b]	95% Confidence Interval for Difference[b] Lower Bound	Upper Bound
1253	252	.545[c]	1.276	.670	-1.998	3.089
	253	1.000[c]	1.289	.440	-1.569	3.569
	1251	.667[c]	1.459	.649	-2.241	3.575
	1351	.750[c]	1.416	.598	-2.071	3.571
	1451	.444[c]	1.308	.735	-2.163	3.052
	1557	1.097[c]	1.332	.413	-1.558	3.752
1351	252	-.205	.792	.797	-1.783	1.374
	253	.250	.812	.759	-1.369	1.869
	1251	-.083	1.062	.938	-2.199	2.033
	1253	-.750[b]	1.416	.598	-3.571	2.071
	1451	-.306	.842	.718	-1.985	1.373
	1557	.347	.879	.694	-1.404	2.099
1451	252	.101	.579	.862	-1.052	1.254
	253	.556	.606	.362	-.652	1.764
	1251	.222	.914	.809	-1.599	2.043
	1253	-.444[b]	1.308	.735	-3.052	2.163
	1351	.306	.842	.718	-1.373	1.985
	1557	.653	.693	.349	-.728	2.034
1557	252	-.552	.630	.384	-1.808	.705
	253	-.097	.656	.883	-1.404	1.210
	1251	-.431	.947	.651	-2.319	1.458
	1253	-1.097[b]	1.332	.413	-3.752	1.558
	1351	-.347	.879	.694	-2.099	1.404
	1451	-.653	.693	.349	-2.034	.728

Based on estimated marginal means

a. Adjustment for multiple comparisons: Least Significant Difference (equivalent to no adjustments).

b. An estimate of the modified population marginal mean (J).

c. An estimate of the modified population marginal mean (I).

Table V2 shows that there is not a statistically significant difference at the .05 level between AVID and Non-AVID students for Days Suspended where p = .965.

Table V2

AVID/Non-AVID Students Statistical Significance Results for Days Suspended

Pairwise Comparisons

Dependent Variable: Days Suspended 2009-10

		Mean Difference			95% Confidence Interval for Difference[b]	
(I) Avid	(J) Avid	(I-J)	Std. Error	Sig.[b]	Lower Bound	Upper Bound
No	Yes	-.021[a]	.462	.965	-.940	.899
Yes	No	.021[c]	.462	.965	-.899	.940

Based on estimated marginal means

a. An estimate of the modified population marginal mean (J).

b. Adjustment for multiple comparisons: Least Significant Difference (equivalent to no adjustments).

c. An estimate of the modified population marginal mean (I).

APPENDIX W

Table W1

Null Hypothesis 4: Days Absent Pairwise Comparisons

Pairwise Comparisons

Dependent Variable: Days Absent 2009-10

(I) School	(J) School	Mean Difference (I-J)	Std. Error	Sig.[a]	95% Confidence Interval for Difference[a]	
					Lower Bound	Upper Bound
252	253	.721	1.601	.654	-2.471	3.912
	1251	-1.815	2.603	.488	-7.003	3.372
	1253	3.851[b]	3.830	.318	-3.782	11.485
	1351	1.185	2.376	.620	-3.551	5.921
	1451	-2.149	1.737	.220	-5.609	1.312
	1557	-2.482	1.892	.194	-6.253	1.289
253	252	-.721	1.601	.654	-3.912	2.471
	1251	-2.536	2.659	.343	-7.835	2.762
	1253	3.131[b]	3.868	.421	-4.579	10.840
	1351	.464	2.437	.850	-4.393	5.321
	1451	-2.869	1.819	.119	-6.494	.756
	1557	-3.203	1.968	.108	-7.125	.719
1251	252	1.815	2.603	.488	-3.372	7.003
	253	2.536	2.659	.343	-2.762	7.835
	1253	5.667[b]	4.379	.200	-3.060	14.393
	1351	3.000	3.186	.349	-3.350	9.350
	1451	-.333	2.742	.904	-5.798	5.132
	1557	-.667	2.843	.815	-6.333	4.999

(I) School	(J) School	Mean Difference (I-J)	Std. Error	Sig.[b]	95% Confidence Interval for Difference[b] Lower Bound	Upper Bound
1253	252	-3.851[c]	3.830	.318	-11.485	3.782
	253	-3.131[c]	3.868	.421	-10.840	4.579
	1251	-5.667[c]	4.379	.200	-14.393	3.060
	1351	-2.667[c]	4.248	.532	-11.133	5.800
	1451	-6.000[c]	3.926	.131	-13.825	1.825
	1557	-6.333[c]	3.997	.117	-14.300	1.633
1351	252	-1.185	2.376	.620	-5.921	3.551
	253	-.464	2.437	.850	-5.321	4.393
	1251	-3.000	3.186	.349	-9.350	3.350
	1253	2.667[b]	4.248	.532	-5.800	11.133
	1451	-3.333	2.528	.191	-8.372	1.705
	1557	-3.667	2.637	.169	-8.923	1.589
1451	252	2.149	1.737	.220	-1.312	5.609
	253	2.869	1.819	.119	-.756	6.494
	1251	.333	2.742	.904	-5.132	5.798
	1253	6.000[b]	3.926	.131	-1.825	13.825
	1351	3.333	2.528	.191	-1.705	8.372
	1557	-.333	2.079	.873	-4.477	3.811
1557	252	2.482	1.892	.194	-1.289	6.253
	253	3.203	1.968	.108	-.719	7.125
	1251	.667	2.843	.815	-4.999	6.333
	1253	6.333[b]	3.997	.117	-1.633	14.300
	1351	3.667	2.637	.169	-1.589	8.923
	1451	.333	2.079	.873	-3.811	4.477

Based on estimated marginal means

a. Adjustment for multiple comparisons: Least Significant Difference (equivalent to no adjustments).

b. An estimate of the modified population marginal mean (J).

c. An estimate of the modified population marginal mean (I).

Table W2 shows that there is not a statistically significant difference at the .05 level between AVID and Non-AVID students on the Days Absent where p = .202.

Table W2

AVID/Non-AVID Students Statistical Significance Results for Days Absent

Pairwise Comparisons

Dependent Variable: Days Absent 2009-10

		Mean Difference			95% Confidence Interval for Difference[b]	
(I) Avid	(J) Avid	(I-J)	Std. Error	Sig.[b]	Lower Bound	Upper Bound
No	Yes	1.783[a]	1.385	.202	-.977	4.543
Yes	No	-1.783[c]	1.385	.202	-4.543	.977

Based on estimated marginal means

a. An estimate of the modified population marginal mean (J).

b. Adjustment for multiple comparisons: Least Significant Difference (equivalent to no adjustments).

c. An estimate of the modified population marginal mean (I).

Appendix X
AVID Information Sheet

AVID
Decades *of* College Dreams

AVID (Advancement Via Individual Determination) is a college-readiness system designed to increase the number of students who enroll in four-year colleges. Although AVID serves all students, it focuses on the least served students in the academic middle. The formula is simple - raise expectations of students and, with the AVID support system in place, they will rise to the challenge.

Today, AVID has been adopted by nearly 4,500 schools in 45 states, the District of Columbia and 16 countries/territories, and serves approximately 400,000 students, grades 4-12. Schools and districts have taken methodologies and strategies from the elective course and implemented them schoolwide and districtwide to impact their entire communities and create articulated programs for college success.

At the high school and middle level, AVID students are enrolled in a school's toughest classes, such as Advanced Placement®, and receive support in an academic elective class—called AVID—taught within the school day by a trained AVID teacher. In the accelerated elective class, AVID students receive support through a rigorous curriculum and ongoing, structured tutorials. AVID elective teachers support AVID students by providing academic training, managing their tutorials, working with faculty and parents, and by helping students develop long-range academic and personal plans.

Schoolwide achievement results from the professional development received by subject area teachers, counselors, administrators, district administrators, and especially through the success of the students targeted for the AVID elective. Use of AVID methodologies, such as Cornell note-taking and group collaboration, in all classes helps create a college-going culture across the campus.

AVID Elementary is a foundational program for elementary sites (grades 4-6), designed as an embedded sequential academic skills program. It is intended for non-elective, multi-subject, multi-ability level classrooms. This is the newest part of building a districtwide pipeline to create college-ready students.

What differentiates AVID from other educational reform programs is its astounding success rate. Since 1990, more than 65,300 AVID students have graduated from high school and planned to attend college. Of the 2009 AVID graduates, 92 percent planned to attend college; 60 percent to a four-year college and 32 percent to a two-year college.

For more information, visit us at
www.avid.org