

---

Student Work

---

11-1-2012

**Comparison of college/career readiness outcomes between the Advancement Via Individual Determination (AVID) program and the traditional high school academic program**

Sandra K. Day  
*University of Nebraska at Omaha*

Follow this and additional works at: <https://digitalcommons.unomaha.edu/studentwork>

 Part of the [Education Commons](#)

---

**Recommended Citation**

Day, Sandra K., "Comparison of college/career readiness outcomes between the Advancement Via Individual Determination (AVID) program and the traditional high school academic program" (2012). *Student Work*. 3475.

<https://digitalcommons.unomaha.edu/studentwork/3475>

This Dissertation is brought to you for free and open access by DigitalCommons@UNO. It has been accepted for inclusion in Student Work by an authorized administrator of DigitalCommons@UNO. For more information, please contact [unodigitalcommons@unomaha.edu](mailto:unodigitalcommons@unomaha.edu).



COMPARISON OF COLLEGE/CAREER READINESS OUTCOMES BETWEEN THE  
ADVANCEMENT VIA INDIVIDUAL DETERMINATION (AVID) PROGRAM AND  
THE TRADITIONAL HIGH SCHOOL ACADEMIC PROGRAM

By

Sandra K. Day

A DISSERTATION

Presented to the Faculty of

The Graduate College of the University of Nebraska

In Partial Fulfillment of Requirements

For the Degree of Doctor of Education

Major: Educational Administration

Under the Supervision of Dr. Peter J. Smith

Omaha, Nebraska

November, 2012

Supervisory Committee:

Dr. Jeanne L. Surface

Dr. Kay A. Keiser

Dr. C. Elliot Ostler

UMI Number: 3546621

All rights reserved

INFORMATION TO ALL USERS

The quality of this reproduction is dependent upon the quality of the copy submitted.

In the unlikely event that the author did not send a complete manuscript and there are missing pages, these will be noted. Also, if material had to be removed, a note will indicate the deletion.



UMI 3546621

Published by ProQuest LLC (2012). Copyright in the Dissertation held by the Author.

Microform Edition © ProQuest LLC.

All rights reserved. This work is protected against unauthorized copying under Title 17, United States Code



ProQuest LLC.  
789 East Eisenhower Parkway  
P.O. Box 1346  
Ann Arbor, MI 48106 - 1346

COMPARISON OF COLLEGE/CAREER READINESS OUTCOMES BETWEEN THE  
ADVANCEMENT VIA INDIVIDUAL DETERMINATION (AVID) PROGRAM AND  
THE TRADITIONAL HIGH SCHOOL ACADEMIC PROGRAM

Sandra K. Day, M.S., Ed.D.

University of Nebraska, 2012

Advisor: Dr. Peter J. Smith

This study compared selected college/career readiness outcomes for students attending an urban high school who voluntarily participated in an academic support program, Advancement Via Individual Determination (AVID), to demographically similar/same school peers who completed the traditional academic program (TAP) of study. Grade point average, rigorous curriculum, and ACT scores are universally accepted predictors of college and career readiness and were the yardsticks used in this study.

Dependent and independent *t*-tests were used to determine the significance of the difference between the student cohorts who graduated from a midwest urban high school within four years of beginning high school. Each of the 60 students met the educational and demographic profile for the typical AVID student, including those whose grade point average is between 2.0-3.5, are average test takers, and have college potential with support as well as desire and determination. In addition, this profile includes students who would be the first in their family to attend college and/or students of minority or poverty background.

Overall findings indicate that the 30 students in the AVID program were significantly more successful in completing both honors' courses ( $t(58) = 13.23, p = <.01$  (two-tailed),  $d = 3.42$ ) and Advanced Placement (AP) courses ( $t(58) = 9.61, p = <.01$  (two-tailed),  $d = 2.19$ ) over the span of their high school career. Similar significance was found in the comparison of AVID students' ACT test scores ( $t(58) = 13.64, p = <.01$  (two-tailed),  $d = 3.54$ ). In the area of GPA, AVID students' comparison from grade nine to twelve was not overall significantly higher, likely due to the increased rigor and weight of honors and AP courses taken. However, AVID students' grade twelve GPA was significantly higher than grade twelve TAP students' ( $t(58) = 2.37, p = .02$  (two-tailed),  $d = 0.63$ ).

Overall, the report indicates that students who participated in the AVID program demonstrated higher scores in the college/career readiness indicators examined. This has finding implication for schools across the country.

## ACKNOWLEDGEMENTS

The work behind this project is the combined effort of so many people. I thank and honor you all.

To my family – Kent, this project is as much yours as it is mine. Thank you for tirelessly challenging and supporting me to move forward, even in the face of our eventful home and professional lives. To our five remarkable children – thank you for understanding when family time was short. All of you stood as images of what I am working for. Each of you represents countless numbers of young people and you set goals for me that I will not stop trying to attain. But, thank goodness Kent is such a great cook.

To Dr. Smith and Dr. Kayser – who would have thought that the lunch we shared at California Taco in 2007 would have set me on this project that has in so many ways changed my professional world? And although that was not the time to start this project, the proper time did come, and I truly appreciate your constant support and encouragement throughout.

To my Committee Chair, Dr. Peter Smith – your patience and belief in my ability to complete this project was nothing short of astonishing. How you took a social studies teacher and taught her to understand statistical analysis is one for the record book. And, thanks for accommodating my symbol dyslexia.

To my Committee – whom I consider to be every professor that I have had throughout my doctoral program, your guidance on this project was nothing short of extraordinary. Over these years I have grown in ways I never thought possible.

To the educators at the study – you have truly done something noteworthy here. You have shown that schools can dramatically improve the way students are served and prepared for life after high school. This is a model for others to follow. Thank you for your authentic implementation of AVID.

## TABLE OF CONTENT

ACKNOWLEDGEMENTS.....	i
TABLE OF CONTENT.....	iii
LIST OF TABLES.....	vi
CHAPTER ONE.....	1
Introduction.....	1
Purpose of the Study.....	5
Research Questions.....	5
Assumptions of the Study.....	17
Delimitations of the Study.....	17
Limitations of the Study.....	17
Definition of Terms.....	18
Organization of the Study.....	20
CHAPTER TWO.....	21
Review of the Literature.....	21
Characteristics of Students That Leave School Prior to Graduation.....	26
Factors That Affect Student Achievement.....	28
Importance of Relationships in School.....	30
Importance of Teacher Professional Development.....	32
Achievement Gap and Opportunity Gap.....	34
Efforts to close the gap.....	36
Study Comparison Programs.....	42



High school success indicators .....	48
Grade Point Average.....	48
American College Testing Scores.....	49
Advanced Placement Course Success.....	50
CHAPTER THREE .....	53
Methodology.....	53
Purpose of the Study .....	53
Participants.....	53
Description of Procedures.....	55
Implementation of Independent Variables.....	57
Dependent Measures .....	59
Research Questions and Data Analysis.....	60
Research Questions.....	60
CHAPTER FOUR.....	73
Results.....	73
Purpose of the Study .....	73
Overarching Pretest-Posttest Achievement Research Question #1. ....	74
Overarching Pretest-Posttest Achievement Research Question #2. ....	76
Overarching Posttest-Posttest Achievement Research Question #3. ....	78
Overarching Pretest-Posttest Achievement Research Question #4. ....	80
Overarching Pretest-Posttest Achievement Research Question #5. ....	81
Overarching Posttest-Posttest Achievement Research Question #6. ....	83
Overarching Posttest-Posttest Achievement Research Question #7. ....	85

Overarching Posttest-Posttest Achievement Research Question #8.....	87
CHAPTER FIVE .....	130
Conclusions and Discussion .....	130
The Purpose of the Study.....	130
Conclusions.....	130
Discussion.....	133
Implications for Policy.....	136
Implications for Practice.....	137
Implications for Further Research .....	138
REFERENCES .....	139

## LIST OF TABLES

Table 1.....	89
<i>AVID Student Grade Point Averages Pretest/Posttest for English</i>	
Table 2.....	90
<i>AVID Student Grade Point Averages Pretest/Posttest for Science</i>	
Table 3.....	91
<i>AVID Student Grade Point Averages Pretest/Posttest for Math</i>	
Table 4.....	92
<i>AVID Student Grade Point Averages Pretest/Posttest for Social Studies</i>	
Table 5.....	93
<i>AVID Student Grade Point Averages Pretest/Posttest for Overall Courses</i>	
Table 6.....	94
<i>TAP Student Grade Point Averages Pretest/Posttest for English</i>	
Table 7.....	95
<i>TAP Student Grade Point Averages Pretest/Posttest for Science</i>	
Table 8.....	96
<i>TAP Student Grade Point Averages Pretest/Posttest Math</i>	
Table 9.....	97
<i>TAP Student Grade Point Averages Pretest/Posttest Social Studies</i>	
Table 10.....	98
<i>TAP Student Grade Point Averages Pretest/Posttest for Overall Courses</i>	
Table 11.....	99
<i>AVID and TAP Student Grade Point Averages Posttest/Posttest for English</i>	
Table 12.....	100
<i>AVID and TAP Student Grade Point Averages Posttest/Posttest for Science</i>	

Table 13.....	101
<i>AVID and TAP Student Grade Point Averages Posttest/Posttest for Math</i>	
Table 14.....	102
<i>AVID and TAP Student Grade Point Averages Posttest/Posttest for Social Studies</i>	
Table 15.....	103
<i>AVID and TAP Student Grade Point Averages Posttest/Posttest for Overall Courses Taken</i>	
Table 16.....	104
<i>AVID Student Pretest/Posttest Scale Score Results PLAN and ACT Test in English</i>	
Table 17.....	105
<i>AVID Student Pretest/Posttest Scale Score Results PLAN and ACT Test in Math</i>	
Table 18.....	106
<i>AVID Student Pretest/Posttest Scale Score Results PLAN and ACT Test in Reading</i>	
Table 19.....	107
<i>AVID Student Pretest/Posttest Scale Score Results PLAN and ACT Test in Science Reasoning</i>	
Table 20.....	108
<i>AVID Student Pretest/Posttest Scale Score Results PLAN and ACT Test Composite</i>	
Table 21.....	109
<i>TAP Student Pretest/Posttest Scale Score Results PLAN and ACT Test for English</i>	
Table 22.....	110
<i>TAP Student Pretest/Posttest Scale Score Results PLAN and ACT Test for Math</i>	
Table 23.....	111
<i>TAP Student Pretest/Posttest Scale Score Results PLAN and ACT Test for Reading</i>	
Table 24.....	112

<i>TAP Student Pretest/Posttest Scale Score Results PLAN and ACT Test for Science Reasoning</i>	
Table 25.....	113
<i>TAP Student Pretest/Posttest Scale Score Results PLAN and ACT Test for Composite</i>	
Table 26.....	114
<i>AVID and TAP Student ACT Test Scale Score Results for English</i>	
Table 27.....	115
<i>AVID and TAP Student ACT Test Scale Score Results for Math</i>	
Table 28.....	116
<i>AVID and TAP Student ACT Test Scale Score Results for Reading</i>	
Table 29.....	117
<i>AVID and TAP Student ACT Test Scale Score Results for Science Reasoning</i>	
Table 30.....	118
<i>AVID and TAP Student ACT Test Scale Score Results for Composite</i>	
Table 31.....	119
<i>AVID and TAP Student Successful Completion of Honors English Courses</i>	
Table 32.....	120
<i>AVID and TAP Student Successful Completion of Honors Science Courses</i>	
Table 33.....	121
<i>AVID and TAP Student Successful Completion of Honors Math Courses</i>	
Table 34.....	122
<i>AVID and TAP Student Successful Completion of Honors Social Studies Courses</i>	
Table 35.....	123
<i>AVID and TAP Student Successful Completion of Other Honors Courses</i>	
Table 36.....	124

*AVID and TAP Student Successful Completion of Honors Courses Overall*

Table 37.....	125
---------------	-----

*AVID and TAP Student Successful Completion of Advanced Placement English*

Table 38.....	126
---------------	-----

*AVID and TAP Student Successful Completion of Advanced Placement Science Courses*

Table 39.....	127
---------------	-----

*AVID and TAP Student Successful Completion of Advanced Placement Math Courses*

Table 40.....	128
---------------	-----

*AVID and TAP Student Successful Completion of Advanced Placement Social Studies**Courses*

Table 41.....	129
---------------	-----

*AVID and TAP Student Successful Completion of Overall Advanced Placement Courses*

## CHAPTER ONE

### Introduction

Over the past four decades, graduation completion rates have inched up only slightly higher and dropout rates have fallen to a small degree after intense and concerted efforts to improve those statistics (Chapman, Laird, Ifill, & KewalRamani, 2011). However, for Black, Hispanic, and students living in low-income families, dropout rates have not declined as much as their White and Asian counterparts and have also experienced lower high school completion rates (Chapman, et al., 2011; Darling-Hammond, 2010). Similar findings were reported by Pinkus in the 2006 publication *Who's Counted? Who's Counting?* On average 70% of students graduate from high school with a regular diploma; however, students from historically disadvantaged groups such as minority groups and those from low income families have little more than a 50% chance of finishing high school with a diploma (Pinkus, 2006). The Alliance for Excellent Education, using NCES data in an issue brief, also confirms the statistics noted above and marks a 19% gap in graduation rates between White and Asian students and Hispanic and African American students (Alliance for Excellent Education, 2011).

In this era of increased educational accountability and punitive response from the federal government for not clearing student achievement hurdles set by statute (No Child Left Behind [NCLB], 2002), educators may lose sight of the tremendous number of additional negative outcomes that accompany dropping out of high school. In many ways these negative outcomes are much more important to our society as a whole than an empty graduation frame on the wall might suggest.

One of the many negative outcomes of dropping out of high school is a loss of potential earnings annually as well as over a lifetime. The median incomes of persons ages 18-67 who had not completed high school was roughly \$25, 000 in 2009 (Chapman, et at., 2011). By comparison, the median income of persons ages 18 through 67 who completed their education with at least a high school credential, including a General Educational Development (GED) certificate, was approximately 43% higher (Chapman, et at., 2011). Over a person's lifetime, this translates into a loss of over a half million dollars in income for a person who did not complete high school compared to a person with at least a high school credential (Chapman, et at., 2011).

While those are personal income levels that will affect a young person on a daily basis, there is also a cumulative impact on society to note as well. When considering the approximate 7, 000 students who decide to drop out of high school per school day, the national and global economic implications are staggering (Levin, Belfield, Muennig, & Rouse, 2007). Estimating the amount of income that could be made by dropouts may not be an entirely scientific business, however, the Alliance for Excellent Education has attempted to project just that. In collaboration with an economic futures firm, and looking state-by-state they determined that if the students who dropped out of the Class of 2011 had graduated, the nation's economy would likely benefit from nearly \$154 billion in additional income over the course of their lifetimes (Alliance for Excellent Education, 2011).

Additional negative outcomes are associated with a lack of high school education. All of those also have a negative impact on our society as a whole. Dropouts aged 25 and older reported being in worse health than adults who are not dropouts, regardless of



income (Pleis, Ward, & Lucas 2010). Comparing those who drop out of high school with those who complete high school, the average high school dropout costs the economy approximately \$240,000 over his or her lifetime in terms of lower tax contributions, higher reliance on Medicaid and Medicare, higher rates of criminal activity, and higher reliance on welfare (Levin & Belfield 2007).

It is altogether fitting that we note the consequences of students who do not complete a high school degree. Young people who do not graduate high school experience the consequences of their decision to leave school in a very visceral way - by the slimness of their wallets. Our society and the global community are negatively impacted by a young person's decision to not complete high school by decreased earning and spending power. Our nation is further negatively impacted by the costs of social programs that are put in place as a safety net to assist low income persons and eventually families. This situation is unstable, and projections are that it will get worse. American population is expected to change dramatically over the next forty years.

The United States is expected to experience significant increases in racial and ethnic diversity over the next four decades (U.S. Census Bureau, 2010). Any country's population change is affected by a number of factors such as fertility rate, mortality, and migration. In the case of the United States, over the next four decades, projections indicate that the level of net international migration could drastically impact population growth (U.S. Census Bureau, 2010). Even if net international migration is maintained at a constant level of nearly one million, the Hispanic population is still projected to more than double between 2000 and 2050, while the size of the Asian population is projected to increase by 79% (U.S. Census Bureau, 2010). Most race groups are projected to

experience a moderate increase in size over the next four decades for all projection series. One exception to this is the non-Hispanic White alone population, which is projected to experience decline (Darling-Hammond, 2010).

From the perspective of the public school education, the very subgroups of Black, Hispanic, and children of low-income, which we are not able to graduate from high school at the same level as other students today, are expected to increase dramatically in number over the next forty years. It is imperative that we address this inequity now, quickly and efficiently not only for the sake of the students but also for the sake of society.

Educators know that what happens in the classroom is not the only factor contributing to a student not earning a diploma, but it certainly is a major factor. We have an obligation to review educational policy and practices in an effort to implement policies and programs that better prepare students for the world which they will someday inherit.

This study is a call to action to educators. This study will outline the state of affairs in education in terms of high school graduation with respect to college and career readiness. It will spotlight inequities of service to today's students. It will review national, coalition, state, and local efforts to ameliorate those inequities. It is a study of an academic support system that focuses on preparing students for matriculating into college, career, and society. And it will test the efficacy of an academic support system called Advancement Via Individual Determination (AVID) to address those factors that contribute to a student not earning a diploma.

## **Purpose of the Study**

The purpose of this study will be to compare the selected achievement outcomes of students attending an urban high school voluntarily participating in an academically supportive program, Advancement Via Individual Determination (AVID), compared to demographically similar same, school peers completing the traditional academic program (TAP) study.

## **Research Questions**

### **Overarching Pretest-Posttest Achievement Research Question #1.**

Did students who participated in the invitational AVID program and successfully completed four years of high school academic coursework ninth grade through twelfth grade lose, maintain, or improve their pretest beginning of ninth grade year overall compared to end of the twelfth grade year overall core course grade point averages on a four-point scale for (a) English, (b) science, (c) math, (d) social studies, and (e) overall?

**Sub-Question 1a.** Was there a statistically significant difference between pretest beginning of ninth grade year overall compared to posttest end of the twelfth grade year overall (a) English core course grade point averages on a four-point scale?

**Sub-Question 1b.** Was there a statistically significant difference between pretest beginning of ninth grade year overall compared to posttest end of the twelfth grade year overall (b) science core course grade point averages on a four-point scale?

**Sub-Question 1c.** Was there a statistically significant difference between pretest beginning of ninth grade year overall compared to posttest end of the twelfth grade year overall (c) math core course grade point averages on a four-point scale?

**Sub-Question 1d.** Was there a statistically significant difference between pretest beginning of ninth grade year overall compared to posttest end of the twelfth grade year overall (d) social studies core course grade point averages on a four-point scale?

**Sub-Question 1e.** Was there a statistically significant difference between pretest beginning of ninth grade year overall compared to posttest end of the twelfth grade year overall (e) overall core course grade point averages on a four-point scale?

**Analysis.** Research Sub-Questions #1a, 1b, 1c, 1d, and 1e were analyzed using dependent *t* tests to examine the significance of the difference between pretest beginning of ninth grade year overall compared to end of the twelfth grade year overall core course grade point averages on a four-point scale for (a) English, (b) science, (c) math, (d) social studies, and (e) overall for students who participated in the invitational AVID program and successfully completed four years of high school academic coursework ninth grade through twelfth grade. Since multiple statistical tests were conducted, a two-tailed .01 alpha level was employed to help control for Type 1 errors. Means and standard deviations were displayed in tables.

**Overarching Pretest-Posttest Achievement Research Question #2.** Did students who participated in the TAP program and successfully completed four years of high school academic coursework ninth grade through twelfth grade lose, maintain, or improve their pretest beginning of ninth grade year overall compared to end of the twelfth grade year overall core course grade point averages on a four-point scale for (a) English, (b) science, (c) math, (d) social studies, and (e) overall?

**Sub-Question 2a.** Was there a statistically significant difference between pretest beginning of ninth grade year overall compared to posttest end of the twelfth grade year overall (a) English core course grade point averages on a four-point scale?

**Sub-Question 2b.** Was there a statistically significant difference between pretest beginning of ninth grade year overall compared to posttest end of the twelfth grade year overall (b) science core course grade point averages on a four-point scale?

**Sub-Question 2c.** Was there a statistically significant difference between pretest beginning of ninth grade year overall compared to posttest end of the twelfth grade year overall (c) math core course grade point averages on a four-point scale?

**Sub-Question 2d.** Was there a statistically significant difference between pretest beginning of ninth grade year overall compared to posttest end of the twelfth grade year overall (d) social studies core course grade point averages on a four-point scale?

**Sub-Question 2e.** Was there a statistically significant difference between pretest beginning of ninth grade year overall compared to posttest end of the twelfth grade year overall (e) overall core course grade point averages on a four-point scale?

**Analysis.** Research Sub-Questions #2a, 2b, 2c, 2d, and 2e were analyzed using dependent *t* tests to examine the significance of the difference between pretest beginning of ninth grade year overall compared to end of the twelfth grade year overall core course grade point averages on a four-point scale for (a) English, (b) science, (c) math, (d) social studies, and (e) overall for students who participated in the TAP program and successfully completed four years of high school academic coursework ninth grade through twelfth grade. Since multiple statistical tests were conducted, a two-tailed .01

alpha level was employed to help control for Type 1 errors. Means and standard deviations were displayed in tables.

**Overarching Posttest-Posttest Achievement Research Question #3.** Did students who participated in the invitational AVID program and successfully completed four years of high school academic coursework ninth grade through twelfth grade compared to students who participated in the TAP program and successfully completed four years of high school academic coursework ninth grade through twelfth grade have congruent or different posttest end of the twelfth grade year overall core course grade point averages on a four-point scale for (a) English, (b) science, (c) math, (d) social studies, and (e) overall?

**Sub-Question 3a.** Were posttest end of the twelfth grade year overall core course grade point averages on a four-point scale for (a) English congruent or different for students who participated in the invitational AVID program and successfully completed four years of high school academic coursework ninth grade through twelfth grade compared to students who participated in the traditional academic program and successfully completed four years of high school academic coursework ninth grade through twelfth grade?

**Sub-Question 3b.** Were posttest end of the twelfth grade year overall core course grade point averages on a four-point scale for (b) math congruent or different for students who participated in the invitational AVID program and successfully completed four years of high school academic coursework ninth grade through twelfth grade compared to students who participated in the TAP and successfully completed four years of high school academic coursework ninth grade through twelfth grade?

**Sub-Question 3c.** Were posttest end of the twelfth grade year overall core course grade point averages on a four-point scale for (c) science congruent or different for students who participated in the invitational AVID program and successfully completed four years of high school academic coursework ninth grade through twelfth grade compared to students who participated in the TAP and successfully completed four years of high school academic coursework ninth grade through twelfth grade?

**Sub-Question 3d.** Were posttest end of the twelfth grade year overall core course grade point averages on a four-point scale for (d) social studies congruent or different for students who participated in the invitational AVID program and successfully completed four years of high school academic coursework ninth grade through twelfth grade compared to students who participated in the TAP and successfully completed four years of high school academic coursework ninth grade?

**Sub-Question 3e.** Were posttest end of the twelfth grade year overall core course grade point averages on a four-point scale for (e) overall congruent or different for students who participated in the invitational AVID program and successfully completed four years of high school academic coursework ninth grade through twelfth grade compared to students who participated in the TAP and successfully completed four years of high school academic coursework ninth grade?

**Analysis.** Research Sub-Questions #3a, 3b, 3c, 3d, and 3e will be analyzed using independent  $t$  tests to examine the significance of the difference between posttest end of the twelfth grade year overall core course grade point averages on a four-point scale for (a) English, (b) science, (c) math, (d) social studies, and (e) overall for students who participated in the invitational AVID program and successfully completed four years of

high school academic coursework ninth grade through twelfth grade compared to students who participated in the TAP and successfully completed four years of high school academic coursework ninth grade through twelfth grade. Since multiple statistical tests were conducted, a two-tailed .01 alpha level was employed to help control for Type 1 errors. Means and standard deviations were displayed in tables.

**Overarching Pretest-Posttest Achievement Research Question #4.** Did students who participated in the invitational AVID program and successfully completed four years of high school academic coursework ninth grade through twelfth grade lose, maintain, or improve their pretest end of the tenth grade year PLAN Test scale scores compared to posttest end of the twelfth grade year ACT Test scale scores for (a) English, (b) mathematics, (c) reading, (d) science reasoning, and (e) composite?

**Sub-Question 4a.** Was there a statistically significant difference between pretest end of the tenth grade year PLAN Test scale score compared to posttest end of the twelfth grade year ACT Test scale score for (a) English?

**Sub-Question 4b.** Was there a statistically significant difference between pretest end of the tenth grade year PLAN Test scale score compared to posttest end of the twelfth grade year ACT Test scale score for (b) mathematics?

**Sub-Question 4c.** Was there a statistically significant difference between pretest end of the tenth grade year PLAN Test scale score compared to posttest end of the twelfth grade year ACT Test scale score for (c) reading?

**Sub-Question 4d.** Was there a statistically significant difference between pretest end of the tenth-grade year PLAN Test scale score compared to posttest end of the twelfth grade year ACT Test scale score for (d) science reasoning?



**Sub-Question 4e.** Was there a statistically significant difference between pretest end of the tenth grade year PLAN Test scale score compared to posttest end of the twelfth grade year ACT Test scale score for (e) the composite?

**Analysis.** Research Sub-Questions #4a, 4b, 4c, 4d, and 4e were analyzed using dependent *t* tests to examine the significance of the difference between pretest end of the tenth grade year PLAN Test scale scores compared to posttest end of the twelfth grade year ACT Test scale scores for (a) English, (b) mathematics, (c) reading, (d) science, and (e) composite for students who participated in the invitational AVID program and successfully completed four years of high school academic coursework ninth grade through twelfth grade. Since multiple statistical tests were conducted, a two-tailed .01 alpha level was employed to help control for Type 1 errors. Means and standard deviations were displayed in tables.

**Overarching Pretest-Posttest Achievement Research Question #5.** Did students who participated in the TAP program and successfully completed four years of high school academic coursework ninth grade through twelfth grade lose, maintain, or improve their pretest end of the tenth grade year PLAN Test scale scores compared to posttest end of the twelfth grade year ACT Test scale scores for (a) English, (b) mathematics, (c) reading, (d) science reasoning, and (e) composite?

**Sub-Question 5a.** Was there a statistically significant difference between pretest end of the tenth grade year PLAN Test scale score compared to posttest end of the twelfth grade year ACT Test scale score for (a) English?

**Sub-Question 5b.** Was there a statistically significant difference between pretest end of the tenth grade year PLAN Test scale score compared to posttest end of the twelfth grade year ACT Test scale score for (b) mathematics?

**Sub-Question 5c.** Was there a statistically significant difference between pretest end of the tenth grade year PLAN Test scale score compared to posttest end of the twelfth grade year ACT Test scale score for (c) reading?

**Sub-Question 5d.** Was there a statistically significant difference between pretest end of the tenth grade year PLAN Test scale score compared to posttest end of the twelfth grade year ACT Test scale score for (d) science reasoning?

**Sub-Question 5e.** Was there a statistically significant difference between pretest end of the tenth grade year PLAN Test scale score compared to posttest end of the twelfth grade year ACT Test scale score for (e) the composite?

**Analysis.** Research Sub-Questions #5a, 5b, 5c, 5d, and 5e were analyzed using dependent *t* tests to examine the significance of the difference between pretest end of the tenth grade year PLAN Test scale scores compared to posttest end of the twelfth grade year ACT Test scale scores for (a) English, (b) mathematics, (c) reading, (d) science, and (e) composite for students who participated in the TAP program and successfully completed four years of high school academic coursework ninth grade through twelfth grade. Since multiple statistical tests were conducted, a two-tailed .01 alpha level was employed to help control for Type 1 errors. Means and standard deviations were displayed in tables.

**Overarching Posttest-Posttest Achievement Research Question #6.**

Did students who participated in the invitational AVID program and successfully

completed four years of high school academic coursework ninth grade through twelfth grade compared to students who participated in the TAP program and successfully completed four years of high school academic coursework ninth grade through twelfth grade have congruent or different posttest end of the twelfth grade year ACT Test scale scores for (a) English, (b) mathematics, (c) reading, (d) science, and (e) composite?

**Sub-Question 6a.** Were posttest end of the twelfth grade year ACT Test scale scores for (a) English congruent or different for students who participated in the invitational AVID program and successfully completed four years of high school academic coursework ninth grade through twelfth grade compared to students who participated in the TAP program and successfully completed four years of high school academic coursework ninth grade through twelfth grade?

**Sub-Question 6b.** Were posttest end of the twelfth grade year ACT Test scale scores for (b) mathematics congruent or different for students who participated in the invitational AVID program and successfully completed four years of high school academic coursework ninth grade through twelfth grade compared to students who participated in the TAP program and successfully completed four years of high school academic coursework ninth grade through twelfth grade?

**Sub-Question 6c.** Were posttest end of the twelfth grade year ACT Test scale scores for (c) reading congruent or different for students who participated in the invitational AVID program and successfully completed four years of high school academic coursework ninth grade through twelfth grade compared to students who participated in the TAP program and successfully completed four years of high school academic coursework ninth grade through twelfth grade?

**Sub-Question 6d.** Were posttest end of the twelfth grade year ACT Test scale scores for (d) science congruent or different for students who participated in the invitational AVID program and successfully completed four years of high school academic coursework ninth grade through twelfth grade compared to students who participated in the TAP program and successfully completed four years of high school academic coursework ninth grade through twelfth grade?

**Sub-Question 6e.** Were posttest end of the twelfth grade year ACT Test scale scores for (e) composite congruent or different for students who participated in the invitational AVID program and successfully completed four years of high school academic coursework ninth grade through twelfth grade compared to students who participated in the TAP program and successfully completed four years of high school academic coursework ninth grade through twelfth grade?

**Analysis.** Research Sub-Questions #6a, 6b, 6c, 6d, and 6e were analyzed using independent *t* tests to examine the significance of the difference between the posttest end of the twelfth grade year ACT scale scores for (a) English, (b) mathematics, (c) reading, and (d) science for students who participated in the invitational AVID program and successfully completed four years of high school academic coursework ninth grade through twelfth grade compared to students who participated in the TAP program and successfully completed four years of high school academic coursework ninth grade through twelfth grade. Since multiple statistical tests were conducted, a two-tailed .01 alpha level was employed to help control for Type 1 errors. Means and standard deviations were displayed in tables.

**Overarching Posttest-Posttest Achievement Research Question #7.** Did students who participated in the invitational AVID program and successfully completed four years of high school academic coursework ninth grade through twelfth grade compared to students who participated in the TAP program and successfully completed four years of high school academic coursework ninth grade through twelfth grade have congruent or different posttest end of the twelfth grade year successful completion of cumulative honors courses in (a) English, (b) science, (c) math, (d) social studies, (e) other, (e) other, and (f) overall?

**Analysis.** Research Question #7 was analyzed using independent *t* tests to examine the significance of the difference between posttest end of the twelfth grade year overall successful completion of cumulative honors courses in (a) English, (b) science, (c) math, (d) social studies, (e) other, and (f) overall for students who participated in the invitational AVID program and successfully completed four years of high school academic coursework ninth grade through twelfth grade compared to students who participated in the TAP program and successfully completed four years of high school academic coursework ninth grade through twelfth grade. Since multiple statistical tests were conducted, a two-tailed .01 alpha level was employed to help control for Type 1 errors. Means and standard deviations were displayed in tables.

**Overarching Posttest-Posttest Achievement Research Question #8.** Did students who participated in the invitational AVID program and successfully completed four years of high school academic coursework ninth grade through twelfth grade compared to students who participated in the TAP program and successfully completed four years of high school academic coursework ninth grade through twelfth grade have

congruent or different posttest end of the twelfth grade year successful completion of cumulative Advanced Placement courses in (a) English, (b) science, (c) math, (d) social studies, and (e) overall?

**Analysis.** Research Question #8 was analyzed using independent *t* tests to examine the significance of the difference between posttest end of the twelfth grade year overall successful completion of cumulative Advanced Placement courses in (a) English, (b) science, (c) math, (d) social studies, and (e) overall for students who participated in the invitational AVID program and successfully completed four years of high school academic coursework ninth grade through twelfth grade compared to students who participated in the TAP program and successfully completed four years of high school academic coursework ninth grade through twelfth grade. Since multiple statistical tests were conducted, a two-tailed .01 alpha level was employed to help control for Type 1 errors. Means and standard deviations were displayed in tables.

### **Importance of the Study**

This study provides research driven strategies for each of the stakeholders in increasing student achievement so that each can actively participate in the academic success of the student. By incorporating stakeholders and providing each with strategies for success, the achievement gap can be bridged. Research proven strategies, with stakeholder support, increase the chances for success for students who otherwise would not have that chance. The formula does exist to improve achievement and for students who otherwise would not have a chance, this program provides a proven method for success.

**Assumptions of the Study**

All teachers at the research school have received professional development in the area of best practices for instruction as a part of the overall professional development plan at both the school and district levels. Teachers have participated in workshops focused on differentiated instruction, using block instruction time effectively, cooperative learning, and culturally responsive teaching. All educators who teach and or support AVID students have been trained in the two year scope and sequence required for certification of the program (AVID, 2012). The research school received its initial AVID certification in 2009 and has been re-certified each year (AVID, 2012).

**Delimitations of the Study**

The study is delimited to twelfth grade students who were in the graduating classes of 2011 and 2012 at one magnet high school in an urban school district. These students were in attendance either from the fall of 2007 to the spring of 2011 or were in attendance from the fall of 2008 to the spring of 2012. Students completed all assessments that took place during the ninth grade and twelfth grade. Data related to achievement was collected routinely throughout school years included in the study. Study findings were limited to students who received and accepted an invitation to AVID and those who were randomly and demographically matched to the participating AVID students.

**Limitations of the Study**

The sample for this study was confined to twelfth grade students ( $N = 60$ ) who did or did not attend the AVID program. The limited sample size may limit the utility and generalizability of the study results and findings.

## **Definition of Terms**

**Achievement.** Achievement is defined as the level of accomplishment that a student demonstrates through the completion of school related tasks and activities.

**Achievement gap.** Achievement gap in education refers to the disparity in academic performance between groups of students. Achievement gaps can be found in grades, assessments, graduation rates, and college completion rates. Groups compared are often based race, ethnicity, and poverty.

**Advanced Placement courses.** Advanced Placement (AP) courses are college level courses available to students in high school (College Board, 2012).

**American College Test (ACT).** The ACT test is a national college admission examination that measures academic competency in a variety of areas such as: mathematics, science, reading, and social studies.

**AVID.** Advancement Via Individual Determination, AVID, is an elementary through postsecondary college readiness system that is designed to increase school wide learning and performance. This system seeks to place underserved student populations such as students of poverty, racial minority, and students whose first language is not English, into honors and advanced courses. Students are also given the AVID Elective class for support in these rigorous classes (AVID, 2012).

**AVID Strategies.** AVID strategies are a defined set of teaching methods emphasizing best practices in writing, inquiry, collaboration, and reading (WICR) across the curriculum. These strategies are used in the AVID Elective Class as well as throughout the content areas.



**Assessment.** Assessment is defined as a process of collecting data for the purposes of making decisions about individuals and groups.

**Block Scheduling (4X4).** The high school in this study utilized a 4X4 block schedule. In this schedule, students take four instead of six classes each quarter. Each year-long class only meets for one semester. Each semester class only meets for a quarter.

**Core Course Grades.** These are letter grades awarded to the subjects math, science, social studies, and English.

**Engagement.** Engagement is defined as students being focused on and actively participating in learning and assessment experiences.

**Grade point average (GPA).** Grade point average is defined as the average on a scale of 4.0 of the grades received by a student throughout a school year.

**Letter grades.** Achievement awarded based on the letters A, B, C, D, and F, where A is the highest level to be awarded and F is the lowest.

**PLAN Test.** This test contains four subtests: English, mathematics, reading, and science. These tests are designed to measure students' curriculum-related knowledge and the complex cognitive skills important for future education and careers. Scores range from 1 to 32. The PLAN test is second in the series offered by American College Testing (ACT) that helps schools identify college/career readiness (.

**Successful course completion.** Completion of a course with the letter grade of "C" or better.

**Traditional Academic Program.** The traditional academic program (TAP) refers to the high level of academic instruction delivered to every student in the Midwest high school involved in this study. This program of study includes the core courses: English,

mathematics, science, and social studies. These courses plus elective offerings must total 49 credits in order to earn a high school diploma from this school district (N. Bond, personal communication, December 1, 2011).

### **Organization of the Study**

The literature review relevant to this study is presented in Chapter 2. Chapter 3 describes the research design, methodology, and procedures that were used to gather and analyze the data of the study. Chapter 4 reports the research results and findings-- including data analysis, tables, and descriptive statistics. Chapter 5 provides conclusions and a discussion of the research findings.

## CHAPTER TWO

### Review of the Literature

Over the past four decades, graduation completion rates have inched up only slightly higher and dropout rates have fallen to a small degree after intense and concerted efforts to improve those statistics (Chapman et al., 2011). However, for Black, Hispanic, and students living in low-income families, dropout rates have not declined as much as their White and Asian counterparts and have also experienced lower high school completion rates (Chapman et al., 2011; Darling-Hammond, 2010). Similar findings were reported by Pinkus in the 2006 publication *Who's Counted? Who's Counting?* On average 70% of students graduate from high school with a regular diploma; however, students from historically disadvantaged groups such as minority groups and those from low income families have little more than a 50% chance of finishing high school with a diploma (Pinkus, 2006). The Alliance for Excellent Education, using NCES data in an issue brief, also confirms the statistics noted above and marks a 19% gap in graduation rates between White and Asian students and Hispanic and African American students (Alliance for Excellent Education, 2011).

In this era of increased educational accountability and punitive response from the federal government for not clearing student achievement hurdles set by statute (No Child Left Behind [NCLB], 2002), educators may lose sight of the tremendous number of additional negative outcomes that accompany dropping out of high school. In many ways these negative outcomes are much more important to our society as a whole than an empty graduation frame on the wall might suggest.

One of the many negative outcomes of dropping out of high school is a loss of potential earnings annually as well as over a lifetime. The median incomes of persons ages 18-67 who had not completed high school was roughly \$25, 000 in 2009 (Chapman, et al., 2011). By comparison, the median income of persons ages 18 through 67 who completed their education with at least a high school credential, including a General Educational Development (GED) certificate, was approximately 43% higher (Chapman, et al., 2011). Over a person's lifetime, this translates into a loss of over a half million dollars in income for a person who did not complete high school compared to a person with at least a high school credential (Chapman, et al., 2011).

While those are personal income levels that will affect a young person on a daily basis, there is also a cumulative impact on society to note as well. When considering the approximate 7, 000 students who decide to drop out of high school per school day, the national and global economic implications are staggering (Levin, et al., 2007).

Estimating the amount of income that could be made by dropouts may not be an entirely scientific business, however, the Alliance for Excellent Education has attempted to project just that. In collaboration with an economic futures firm, and looking state-by-state they determined that if the students who dropped out of the Class of 2011 had graduated, the nation's economy would likely benefit from nearly \$154 billion in additional income over the course of their lifetimes (Alliance for Excellent Education, 2011).

Additional negative outcomes are associated with a lack of high school education. All of those also have a negative impact on our society as a whole. Dropouts aged 25 and older reported being in worse health than adults who are not dropouts, regardless of

income (Pleis et al., 2010). Comparing those who drop out of high school with those who complete high school, the average high school dropout costs the economy approximately \$240,000 over his or her lifetime in terms of lower tax contributions, higher reliance on Medicaid and Medicare, higher rates of criminal activity, and higher reliance on welfare (Levin & Belfield 2007).

It is altogether fitting that we note the consequences of students who do not complete a high school degree. Young people who do not graduate high school experience the consequences of their decision to leave school in a very visceral way - by the slimness of their wallets. Our society and the global community are negatively impacted by a young person's decision to not complete high school by decreased earning and spending power. Our nation is further negatively impacted by the costs of social programs that are put in place as a safety net to assist low income persons and eventually families. This situation is unstable, and projections are that it will get worse. American population is expected to change dramatically over the next forty years.

The United States is expected to experience significant increases in racial and ethnic diversity over the next four decades (U.S. Census Bureau, 2010). Any country's population change is affected by a number of factors such as fertility rate, mortality, and migration. In the case of the United States, over the next four decades, projections indicate that the level of net international migration could drastically impact population growth (U.S. Census Bureau, 2010). Even if net international migration is maintained at a constant level of nearly one million, the Hispanic population is still projected to more than double between 2000 and 2050, while the size of the Asian population is projected to increase by 79% (U.S. Census Bureau, 2010). Most race groups are projected to

experience a moderate increase in size over the next four decades for all projection series. One exception to this is the non-Hispanic White alone population, which is projected to experience decline (Darling-Hammond, 2010).

From the perspective of the public school education, the very subgroups of Black, Hispanic, and children of low-income, whom we are not able to graduate from high school at the same level as other students today, are expected to increase dramatically in number over the next forty years. It is imperative that we address this inequity now, quickly and efficiently not only for the sake of the students but also for the sake of society.

### **Overview of Student Achievement Gap**

The issue of student achievement gap is multifaceted, as realistically thinking individuals consider it to be a product or symptom of various societal issues. Factors such as home and family environment, the world economy, and policy and law combine with cultural of the school environment to effect change on the issue of the achievement gap (Gardner, 2007; Orr, 2003; Boykin & Bailey, 2000). Yet school authorities have not shied away from attempting to make appropriate organizational changes within the school to address the issue. Efforts such as fine tuning strategic planning, targeted professional development, improving assessment methods and tools, and providing more time in the school day to assist struggling learners are examples of these efforts (Lee, 2002). And, yet, the gap persists (NCES, 2011). This research project is based on the AVID (Advancement Via Individual Determination) program. AVID specifically targets students who are most identified with the gap-students of poverty, minority status, and/or students whose first language is not English (AVID, 2011).

The student achievement gap relates to significant disparities on certain educational measures between the academic achievement of students determined by racial, ethnic, and socioeconomic characteristics. The achievement gap usually is reflected in standardized test scores, dropout rates, and enrollment into college (Ramirez & Carpenter, 2005). The achievement gap has become an issue of national concern over the past several decades (Aud et al., 2011). Different political and social groups have demonstrated persistent efforts to close this gap in order to provide transparency and extensive accountability of educational institutions (Gardner, 2007).

Researchers have outlined significant concerns in their exploration into the causes of student achievement gap (Ramirez & Carpenter, 2005). It has been shown that students who lack extensive parental involvement tend to present lower academic achievement compared to their peers having better resources. Other scholars note that the achievement gap is closely associated with race and socioeconomic status (Lee, 2002). For instance, children from a poorer family background are prone to lower academic achievement due to unavailable or inadequate educational resources (Noguera, 2003).

Some researchers indicate that a series of subtle factors contribute to the achievement gap such as negative stereotypes, peer pressure, and test bias (Ramirez & Carpenter, 2005). Likewise, research has demonstrated that learners from a disadvantaged group perform below average on standardized tests especially when they encounter unfavorable, negative stereotypes regarding the group to which they belong. It also appears that the general high-stakes specificity of standardized tests contributes to high levels of performance anxiety among students (Lee & Bowen, 2006). Schools have adopted different strategies and methods to eliminate student achievement gap in order to

enhance the academic performance of all groups of students. Certain reform recommendations include decreasing class sizes, supporting early childhood programs, and increasing academic standards (Kannapel, Clemments, Taylor, & Hibpshman, 2005).

The achievement gap is mostly used to describe the emerging performance gaps between African-American and Hispanic students versus non-Hispanic White students (Lee, 2002). Certain national initiatives, including that of the No Child Left Behind Act of 2001, demonstrated focus on decreasing or eliminating student achievement gap. Even though educational interventions have become more targeted, this has not contributed to a significant decrease of this gap (Kober, 2001). Black and Hispanic students have persistently struggled to improve their performance in reading and mathematics (Lee & Bowen, 2006). Student achievement gap is mostly evident in these two ethnic groups and students of poverty (Aud et al., 2011). Thus, educational reforms need to embrace the issues that surround these student groups.

### **Characteristics of Students That Leave School Prior to Graduation**

Students that leave school prior to graduation represent a serious concern to educators and school authorities in the 21<sup>st</sup> century. This area has been heavily researched in order to devise a proper educational policy in the United States (Soderberg, 1988). Major reported characteristics of students that leave school prior to graduation include race, ethnicity, age, family income, and a certain geographic region. Students at risk represent all socioeconomic levels, but it has been shown that children from poor and single parent backgrounds tend to leave school prior to high school graduation (Rumberger & Thomas, 2000). Certain categories pertaining to the characteristics of learners that leave school prior to graduation are presented in the following subsections.



### ***Ethnicity Data***

Ethnicity also plays a crucial role in the decision of students to leave school prior to graduation. It appears that Hispanic students illustrate the highest rate of drop out of high school compared to other ethnic groups such as Native Americans, African Americans, and Whites (Darling-Hammond, 2010). Hispanic learners tend to leave school at a quite early phase because they report that they feel an inappropriate attitude toward their ethnic group. Main reasons for the occurrence of this phenomenon of Hispanic students include a decision to move, a potential marriage, or a pregnancy (Soderberg, 1988). High school dropouts tend to demonstrate quite poor mental and physical health, as this trend has been associated with the factor of ethnicity. Moreover, there is a greater likelihood of committing crimes among particular ethnic groups, including that of Hispanics. It has been demonstrated that dropout rates are higher for Hispanic, Black, and Native American males compared to Whites and Asians (Rumberger, & Thomas, 2000).

### ***Socioeconomic Factors***

As it has already been indicated, the impact of socioeconomic factors on student performance has categorically emerged. School dropouts are usually associated with extremely high unemployment levels, insignificant income, and quite poor health outcomes. In a study by Rumberger and Thomas (2000), the researchers find that females tend to receive less educational opportunities compared to males, and thus females tend to drop out of school quite early. Early marriages may also influence students' decision to leave school prior to graduation (Darling-Hammond, 2010).

Furthermore, it is important to mention that parental education has a significant impact on children, which implies that children of less educated parents tend to drop out of school on a regular basis.

### ***Family Data***

Family backgrounds turn out to present a significant influence on the decision of students to drop out of school prior to graduation. Researchers indicate three aspects of families such as family structure, family resources, and family practices (Darling-Hammond, 2010; Murphy, 2009). It seems that students who live with both parents have quite low dropout rates and higher graduation rates. Certain changes in family structure (a family move, disease, death, and persistent marital disruptions) increase the probability that students will leave school prior to graduation (Rumberger & Thomas, 2000). In addition, students with fewer family resources tend to drop out of school more frequently. A series of parental practices generally have a negative effect on children who may consider the option of drop out of school (Dee, 2007). These practices mainly relate to a lack of monitoring of children's progress at school, as well as to insufficient communication with the school on the part of parents, and unreliable parental aspirations for their children.

### **Factors That Affect Student Achievement**

Numerous factors have been found to that affect student achievement. Four categories of factors usually affect student achievement such as school, the family and the individual, social incentives, and socioeconomic conditions (Barton & Coley, 2010). One of the persistent school factors that have been found to impede student achievement is that of tracking, which refers to the practice of grouping students based on

demonstrated skills and abilities (Oakes, 2000; Venkatakrishnan & Wiliam, 2003). Moreover, researchers suggest that class size is an essential factor that affects student achievement (Darling-Hammond, 2010). From this perspective, decreased class sizes can significantly improve student achievement because of the extensive attention on the individual.

Research on the effect of the school-size factor shows that embracing a small school strategy may serve as an influential school improvement platform (Kober, 2001). In attempts to introduce certain criteria for a small size of the respective school, scholars present a categorical view that a size of approximately 300-400 students is appropriate for an elementary school, whereas a size of 400-800 students is mostly suitable for a secondary school (Murphy, 2009; Barton, Coley, 2010). Student achievement in small schools appears at least equal and frequently superior to student achievement levels in larger schools. Students also tend to learn in a more meaningful way when they are involved in real and appropriate classroom activities (Boaler, 2002).

Social incentives and socioeconomic conditions are important factors that affect student achievement to a huge extent. Extensive social support is crucial for enhancing student achievement, as the emphasis is on strengthening various social relationships among students and adults (Williams, et al., 2005). Social incentives that support student achievement include assistance from individuals, social groups, or communities. Social incentives obviously create solid motivation for students to achieve because they build adequate confidence and a sense of self among learners (Arias & Walker, 2004). As it has been previously outlined, the importance of socioeconomic factors is undoubted for the development of motivation among students to achieve (Darling & Hammond, 2010).

Learners coming from quite affluent families tend to have greater learning resources and opportunities, which sets them in a favorable situation to demonstrate better academic achievements.

### **Importance of Relationships in School**

The importance of the impact of relationships in school on student achievement cannot be stressed enough. This applies to teacher-student relationships as well as student-student relationships. In the recent publication, *Silent Epidemic*, 500 high school dropouts were surveyed about the reasons that they elected not to finish school and what if anything could have kept them in school. Two-thirds, indicated that had they had at least one adult in the school that they could confide in, it would have made a difference (Bridgeland, Dilulio, & Burke-Morison, 2006). The importance of relationships in school is partly due to the fact that peer acceptance is associated with a certain social status or popularity within a given group of students (Opdenakker & Van Damme, 2001). Positive relationships in school can definitely promote engagement with relevant school activities. The student-teacher relationship is quite important for enhancing mutual trust, understanding, and loyalty in educational interactions (Darling-Hammond, 2010). It is clear that individuals learn from people they respect, which implies that the establishment of positive and reinforcing relationships in school is crucial (Lareau, 1987).

Researchers have indicated that the importance of school relationships reflect in extensive communication between teachers and students, as well as in respect shown in the classroom (Opdenakker & Van Damme, 2001). Students possess different styles for learning. Despite the differences in learning styles and varying aspects of student motivation, the major role of teachers is to ensure continuous monitoring of students

(Pomeroy, 1999). In this way, educators can identify certain difficulties encountered by learners and can demonstrate a thorough understanding of their learning problems.

Once teachers reach this stage at the interactive process with students, it is apparent that they can establish the solid bases of reinforcing school relationships based on open and transparent communication. A main precondition for the successful development of relationships in school relates to teachers' consideration of students' different cultures and backgrounds (Opdenakker & Van Damme, 2001). From this perspective, teachers have a viable opportunity to comprehend the specific sense of belonging of students, which can contribute to building greater trust, self-confidence, and self-worth among poor and minority students who have been found to underperform academically (Pomeroy, 1999). When teachers demonstrate a better understanding of students' respective culture, it can serve to enhance communication between teachers and students. Some researchers find that the risk of academic failure may be higher for certain minority groups who prefer specific cultural modes of achievement rather than mainstream cultural achievement modes (Williams et al., 2005).

In the process of developing school relationships, educators who demonstrate respect toward their learners succeed in having quite active learners in the classroom. It is important to show a relevant sense of control over students in order to avoid certain misunderstanding, confusion, or frustration while performing typical educational activities (Lareau, 1987). Important characteristics of positive relationships in school amount to treating both teachers and students with respect, kindness, and tolerance. Although teachers are encouraged to demonstrate their warmth toward students on a regular basis, it is essential to note that similar friendly attitudes should be with realistic

limits so that students can ensure better academic achievements (Opdenakker & Van Damme, 2001).

### **Importance of Teacher Professional Development**

Increased academic achievement is also aligned with effective teacher professional development. Teachers are expected to demonstrate teaching proficiency in the classroom as result of pressure for higher test scores and compliance with new federal requirements (Little, 1993; NCLB, 2002). The increased focus on professional development can be seen as a means to support overall educational effectiveness. Illustrating a high level of teaching competency as teachers gain increased experience and explore their teaching in a systematic manner is the essence of effective teacher professional growth. (Garet, Desimone, Birman & Yoon, 2001). In general, teacher professional development includes formal experiences (mentoring, professional meetings, etc.) and informal experiences (reading professional publications, watching relevant television documentaries, etc.).

Teacher professional development has been perceived as an ongoing process represented by certain opportunities that can promote growth and development in the teaching profession (Lawless & Pellegrino, 2007). The new perspective of teacher professional development is based on constructivism, which implies that teachers emerge as active learners thoroughly engaged in the activities of teaching, assessment, feedback, and reflection. The fact that teacher professional development has been considered a long-term process is indicative of the prevailing in literature assumption that teachers learn over time (Garet et al., 2001). The process of teacher professional development can

also be defined as directly linked to school reform because it focuses on culture building and skill training (Ross & Bruce, 2007).

A common perception of professional development of teachers is that these are reflective practitioners entering the teaching profession with a particular knowledge base, but at the same time, it is expected that teachers will gradually acquire new knowledge and relevant teaching skills based on that previous knowledge (Little, 1993). Therefore, the specific role of professional development is to reinforce teachers in the process of building new, appropriate pedagogical practices. From this perspective, professionals in the field consider professional development as a collaborative process based on quite meaningful interactions within school settings (Lawless & Pellegrino, 2007). Teacher professional development can be quite different in diverse settings in the sense that there is not a single model of professional development considered better from other models (Darling-Hammond, 2007). Regardless, in a 2007 meta-analysis published by the U.S. Department of Education, found that teachers who receive substantial professional development can boost their students' achievement over 20 percentile points (Yoon, Duncan, Lee, Scarloss, and Shapley, 2007).

It is fundamental that schools and educators constantly evaluate their specific needs, cultural beliefs, and assumptions pertaining to their respective situation (Little, 1993). In this way, school structure and school culture can significantly affect teacher professional development and effectiveness, which can additionally facilitate their professional motivation. School authorities need to identify and plan professional development processes for teachers accordingly in order to attain optimal results (Garet et al., 2001). Since the national focus is on building and enhancing teacher capacities so

that they can provide adequate guidance and support to poor and minority students, with the purpose to reduce student achievement gap, professional development opportunities must be customized for that purpose.

Research suggests that teacher professional development should be viewed and developed from a different angle, namely a customized approach (Lawless & Pellegrino, 2007) and one that is career-long in its vision (Darling-Hammond, 2000). University-based scholars tend to generate formal knowledge for teachers to use in order to begin their practice (Little, 1993). While knowledge embedded in practice actually emerges as a guiding principle in teacher professional development, career-long improvement of the teaching practice must be augmented by the teacher experience in the classroom (McRobbie, 2000).

### **Achievement Gap and Opportunity Gap**

The literature review finds that the Opportunity gap itself as having two distinct definitions – one well noted by researchers Akiba, LeTrendre, and Scribner. Strategies to address this later gap would in essence shift the focus of the problem from students who lack to structures that deny (Fine et al., 2005). Some researchers demonstrate a belief that educational institutions have not generated significant progress in corresponding to achievement disparities simply because the focus has been in the wrong area, in particular the achievement gap (Slavin & Madden, 2006). Serving all students more equitably requires that educators consider certain gaps in the specific way they are teaching, or in other words, they pay adequate attention to the opportunity gap. By opportunity, researchers imply that there are substantial differences between students in terms of their exposure and experiences (Ladson-Billings, 2007). The latter include economic



resources, teacher professional development and qualifications for teaching, as well as teacher expectations and parental involvement.

Similar factors turn out to play a key role in identifying the importance of the opportunity gap when dealing with diverse, underperforming students. The identification of an achievement or an opportunity gap has also been challenged by the practice of tracking in schools (Murphy, 2009). It appears that the tracking system directly perpetuates student inequalities of race and gender. The implementation of tracking in schools usually leads to a situation in which poor and minority students are restricted in their access to qualitative resources and programs (Slavin & Madden, 2006). Their learning opportunities have been insignificant, as in lower track classes, learners actually remain unchallenged in the sense of being subjected to extensive repetitive elements of the curriculum. It is clear that the practice of tracking students into the lower ability group significantly impedes learner opportunities for academic growth and development. For that reason, researchers are unanimous that educators need to be quite active in the de-tracking process so that they can enhance learners to succeed (Murphy, 2009; Slavin & Madden, 2006).

The utmost goal is to make sure that all students in highly diverse school settings succeed. In order to achieve this goal, school authorities should reframe the problem as an opportunity gap, which is associated with addressing inequality (Dee, 2007). This reframing of the problem also indicates the way in which race affects the process of learning, rather than placing extensive importance on test scores. Instead of attempting to close the gap by focusing on testing skills, educators can consider the significance of

training opportunities in the sense of perceiving complex learning issues as a school, collaborating team.

The identification of the opportunity gap implies that educators are concerned with the specific structures that create opportunity (Akiba, et al., 2007). Schools need to be perceived as unique places where individuals express their willingness to belong. By refocusing on the opportunity gap, school authorities demonstrate relevant efforts to underline the participatory and democratic nature of school settings (Dee, 2007). Scholars indicate that when educators explicitly address the issue of race in education, as well as when they present significant opportunities to engage all students fully, this creates opportunities, and the achievement gap simply does not exist (Akiba, et al., 2007). This shows a holistic and flexible approach toward understanding the contemporary bases of the educational system.

### **Efforts to close the gap**

A major concern for educators in the 21<sup>st</sup> century is how to increase achievement for all students. The general idea of schooling is associated with an assumption that teachers are ultimately responsible for making sure that students learn a particular subject matter (Arias & Walker, 2004). In other words, educators should perceive students as individual learners with their distinct learning styles, preferences, and abilities. Therefore, teachers need to differentiate their instruction so that learners can meet the stated standards for academic achievement (Murphy, 2009). It is important to introduce a clear, efficient vision for student learning, as this should become an inseparable part of the school improvement agenda. Educational leaders should focus their efforts on improving learning and achievement for all students (Darling-Hammond, 2010).

Achievement can be improved for all students if school leaders adopt an approach that emphasizes learning more than teaching.

Relevant practices to improve achievement for all students include aligned and differentiated curriculum, formative assessments, co-teaching, appropriate data analysis, and performance-based classrooms (Tyack & Tobin, 1994). Focus on achievement should be optimal, as all students demonstrate the relevance of particular educational targets or plans for improvement. Furthermore, school leaders need to set up a distinct culture in which learners can share those aspects they are good at. Standards and expectations should be rather clear, and teachers need to praise students for adequate academic accomplishments (Dee, 2007). Being engaged in instruction is a reliable precondition for improved achievement for all students. It is crucial to plan carefully for student learning so that it can occur at the right pace.

Increasing achievement for all students is also associated with the promotion of a standards-based curriculum that entirely focuses on learning (Darling-Hammond, 2010). Student achievement should be adequately supported by open communication and data analysis. Instruction should ensure a differentiated approach and elements of co-teaching (Arias & Walker, 2004). It is fundamental that all students are presented with a challenging curriculum. Reliable research evidence demonstrates that almost all learners can achieve at rather high levels if they are taught with high instructional standards (Lee & Bowen, 2006). At the same time, it is clear that some students require more resources, time, and specific instruction in order to achieve better.

Likewise, educators need to identify certain barriers to student achievement, as this will help professionals in the field devise rigorous curriculum for all students

(Lawless & Pellegrino, 2007). The leading idea should be to prepare students for college, and from this perspective, student achievement emerges as the result of good classroom management. Appropriate classroom management reflects in teacher practices that govern the process of student learning (Darling-Hammond, 2010). What educators do in the classroom to structure a relevant learning environment is crucial for increasing student achievement. Schools need to be organized in such a way that corresponds to the perception of what students should achieve throughout the course of their education.

Certain procedures and routines should be adequately present within the classroom in order to contribute to increasing achievement for all students (Dee, 2007). When teachers demonstrate good classroom management skills, then preconditions for success in terms of student achievement are evident. Other practices that contribute to increasing achievement for all students amount to proper staff development and computer-assisted instruction (Murphy, 2009). The latter represents an extensive development resulting from the technological revolution of the 21<sup>st</sup> century. Important features of schools that increase achievement for all students include accurate and high standards, multidimensional changes, leadership skills, collaboration, and committed teachers (Darling-Hammond, 2010). Clearly, the creation of quality schools is a challenging process that requires adequate recognition of increased student achievement.

Several dozen federal, state and local initiatives designed to improve student achievement by focusing on college readiness have been developed over the past two decades. For the purposes of this literature review, three from each level will be reviewed.

### *National Coalitions*

The Common Core Standards Initiative is currently exercised in 43 states and is steered by the National Governors Association and the Council of Chief State School Officers (Common Core Standards Initiative, 2012). This initiative looks to align various state curricula to common academic standards in order to promote and assess academic preparedness. Schools having high expectations for all students in order to improve achievement across the board is a belief of education leaders such as Darling-Hammond, Dee, and many others. The Common Core Standards essential focus on English language arts and math content knowledge and skills, creating a critical foundation for college readiness (Common Core Standards Initiative, 2012). Although the state in this study has not adopted Common Core standards, increased national focus from this coalition could tip the scale for adoption.

The American Diploma Project (ADP) is a network of 35 states which educates 85% of all United States public school students (Achieve, 2012). ADP is committed to four actions which will increase knowledge and skills for career and college readiness. The four actions are: 1. to align standards and assessments to knowledge and skills required for college and career readiness; 2. to assure that student are prepared for postsecondary education, graduation requirements would be established requiring all students to complete college/career readiness coursework; 3. to develop statewide assessments anchored to college and career expectations; and 4. to create a comprehensive accountability and reporting system that promotes college/career readiness for all students (Achieve, 2012).

The Partnership for Assessment of Readiness for College and Careers (PARCC) is a partnership to develop a K-12 assessment system to be administered during the 2014-15 academic year (Partnership for Assessment of Readiness for College and Careers, 2012). The system will be designed to guide all students to be college and career ready by evaluating all Common Core Standards from third grade through high school. This 24-state consortium has received funding from the U.S. Department of Education's Race to the Top competition (U.S. Department of Education, 2012). This fact is significant in that it demonstrates investment from the federal level.

### ***Federal TRIO Programs***

Federal TRIO Programs are Federal outreach programs designed to provide service for students from disadvantaged backgrounds (U.S. Department of Education, 2012). TRIO includes eight programs targeted to serve and assist low-income individuals, first-generation college students, and individuals with disabilities to progress through the academic pipeline from middle school to post-baccalaureate programs (U.S. Department of Education, 2012.) This targeted population carries the same demographics as students noted above as being most closely affected by the achievement and/or opportunity gaps. Upward Bound may be one of the most easily recognized of the Federal TRIO programs. Upward Bound programs are located at the college level and serve qualified students through pre-college workshops and mentoring programs. Students are also provided with supplementary tutoring and counseling services (Upward Bound Program, 2012).

Gaining Early Awareness and Readiness for Undergraduate Programs, or GEAR UP, is another Federal initiative program designed to address achievement and or

opportunity gap concerns for students (GEAR UP, 2012). GEAR UP seeks to address the issues related to high poverty middle and high school students who have been traditionally unprepared to enter and succeed in postsecondary education. GEAR UP provides six year grants to states and partnerships to serve a cohort of students beginning no later than the seventh grade (GEAR UP, 2012). Some GEAR UP monies are also used for scholarships for low-income students.

The College Access Challenge Grant Program (CACG) is a Federal initiative designs to foster partnerships with state and local government as well as philanthropic organizations (College Access Challenge Grant Program, 2012). Through matching funds coalition are to develop strategies and programs to increase the number of low-income students who are college ready. A major focus of this program is to develop skills and knowledge through college planning workshops and financial aid guidance (College Access Challenge Grant Program, 2012).

### ***State and District-Led Initiatives***

Navigation 101 is part of a comprehensive school guidance and counseling program in Washington State that helps students make choices for college and career readiness in the areas of course selection, goal setting, career planning, and postsecondary options, including financial aid (Navigation 101, 2012). This program is aimed at all students in the partnership schools in grades 6-12 with a guidance and life-planning process. Supported by state funding this initiative has seven key elements, designed to engage students, teachers, and families all in an effort to increase college readiness.

Early College High Schools encourage underrepresented students, such as first generation college students and low-income youth to take college-credit-bearing courses while also working toward a high school diploma (Early College High School Initiative, 2012). This model is being used in over 270 schools in 28 states (McAlister & Mevs, 2012). This initiative is funded by private organizations (Early College High School Initiative, 2012).

Project U-Turn is a citywide campaign led by the Philadelphia Youth Network (PYN) to end the dropout crisis in that city (Philadelphia Youth Network, 2012). Collaborations with the school district and other community partners include a summer bridge high school transition program, re-engagement centers for out-of-school youth, case management, and student success centers to support college access (McAlister & Mevs, 2012).

### **Study Comparison Programs**

#### ***Traditional Academic Plan of High School Success***

A traditional academic plan of high school success will be defined as educators' efforts to understand and address the evolving needs of diverse students. Such plans involve student centered strategies for achieving success for the period of time that students are enrolled in high school (Walker, 2006). A common academic plan of high school success usually consists of five major aspects that surround a common core of disciplines and varying arrays of elective courses: implementing a proper mission statement, identifying goals, outlining a relevant strategy or methods, ensuring objectives, and introducing an evaluation process. Determination of the overall mission for a certain period becomes a roadmap for high school success (Akiba, 2007). Educators need to



create a mission statement that displays certain academic ambitions for the future. A similar mission statement can be focused on attempts to close the achievement or opportunity gap in schools. In the process of creating this statement, educators need to consider essential strengths to achieve their target.

The second step of a traditional academic plan of high school success relates to the selection of goals that should be accomplished in order to comply with the requirements of the mission (Walker, 2006). Furthermore, educators must plan solid strategies for attaining the respective goals. It is important to ensure realistic and reasonable techniques in dealing with educational challenges such as that of underrepresented students who demonstrate lower academic performance. By creating relevant objectives, teachers move ahead in a direction of setting clear and measurable goals. Clearly, they should provide accurate and solid evidence of high school success (Houston, Byers, & Danner, 1992). Eventually, teachers need to evaluate their progress so that they can determine the degree of their effectiveness in corresponding to the needs of diverse students.

An inseparable part of this academic plan of high school success relates to quality teaching that illustrates its potential to outweigh students' diverse backgrounds (social and economic aspects). At the same time, school accountability and transparency emerge as important practices that can ensure academic success and decrease dropout rates (Tyack & Tobin, 1994). Teachers need to be presented with adequate resources and tools so that they can enhance students for success on a regular basis (Murphy, 2009). In this way, it is important to end the practice of concentrating the least experienced and least

talented teachers in high schools that serve diverse students (students of color and students from low-income status).

The process of teaching and learning should involve learners in designing certain projects, which can guarantee that they learn in quite meaningful ways (Walker, 2006). Moreover, student interest and aspiration emerge as a significant basis for the development of an adequate academic plan of high school success. An appropriately designed plan of success will obviously lead to the acquisition of skills and knowledge that are necessary for becoming effective learners in the contemporary classroom (Tyack & Tobin, 1994). The traditional plan of success also supports emotional, social, and physical development of culturally and socially diverse students.

It is important to allow students to engage fully in the respective school environment, as they can even take certain risks for optimal academic performance. Educators should also allow learners to participate in the process of effective decision-making skills, as well as they need to have an opportunity for empathic interactions within the school settings (Dee, 2007). Therefore, a traditional academic plan of high school success ensures significant awareness of students and their potential within a global educational context.

### ***AVID (Advancement Via Individual Determination) Program***

AVID (Advancement Via Individual Development) is described as a college readiness system for elementary and postsecondary education (AVID, 2012). Established in 1980 by Mary Catherine Swanson, AVID focuses on providing better learning opportunities to all students but does target students at-risk (Hubbard & Mehan, 1999). Its major purpose is to enhance school learning and optimize academic performance of

students. Based on methods of effective and reliable instruction, AVID accelerates student learning and provides certain opportunities for extensive professional development (Bergin, Cooks, & Bergin, 2007). In fact, AVID appears something more than an academic program for advancement; its philosophy holds students accountable for their own success in education.

Even though AVID is designed to serve all students, it actually focuses on the least served students in school settings. The essentials of the program are simple. They include increased expectations of students that are further developed and challenged as result of the continuous support of the AVID system (Lozano, Watt, & Huerta, 2009). This implies that the focus is on students in the academic middle so that both educators and learners can make sufficient efforts to generate better academic performance. Once students in the academic middle receive support through the AVID system, they can feel more confident in their success and thus can attend college (Bergin, et al., 2007). The AVID program is quite suitable for the specific educational needs of disadvantaged students. The system contributes to reinforcing students to achieve their complete academic potential.

In addition, the AVID system insists that learners enroll in the most challenging classes available at the school. The curriculum stressed across this system is modeled after best practices that develop a wide range of relevant skills such as team building skills, problem solving skills, and interaction with educators (Watt, Johnston, Huerta, Mediola, & Alkan, 2008). The projects outlined in the AVID system are usually quite rich in content and ensure a stable platform for cooperative learning. Another essential characteristic of the program is its orientation toward providing community service, as it

is important to promote the idea that students need to be active members of their community (Bergin, et al., 2007). In the AVID system, learners are enabled with a significant opportunity to explore all the educational options they have for advancing their education. Moreover, students are presented with the necessary resources to assist them in their applications for scholarships in colleges and universities (Watt, e al., 2008).

The AVID system demonstrates the importance of a supportive network consisting of various components. In each AVID district, professionals in the field are a part of a site team with clearly defined responsibilities to monitor the progress of the program. It is important to note that administrators, members of faculties, and parents usually comprise this team (Hubbard & Mehan, 1999). The AVID system employs an AVID elective class for each grade level. In this elective class a supportive environment exists in which students can significantly improve their academic skills, including reading, writing, and problem solving skills (Bergin, et al., , 2007). Within the parameters of the AVID elective class, students can actively take part in tutorial sessions, which prompt learners to demonstrate a higher level of thinking abilities.

Furthermore, the AVID system makes sure to include the aspect of selecting learners who would extensively benefit from the provided academic support. Participation on the part of students and teachers is voluntary, which indicates another essential aspect of the AVID philosophy (Watt, et al., 2008). The AVID classroom activities are generally marked by collaboration and inquiry (Hubbard, & Mehan, 1999). Furthermore, researchers describe the monitoring procedure of student progress as another significant component of the AVID system. When the mentioned aspects are properly implemented, the AVID program has been found to be quite successful

(Hubbard, 1999). The fact that particular students are accepted into the AVID program is indicative that they are met with extremely high expectations especially in taking rigorous courses.

Scholars who explore the specificity and features of the AVID system note that this program provides both a challenging and supportive environment to learners that are focused on achieving their ultimate goal of enrollment and success in college (Mendiola, Watt, & Huerta, In Press). The basis of the AVID curriculum refers to the effective combination of writing and reading activities, constant collaboration, and inquiry. It is apparent that the presented skills enable students with an opportunity to succeed in their preparatory classes for college.

One of the major benefits of the AVID system is that it transforms students from passive learners into active contributors to the relevant development of the curriculum, as they continuously ensure their crucial thinking and problem solving skills (Bergin, et al., 2007). Such a transformative approach is extremely important for college admission and generating adequate academic success. It is essential to note that students enrolled into the AVID program receive additional assistance about time management, note taking, and meta-cognition procedures (Hubbard, 1999). The AVID system has definitely helped a substantial number of students to pursue a post-secondary education throughout the period of several decades. The high success rates of the program serve as an indicator of its efficiency in the long term (Bergin, et al. 2007; Watt, et al., 2009; Lozano, et al., 2009).

### **High school success indicators**

Within the study of comparison programs, three points of comparison, commonly recognized as indicators of success in high school and beyond will be examined. Those are high school cumulative grade point average (GPA), American College Testing (ACT) scores, and successful completion of Advanced Placement (AP) courses. A review of studies related to these indicators is warranted.

### **Grade Point Average**

Grade point average in high school is influenced by a number of factors. In what is considered a landmark longitudinal study of nearly 15,000 high school students in 2002, nine factors – both academic and social or emotional – were found to be uniquely related to GPA: academic expectations, academic engagement, academic self-efficacy, attendance, homework completion, school safety, grade retention, school mobility, and school misbehaviors. (Lucio, Hunt, & Bornovalova, 2012). The authors also found that the number of these risk factors, rather than the type of factor, negatively impacted GPA (Lucio, Hunt, & Bornovalova, 2012). These findings can inform policy at the high school level.

In addition, several studies address using grade point average as a predictor of high school success and academic success beyond high school. For example, a 2010 study was reported at Lindenwood University to determine if high school GPA, high school class rank, or the American College Testing (ACT) scores were effective measures of college freshmen success. Of the 821 enrolled freshmen, 536 students were available for the study. Approximately 10% were used for the study. A statistical significance was found in the correlation of high school GPA and freshmen success. The

study also found that ACT scores did not result in as significant a correlation as did the high school GPA. In addition, high school class rank added nothing to college success predictability (Townsend & Nack, 2010).

In a similar study seeking to determine high school failure predictors involving almost 5,000 middle school students, it was found that of the predictors studied, the best predictors of high school grade point average is academic performance in middle school (Casillas, et al.,2012). This certainly stands to reason and strengthens the logical connection between success at the current level of schooling and prior academic school success.

Another collegiate study often cited regarding grade point averages and school success predictability occurred at Auburn University. There, researchers compared the effectiveness in predicting college freshman grade point average of the California Achievement Tests (CAT), and ACT Assessment (Academic Tests) of the American College Testing Program (ACT), the College Board Scholastic Aptitude Test (SAT), and high school GPA. The data were the records of 1,453 freshman entering college in the fall of 1979. Although high school GPA was the best single predictor, the CAT was as effective a predictor as was ACT or SAT (Halpin, Halpin, & Schaer, 1981).

### **American College Testing Scores**

As noted above, ACT testing is often a factor noted as an academic success indicator. Many additional studies have been conducted by or in coordination with the American College Testing Corporation. In these studies, ACT scores are part of the academic prediction equation. Focusing on college enrollment, retention, and first year college GPA, the combination of high school GPA and ACT test scores were the two

most consistent indicators of college success (ACT, 1998; Allen, Robbins, Casillas, & Oh, 2007; Noble & Sawyer, 2002.)

### **Advanced Placement Course Success**

There are many foundational studies that demonstrate the correlation between rigorous coursework and positive academic outcomes for high school students. Perhaps none is as widely cited as Clifford Adelman's 1999 publication, *Answers in the Toolbox*. This study followed a national cohort of students from their sophomore year in high school to the time students were nearly 30 years of age in an attempt to determine what pre-collegiate factors most affect success in bachelor degree completion (Adelman, 1999). A tremendous number of variables were found to be significant for bachelor degree completion. For the purposes of this current study, two variables are particularly germane. First, the academic quality and intensity of the high school curriculum bears the strongest correlation with bachelor degree attainment than any of the other 23 variables (Adelman, 1999). And secondly, the impact of intense high school curricula on degree completion for African-America and Hispanics students is far more pronounced than in any other racial ethnic group (Adelman, 1999).

In his follow-up study, *The Toolbox Revisited: Paths to Degree Completion from High Schools through College* (2006), his findings above were confirmed: academic intensity of student's high school curriculum was the most important precollegiate predictor of bachelor degree completion (Adelman, 2006). In this study, however, a spotlight fell on the level of high school mathematics attainment. Adelman's work points to the fact that students will more likely complete a bachelor degree if they have



successfully completed a mathematics level higher than Algebra 2 in high school (Adelman, 2006.)

Another study centered at the University of California in 2004, sought to determine which factors of college admission were most predictive of college undergraduate completion (Geiser & Santelices, 2004). The study found that the number of AP courses taken - irrespective of whether the student took the AP exam - was significant. It alone contributed very little to the prediction of college grades (Geiser & Santelices, 2004). However, the study did find that when two additional indicators were added, high school GPA and SAT scores, the three indicators were very accurate in college success prediction (Geiser & Santelices, 2004).

Probably the most well known set of courses designed to increase high school course rigor and intensity is the Advanced Placement Program (AP). Advanced Placement was developed by the College Board. College Board was created to expand access to higher education for high school students (College Board, 2012). Today, the membership association is made up of more than 5,900 of the world's leading educational institutions and is dedicated to promoting excellence and equity in education. Each year, the College Board helps more than seven million students prepare for a successful transition to college through programs and services in college readiness and college success (College Board, 2012).

The College Board has initiated several studies to examine the benefits of implementing the AP course array in high schools around the globe. Several of those studies focus on students from traditionally underserved backgrounds such as families of poverty and or minority backgrounds.

One such study by Wyatt and Mattern conducted a study to evaluate the extent to which students of low socioeconomic (SES) status who participated in AP through the College Board's AP fee reduction program had higher college outcomes compared to non-AP low SES students (Wyatt & Mattern, 2011). Results showed that low SES students who participated in the fee reduction program were more likely to enroll in a four-year college, earn higher first-year GPAs, and have higher retention rates compared to low SES students who did not take AP Exams (Wyatt & Mattern, 2011). In addition, the pattern generally held when analyses were conducted separately by ethnicity, parent education, high school GPA, and SAT scores (Wyatt & Mattern, 2011).

## CHAPTER THREE

### Methodology

#### **Purpose of the Study**

The purpose of this study will be to compare the achievement outcomes of students attending an urban high school voluntarily participating in an academically supportive program, Advancement Via Individual Determination (AVID) compared to demographically-similar same school peers completing the traditional academic program (TAP) coursework.

#### **Participants**

**Number of participants.** The maximum accrual for this study was ( $N = 60$ ) and included a naturally formed group of students ( $n = 30$ ) who attended and completed the academic support program called AVID, and a demographically-matched group of randomly selected students ( $n = 30$ ) who attended and completed TAP. All students ( $N = 60$ ) were enrolled in the same urban high school for the extent of their high school experience. All students graduated from this high school within four consecutive years of study.

**Gender of participants.** Of the total number of identified subjects who attended and completed the academic support program called AVID ( $n = 30$ ), the gender ratio was 9 males (30%) and 21 females (70%). Of the total number of identified subjects who attended and completed the traditional high school academic program of coursework ( $n = 30$ ), the gender ratio will be 9 males (30%) and 21 females (70%). The gender of the participants was not congruent with the research school district's gender demographics. Males left the program over time at a greater rate than females.

**Age range of participants.** The age range for all study participants at the beginning of the study was from 14 years to 15 years. The age range for all participants at the conclusion of the study was from 18 years to 19 years. All participants were in the ninth grade when the study began and were seniors at the conclusion of the study. The age range of the participants was congruent with the research school district's age range demographics for high school students.

**Racial and ethnic origins of participants.** Of the total number of identified subjects who attended and completed the academic support program called AVID ( $n = 30$ ), the racial and ethnic origins was 16 African American (53%), eight Caucasian (26.6%), three Hispanic (10%), two Native American (6.6%), and one Asian American (3%). Of the total number of identified subjects who attended and completed the traditional high school academic program of coursework ( $n=30$ ), the racial and ethnic origins was 16 African American (53%), eight Caucasian (26.6%), three Hispanic (10%), two Native America (6.6%), and one Asian American (3%). The racial and ethnic origins of the participants were not congruent with the research school district's demographics for high school students. The research district's demographics are approximately 30% for each of the following groups: African American, Caucasian, and Hispanic.

**Socio-economic status of participants.** Of the total number of identified subjects who attended and completed the academic support program called AVID ( $n = 30$ ), the socio-economic status of the participants was 15 eligible to participate in the federal school lunch program (50%) and 15 not eligible to participate in the federal school lunch program (50%). Of the total number of identified subjects who will attend and completed the traditional high school academic program of coursework ( $n =$

30), the socio-economic status of the participants was 15 eligible to participate in the federal school lunch program (50%) and 16 not eligible to participate in the federal school lunch program (50%). The socio-economics of the participants was not congruent with the research school district's demographics for high school students. Approximately 67% of secondary students are eligible for the National School Lunch Program (NSLP).

**Inclusion criteria of participants.** Ninth grade students who attended the research school and were either have been in the AVID support program or the traditional academic support coursework have been selected based on the AVID profile of student characteristics including: (1) grade point average between 2.0 and 3.5, (2) students not identified as either special education students or high ability learners, (3) scored between 50-70 percentile in reading and/or math on eighth grade California Achievement Tests, and (4) students scoring within one standard deviation of the mid-range score of 100 on the California Achievement Test subset Test of Cognitive Skills (90-110).

**Method of participant identification.** Ninth grade students who received an invitation to attend and complete the AVID program as well as those who attended and completed the traditional high school academic program of coursework were identified through the student information system located at the research school. No individual identifiers were attached to the achievement data of the 60 participating students in the two naturally formed groups.

### **Description of Procedures**

**Research design.** The pretest-posttest, two-group comparative efficacy study design is displayed in the following notation:

Group 1 O<sub>1</sub> X<sub>1</sub> Y<sub>1</sub> O<sub>2</sub>

Group 2 O<sub>1</sub> X<sub>1</sub> Y<sub>2</sub> O<sub>2</sub>

**Group 1 = study participants #1.** Was a naturally formed group of students ( $n = 30$ ).

**Group 2 = study participants #2.** Was a randomly selected group of students ( $n = 30$ ).

**X<sub>1</sub> = study constant.** All students have participated in and completed a school-wide, four school year long, traditional high school academic program of coursework.

**Y<sub>1</sub> = study independent variable condition #1.** Independent variable #1 condition students who participated in the invitational AVID program and successfully completed four years of high school academic coursework ninth grade through twelfth grade.

**Y<sub>2</sub> = study independent variable condition #2.** Independent variable #2 condition students who participated in the traditional academic program and successfully completed four years of high school academic coursework ninth grade through twelfth grade.

**O<sub>1</sub> = study pretest dependent measures.** (1) Achievement as measured by ninth grade year overall core course grade point averages on a weighted four-point scale for (a) English, (b) science, (c) math, (d) social studies, and (e) overall. (2) College readiness as measured by PLAN Test scores for (a) English, (b) mathematics, (c) reading, and (d) science reasoning.

**O<sub>2</sub> = study posttest dependent measures.** (1) Achievement as measured by end of the twelfth grade year overall core course grade point averages on a four-point weighted scale for (a) English, (b) science, (c) math, (d) social studies, and (e) overall.

(2) College readiness as measured by ACT Test scores for (a) English, (b) mathematics, (c) reading, and (d) science. (3) Successful completion of honors courses in the areas of (a) English, (b) science, (c) math, (d) social studies, (e) other, and (f) overall. (4) Successful completion of Advanced Placement (AP) courses in the areas of (a) English, (b) science, (c) math, (d) social studies, and (e) overall.

### **Implementation of Independent Variables**

The independent variables were students who participated in the traditional academic program and successfully completed four years of high school academic coursework ninth grade through twelfth grade and students who participated in the invitational AVID program and successfully completed four years of high school academic coursework ninth grade through twelfth grade. Following is detail about the research school's programs to academically support youth.

**Traditional Academic Program.** The traditional academic plan of high school success found at the school in this study will be generally defined as educators' efforts to understand and address the evolving needs of diverse students in a high school setting. Such plans involve student centered strategies for achieving success for the period of time that students are enrolled in high school (Walker, 2006). A common academic plan of high school success usually consists of five major aspects: implementing a proper mission statement, identifying goals, outlining effective and relevant teaching strategies or methods, ensuring objectives, and introducing an evaluation process.

Educators at the study school have created a mission statement that displays academic ambitions for the future. A similar mission statement has been focused on attempts to close the achievement or opportunity gap in schools. In the process of

creating these statements, educators have considered essential student and staff strengths to achieve their target.

Furthermore, educators at this school have developed a plan of solid strategies for attaining the respective goals. By creating relevant objectives, teachers move ahead in a direction of setting clear and measurable goals. And, as research shows these goals work to inform the evaluation of the instructional process in high schools (Houston, Byers, & Danner, 1992). Semi-annually, teachers at the study school evaluate their progress to determine the degree of their effectiveness in corresponding to the needs of diverse students.

An inseparable part of the academic plan of high school success at the study school relates to quality teaching that illustrates the potential to outweigh students' disadvantages such as poverty. Teachers are presented with adequate resources and tools so that they can enhance students for success on a regular basis (Murphy, 2009). A plan for assigning the most experienced and educated teachers to students of disadvantage is in place at the study school.

The traditional academic plan of success at the study school also supports emotional, social, and physical development of culturally and socially diverse students. As Dee notes in 2007, it is important to allow students to engage fully in the respective school environment in order to ensure significant awareness of students' potential to impact their global education.

**Invitational AVID program.** The AVID academic support system is designed to support students in the academic middle and who have been traditionally underserved in advanced coursework to succeed in honors and Advanced Placement Courses (Nelson,



2007). In AVID, the student is front and center. AVID program integrity is driven by a national certification process that has established 11 essential elements of the AVID system. The 11 AVID essentials include: (a) student recruitment and selection requirements; (b) voluntary participation by students, staff, and parents; (c) AVID elective class is part of the regular school day; (d) enrollment in rigorous curriculum that satisfies college requirements; (e) introduction of a strong writing and reading curriculum; (f) introduction of inquiry for critical thinking skills; (g) emphasis on collaborative instruction; (h) academic assistance through tutoring with trained college tutors; (i) evaluation of program implementation through data collection and analysis; (j) district and school commitment to AVID funding appropriations and compliance; and (k) interdisciplinary site team collaboration (Guthrie & Guthrie, 2002)

Validation of the implementation of the AVID essentials occurs through an Initial Self Study which is conducted in the fall of the school year and acts as a pretest for the site's progress. Throughout the school year, site team members make adjustments to the implementation plan which is guided by extensive rubrics. In the spring, the Certification Self Study is completed. This acts as the posttest for the 11 implementation of the 11 essentials. Each essential is designed to support the student and to increase college readiness (Mendiola, Powel, & Watt In Press).

### **Dependent Measures**

The study dependent variables were commonly recognized college readiness factors related to achievement. Achievement data was analyzed using the following dependent measures including: (1) Beginning ninth grade school year and ending twelfth grade school year grade point averages on a four-point, weighted scale for (a) English, (b)

science, (c) math, (d) social studies, and (e) overall. (2) Ending of 12 grade school year ACT Test scores for (a) English, (b) mathematics, (c) reading, (d) science, and (e) composite. (3) Ending of twelfth grade school year successful completion of Advanced Placement (AP) courses in the areas of (a) English, (b) mathematics, (c) math, (d) social studies, and (e) overall. All college readiness data was collected retrospectively from ninth grade and twelfth grade data.

### **Research Questions and Data Analysis**

The following research questions will be used to compare the achievement outcomes of students attending an urban high school voluntarily participating in an academically supportive program, Advancement Via Individual Determination (AVID), compared to demographically-matched same school peers completing traditional academic program (TAP) coursework.

### **Research Questions**

#### **Overarching Pretest-Posttest Achievement Research Question #1.**

Did students who participated in the invitational AVID program and successfully completed four years of high school academic coursework ninth grade through twelfth grade lose, maintain, or improve their pretest beginning of ninth grade year overall compared to end of the twelfth grade year overall core course grade point averages on a four-point scale for (a) English, (b) science, (c) math, (d) social studies, and (e) overall?

**Sub-Question 1a.** Was there a statistically significant difference between pretest beginning of ninth grade year overall compared to posttest end of the twelfth grade year overall (a) English core course grade point averages on a four-point scale?

**Sub-Question 1b.** Was there a statistically significant difference between pretest beginning of ninth grade year overall compared to posttest end of the twelfth grade year overall (b) science core course grade point averages on a four-point scale?

**Sub-Question 1c.** Was there a statistically significant difference between pretest beginning of ninth grade year overall compared to posttest end of the twelfth grade year overall (c) math core course grade point averages on a four-point scale?

**Sub-Question 1d.** Was there a statistically significant difference between pretest beginning of ninth grade year overall compared to posttest end of the twelfth grade year overall (d) social studies core course grade point averages on a four-point scale?

**Sub-Question 1e.** Was there a statistically significant difference between pretest beginning of ninth grade year overall compared to posttest end of the twelfth grade year overall (e) overall core course grade point averages on a four-point scale?

**Analysis.** Research Sub-Questions #1a, 1b, 1c, 1d, and 1e were analyzed using dependent *t* tests to examine the significance of the difference between pretest beginning of ninth grade year overall compared to end of the twelfth grade year overall core course grade point averages on a four-point scale for (a) English, (b) science, (c) math, (d) social studies, and (e) overall for students who participated in the invitational AVID program and successfully completed four years of high school academic coursework ninth grade through twelfth grade. Since multiple statistical tests were conducted, a two-tailed .01 alpha level was employed to help control for Type 1 errors. Means and standard deviations were displayed in tables.

**Overarching Pretest-Posttest Achievement Research Question #2.** Did students who participated in the TAP program and successfully completed four years of high school academic coursework ninth grade through twelfth grade lose, maintain, or improve their pretest beginning of ninth grade year overall compared to end of the twelfth grade year overall core course grade point averages on a four-point scale for (a) English, (b) science, (c) math, (d) social studies, and (e) overall?

**Sub-Question 2a.** Was there a statistically significant difference between pretest beginning of ninth grade year overall compared to posttest end of the twelfth grade year overall (a) English core course grade point averages on a four-point scale?

**Sub-Question 2b.** Was there a statistically significant difference between pretest beginning of ninth grade year overall compared to posttest end of the twelfth grade year overall (b) science core course grade point averages on a four-point scale?

**Sub-Question 2c.** Was there a statistically significant difference between pretest beginning of ninth grade year overall compared to posttest end of the twelfth grade year overall (c) math core course grade point averages on a four-point scale?

**Sub-Question 2d.** Was there a statistically significant difference between pretest beginning of ninth grade year overall compared to posttest end of the twelfth grade year overall (d) social studies core course grade point averages on a four-point scale?

**Sub-Question 2e.** Was there a statistically significant difference between pretest beginning of ninth grade year overall compared to posttest end of the twelfth grade year overall (e) overall core course grade point averages on a four-point scale?

**Analysis.** Research Sub-Questions #2a, 2b, 2c, 2d, and 2e were analyzed using dependent  $t$  tests to examine the significance of the difference between pretest beginning of ninth grade year overall compared to end of the twelfth grade year overall core course grade point averages on a four-point scale for (a) English, (b) science, (c) math, (d) social studies, and (e) overall for students who participated in the TAP program and successfully completed four years of high school academic coursework ninth grade through twelfth grade. Since multiple statistical tests were conducted, a two-tailed .01 alpha level was employed to help control for Type 1 errors. Means and standard deviations were displayed in tables.

**Overarching Posttest-Posttest Achievement Research Question #3.** Did students who participated in the invitational AVID program and successfully completed four years of high school academic coursework ninth grade through twelfth grade compared to students who participated in the TAP program and successfully completed four years of high school academic coursework ninth grade through twelfth grade have congruent or different posttest end of the twelfth grade year overall core course grade point averages on a four-point scale for (a) English, (b) science, (c) math, (d) social studies, and (e) overall?

**Sub-Question 3a.** Were posttest end of the twelfth grade year overall core course grade point averages on a four-point scale for (a) English congruent or different for students who participated in the invitational AVID program and successfully completed four years of high school academic coursework ninth grade through twelfth grade compared to students who participated in the traditional academic program and

successfully completed four years of high school academic coursework ninth grade through twelfth grade?

**Sub-Question 3b.** Were posttest end of the twelfth grade year overall core course grade point averages on a four-point scale for (b) math congruent or different for students who participated in the invitational AVID program and successfully completed four years of high school academic coursework ninth grade through twelfth grade compared to students who participated in the TAP and successfully completed four years of high school academic coursework ninth grade through twelfth grade?

**Sub-Question 3c.** Were posttest end of the twelfth grade year overall core course grade point averages on a four-point scale for (c) science congruent or different for students who participated in the invitational AVID program and successfully completed four years of high school academic coursework ninth grade through twelfth grade compared to students who participated in the TAP and successfully completed four years of high school academic coursework ninth grade through twelfth grade?

**Sub-Question 3d.** Were posttest end of the twelfth grade year overall core course grade point averages on a four-point scale for (d) social studies congruent or different for students who participated in the invitational AVID program and successfully completed four years of high school academic coursework ninth grade through twelfth grade compared to students who participated in the TAP and successfully completed four years of high school academic coursework ninth grade?

**Sub-Question 3e.** Were posttest end of the twelfth grade year overall core course grade point averages on a four-point scale for (e) overall congruent or different for students who participated in the invitational AVID program and successfully

completed four years of high school academic coursework ninth grade through twelfth grade compared to students who participated in the TAP and successfully completed four years of high school academic coursework ninth grade?

**Analysis.** Research Sub-Questions #3a, 3b, 3c, 3d, and 3e will be analyzed using independent  $t$  tests to examine the significance of the difference between posttest end of the twelfth grade year overall core course grade point averages on a four-point scale for (a) English, (b) science, (c) math, (d) social studies, and (e) overall for students who participated in the invitational AVID program and successfully completed four years of high school academic coursework ninth grade through twelfth grade compared to students who participated in the TAP and successfully completed four years of high school academic coursework ninth grade through twelfth grade. Since multiple statistical tests were conducted, a two-tailed .01 alpha level was employed to help control for Type 1 errors. Means and standard deviations were displayed in tables.

**Overarching Pretest-Posttest Achievement Research Question #4.** Did students who participated in the invitational AVID program and successfully completed four years of high school academic coursework ninth grade through twelfth grade lose, maintain, or improve their pretest end of the tenth grade year PLAN Test scale scores compared to posttest end of the twelfth grade year ACT Test scale scores for (a) English, (b) mathematics, (c) reading, (d) science reasoning, and (e) composite?

**Sub-Question 4a.** Was there a statistically significant difference between pretest end of the tenth-grade year PLAN Test scale score compared to posttest end of the twelfth grade year ACT Test scale score for (a) English?

**Sub-Question 4b.** Was there a statistically significant difference between pretest end of the tenth-grade year PLAN Test scale score compared to posttest end of the twelfth grade year ACT Test scale score for (b) mathematics?

**Sub-Question 4c.** Was there a statistically significant difference between pretest end of the tenth-grade year PLAN Test scale score compared to posttest end of the twelfth grade year ACT Test scale score for (c) reading?

**Sub-Question 4d.** Was there a statistically significant difference between pretest end of the tenth-grade year PLAN Test scale score compared to posttest end of the twelfth grade year ACT Test scale score for (d) science reasoning?

**Sub-Question 4e.** Was there a statistically significant difference between pretest end of the tenth-grade year PLAN Test scale score compared to posttest end of the twelfth grade year ACT Test scale score for (e) the composite?

**Analysis.** Research Sub-Questions #4a, 4b, 4c, 4d, and 4e were analyzed using dependent *t* tests to examine the significance of the difference between pretest end of the eighth-grade year PLAN Test scale scores compared to posttest end of the twelfth grade year ACT Test scale scores for (a) English, (b) mathematics, (c) reading, (d) science, and (e) composite for students who participated in the invitational AVID program and successfully completed four years of high school academic coursework ninth grade through twelfth grade. Since multiple statistical tests were conducted, a two-tailed .01 alpha level was employed to help control for Type 1 errors. Means and standard deviations were displayed in tables.

**Overarching Pretest-Posttest Achievement Research Question #5.** Did students who participated in the TAP program and successfully completed four years of



high school academic coursework ninth grade through twelfth grade lose, maintain, or improve their pretest end of the tenth grade year PLAN Test scale scores compared to posttest end of the twelfth grade year ACT Test scale scores for (a) English, (b) mathematics, (c) reading, (d) science reasoning, and (e) composite?

**Sub-Question 5a.** Was there a statistically significant difference between pretest end of the tenth-grade year PLAN Test scale score compared to posttest end of the twelfth grade year ACT Test scale score for (a) English?

**Sub-Question 5b.** Was there a statistically significant difference between pretest end of the tenth-grade year PLAN Test scale score compared to posttest end of the twelfth grade year ACT Test scale score for (b) mathematics?

**Sub-Question 5c.** Was there a statistically significant difference between pretest end of the tenth-grade year PLAN Test scale score compared to posttest end of the twelfth grade year ACT Test scale score for (c) reading?

**Sub-Question 5d.** Was there a statistically significant difference between pretest end of the tenth-grade year PLAN Test scale score compared to posttest end of the twelfth grade year ACT Test scale score for (d) science reasoning?

**Sub-Question 5e.** Was there a statistically significant difference between pretest end of the tenth-grade year PLAN Test scale score compared to posttest end of the twelfth grade year ACT Test scale score for (e) the composite?

**Analysis.** Research Sub-Questions #5a, 5b, 5c, 5d, and 5e were analyzed using dependent  $t$  tests to examine the significance of the difference between pretest end of the eighth-grade year PLAN Test scale scores compared to posttest end of the twelfth grade year ACT Test scale scores for (a) English, (b) mathematics, (c) reading, (d)

science, and (e) composite for students who participated in the TAP program and successfully completed four years of high school academic coursework ninth grade through twelfth grade. Since multiple statistical tests were conducted, a two-tailed .01 alpha level was employed to help control for Type 1 errors. Means and standard deviations were displayed in tables.

**Overarching Posttest-Posttest Achievement Research Question #6.** Do students who participated in the invitational AVID program and successfully completed four years of high school academic coursework ninth grade through twelfth grade compared to students who participated in the TAP program and successfully completed four years of high school academic coursework ninth grade through twelfth grade have congruent or different posttest end of the twelfth grade year ACT Test scale scores for (a) English, (b) mathematics, (c) reading, (d) science, and (e) composite?

**Sub-Question 6a.** Were posttest end of the twelfth grade year ACT Test scale scores for (a) English congruent or different for students who participated in the invitational AVID program and successfully completed four years of high school academic coursework ninth grade through twelfth grade compared to students who participated in the TAP program and successfully completed four years of high school academic coursework ninth grade through twelfth grade?

**Sub-Question 6b.** Were posttest end of the twelfth grade year ACT Test scale scores for (b) mathematics congruent or different for students who participated in the invitational AVID program and successfully completed four years of high school academic coursework ninth grade through twelfth grade compared to students who

participated in the TAP program and successfully completed four years of high school academic coursework ninth grade through twelfth grade?

**Sub-Question 6c.** Were posttest end of the twelfth grade year ACT Test scale scores for (c) reading congruent or different for students who participated in the invitational AVID program and successfully completed four years of high school academic coursework ninth grade through twelfth grade compared to students who participated in the TAP program and successfully completed four years of high school academic coursework ninth grade through twelfth grade?

**Sub-Question 6d.** Were posttest end of the twelfth grade year ACT Test scale scores for (d) science congruent or different for students who participated in the invitational AVID program and successfully completed four years of high school academic coursework ninth grade through twelfth grade compared to students who participated in the TAP program and successfully completed four years of high school academic coursework ninth grade through twelfth grade?

**Sub-Question 6e.** Were posttest end of the twelfth grade year ACT Test scale scores for (e) composite congruent or different for students who participated in the invitational AVID program and successfully completed four years of high school academic coursework ninth grade through twelfth grade compared to students who participated in the TAP program and successfully completed four years of high school academic coursework ninth grade through twelfth grade?

**Analysis.** Research Sub-Questions #6a, 6b, 6c, 6d, and 6e were analyzed using independent *t* tests to examine the significance of the difference between the posttest end of the twelfth grade year ACT scale scores for (a) English, (b) mathematics, (c) reading,

and (d) science for students who participated in the invitational AVID program and successfully completed four years of high school academic coursework ninth grade through twelfth grade compared to students who participated in the TAP program and successfully completed four years of high school academic coursework ninth grade through twelfth grade. Since multiple statistical tests were conducted, a two-tailed .01 alpha level was employed to help control for Type 1 errors. Means and standard deviations were displayed in tables.

**Overarching Posttest-Posttest Achievement Research Question #7.** Did students who participated in the invitational AVID program and successfully completed four years of high school academic coursework ninth grade through twelfth grade compared to students who participated in the TAP program and successfully completed four years of high school academic coursework ninth grade through twelfth grade have congruent or different posttest end of the twelfth grade year successful completion of cumulative honors courses in (a) English, (b) science, (c) math, (d) social studies, (e) other, and (f) overall?

**Analysis.** Research Question #7 was analyzed using independent *t* tests to examine the significance of the difference between posttest end of the twelfth grade year overall successful completion of cumulative honors courses in (a) English, (b) science, (c) math, (d) social studies, (e) other, and (f) overall for students who participated in the invitational AVID program and successfully completed four years of high school academic coursework ninth grade through twelfth grade compared to students who participated in the TAP program and successfully completed four years of high school academic coursework ninth grade through twelfth grade. Since multiple statistical tests

were conducted, a two-tailed .01 alpha level was employed to help control for Type 1 errors. Means and standard deviations were displayed in tables.

**Overarching Posttest-Posttest Achievement Research Question #8.** Did students who participated in the invitational AVID program and successfully completed four years of high school academic coursework ninth grade through twelfth grade compared to students who participated in the TAP program and successfully completed four years of high school academic coursework ninth grade through twelfth grade have congruent or different posttest end of the twelfth grade year successful completion of cumulative Advanced Placement courses in (a) English, (b) science, (c) math, (d) social studies, and (e) overall?

**Analysis.** Research Question #8 was analyzed using independent *t* tests to examine the significance of the difference between posttest end of the twelfth grade year overall successful completion of cumulative Advanced Placement courses in (a) English, (b) science, (c) math, (d) social studies, and (e) overall for students who participated in the invitational AVID program and successfully completed four years of high school academic coursework ninth grade through twelfth grade compared to students who participated in the TAP program and successfully completed four years of high school academic coursework ninth grade through twelfth grade. Since multiple statistical tests were conducted, a two-tailed .01 alpha level was employed to help control for Type 1 errors. Means and standard deviations were displayed in tables.

### **Data Collection Procedures**

All study achievement data was retrospective, archival, and routinely collected school information. Permission from the appropriate school research personnel was

sought and obtained. Non-coded numbers were used to display individual de-identified achievement data. Aggregated group data, descriptive statistics, and parametric statistical analysis were utilized and reported with means and standard deviations on tables.

**Performance site.** The research was conducted in the public school setting through normal educational practices. The study procedures did not interfere with the normal educational practices of the public school and did not involve coercion or discomfort of any kind. Data was stored on spreadsheets and computer flash drives for statistical analysis in the office of the primary researcher and the dissertation chair. Data and computer files were kept in locked file cabinets. No individual identifiers were attached to the data.

#### **Institutional Review Board (IRB) for the protection of Human Subjects**

**Approval Category.** The exemption categories for this study was sought under 45CFR.101 (b) categories 1 and 4. The research was conducted using routinely collected archival data. A letter of support from the district was granted for IRB review.

## CHAPTER FOUR

### Results

#### **Purpose of the Study**

The purpose of this study is to compare the selected achievement outcomes of students attending an urban high school who voluntarily participate in an academically supportive program, Advancement Via Individual Determination (AVID), compared to demographically similar/same, school peers completing the traditional academic program (TAP) of study. These achievement outcomes are universally accepted predictors of college and career readiness: grade point average, rigorous curriculum, and ACT scores.

As noted in chapter two, high school graduation rates have not increased significantly since the Nation at Risk report was published in 1983. In fact, on average 70% of students graduate from high school with a regular diploma; however, students from historically disadvantaged groups such as minority groups and those from low income families have little more than a 50% chance of finishing high school with a diploma (Pinkus, 2006). There are many negative outcomes for students who do not complete high school. They span the range of economic, health, and social issues. Our nation feels these negative cumulative effects as millions of under-educated students enter society (Pleis, Ward, & Lucas, 2010).

The United States is expected to experience significant increases in racial and ethnic diversity over the next four decades (US Census, 2010). Most race groups are projected to experience a moderate increase in size over the next four decades for all projection series. One exception to this is the non-Hispanic White alone population, which is projected to experience decline (Darling-Hammond, 2010).

From the perspective of public school education, the population subgroups of African American, Hispanic, and children of low-income, which we are not able to graduate from high school at the same level as other students today, are expected to increase dramatically in number over the next forty years. It is imperative that we address this inequity now, quickly and efficiently, not only for the sake of the students but also for the sake of society.

Educators must find ways to ensure success for students who have traditionally been underserved in the public schools system. Educators must know if the traditional academic program (TAP) or AVID, or a combination of both will make a difference for those students.

#### **Overarching Pretest-Posttest Achievement Research Question #1.**

Did students who participated in the invitational AVID program and successfully completed four years of high school academic coursework ninth grade through twelfth grade lose, maintain, or improve their pretest beginning of ninth grade year compared to end of the twelfth grade year cumulative course grade point averages on a four-point scale for (a) English, (b) science, (c) math, (d) social studies, and (e) overall?

**Sub-Question 1a.** As seen in Table 1, the results of a repeated-measure *t*-test indicates there was not a significant difference between AVID students' beginning of ninth grade pretest ( $M = 2.76, S.D. = 0.93$ ) compared to AVID students' end grade 12 posttest ( $M = 2.96, S.D. = 0.80$ ) grade point averages for (a) English. AVID students' grade point averages at the end of twelfth grade were higher, but not significantly higher than their grade point average at the beginning of ninth grade ( $t(29) = 1.23, p = .22$  (two-tailed),  $d = 0.25$ ).



**Sub-Question 1b.** As seen in Table 2, the results of a repeated-measure *t*-test indicates there was not a significant difference between AVID students' beginning of ninth grade pretest ( $M = 2.93, S.D. = 0.73$ ) compared to AVID students' end grade 12 posttest ( $M = 2.73, S.D. = 0.58$ ) grade point averages for (b) science. AVID students' grade point averages at the end of twelfth grade were lower, but not significantly lower than their grade point average at the beginning of ninth grade ( $t(29) = 1.18, p = .24$  (two-tailed),  $d = 0.22$ ).

**Sub-Question 1c.** As seen in Table 3, the results of a repeated-measure *t*-test indicates there was not a significant difference between AVID students' beginning of ninth grade pretest ( $M = 2.76, S.D. = 0.93$ ) compared to AVID students' end grade 12 posttest ( $M = 2.96, S.D. = 0.80$ ) grade point averages for (c) math. AVID students' grade point averages at the end of twelfth grade were higher, but not significantly higher than their grade point average at the beginning of ninth grade ( $t(29) = 1.47, p = .15$  (two-tailed),  $d = 0.25$ ).

**Sub-Question 1d.** As seen in Table 4, the results of a repeated-measure *t*-test indicates there was not a significant difference between AVID students' beginning of ninth grade pretest ( $M = 2.83, S.D. = 0.94$ ) compared to AVID students' end grade 12 posttest ( $M = 2.50, S.D. = 0.86$ ) grade point averages for (d) social studies. AVID students' grade point averages at the end of twelfth grade were lower, but not significantly lower than their grade point average at the beginning of ninth grade ( $t(29) = .42, p = .67$  (two-tailed),  $d = 0.08$ ).

**Sub-Question 1e.** As seen in Table 5, the results of a repeated-measure *t*-test indicates there was a significant difference between AVID students' beginning of

ninth grade pretest ( $M = 3.44$ ,  $S.D. = 0.74$ ) compared to AVID students' end twelfth grade posttest ( $M = 2.81$ ,  $S.D. = 0.46$ ) grade point averages for (e) overall courses taken. AVID students' grade point average at the end of twelfth grade were significantly lower than their grade point average at the beginning of ninth grade ( $t(29) = 6.29$ ,  $p < .01$  (two-tailed),  $d = 1.16$ ).

### **Overarching Pretest-Posttest Achievement Research Question #2.**

Did students who participated in TAP and successfully completed four years of high school academic coursework ninth grade through twelfth grade lose, maintain, or improve their pretest beginning of ninth grade year compared to end of the twelfth grade year cumulative core course grade point averages on a four-point scale for (a) English, (b) science, (c) math, (d) social studies, and (e) overall?

**Sub-Question 2a.** As seen in Table 6, the results of a repeated-measure  $t$ -test indicates there was not a significant difference between TAP students' beginning of ninth grade pretest ( $M = 2.63$ ,  $S.D. = 1.18$ ) compared to TAP students' end grade 12 posttest ( $M = 2.50$ ,  $S.D. = 0.68$ ) grade point averages for (a) English. TAP students' grade point averages at the end of twelfth grade were lower, but not significantly lower than their grade point average at the beginning of ninth grade ( $t(29) = 0.55$ ,  $p = .58$  (two-tailed),  $d = 0.10$ ).

**Sub-Question 2b.** As seen in Table 7, the results of a repeated-measure  $t$ -test indicates there was a significant difference between TAP students' beginning of ninth grade pretest ( $M = 2.86$ ,  $S.D. = 0.97$ ) compared to TAP students' end grade 12 posttest ( $M = 2.20$ ,  $S.D. = 0.55$ ) grade point averages for (b) science. TAP students' grade point

averages at the end of twelfth grade were significantly lower than their grade point average at the beginning of ninth grade ( $t(29) = 4.13$ ,  $p < .01$  (two-tailed),  $d = 0.75$ ).

**Sub-Question 2c.** As seen in Table 8, the results of a repeated-measure  $t$ -test indicates there was not a significant difference between TAP students' beginning of ninth grade pretest ( $M = 2.23$ ,  $S.D. = 1.10$ ) compared to TAP students' end grade 12 posttest ( $M = 2.16$ ,  $S.D. = 0.69$ ) grade point averages for (c) math. TAP students' grade point averages at the end of twelfth grade were lower, but not significantly lower than their grade point average at the beginning of ninth grade ( $t(29) = 0.32$ ,  $p = .74$  (two-tailed),  $d = 0.05$ ).

**Sub-Question 2d.** As seen in Table 9, the results of a repeated-measure  $t$ -test indicates there was not a significant difference between TAP students' beginning of ninth grade pretest ( $M = 3.06$ ,  $S.D. = 0.98$ ) compared to TAP students' end grade 12 posttest ( $M = 2.66$ ,  $S.D. = 0.60$ ) grade point averages for (d) social studies. TAP students' grade point averages at the end of twelfth grade were lower, but not significantly lower than their grade point average at the beginning of ninth grade ( $t(29) = 1.83$ ,  $p = .07$  (two-tailed),  $d = 0.33$ ).

**Sub-Question 2e.** As seen in Table 10, the results of a repeated-measure  $t$ -test indicates there was not a significant difference between TAP students' beginning of ninth grade pretest ( $M = 2.76$ ,  $S.D. = 0.79$ ) compared to TAP students' end grade 12 posttest ( $M = 2.53$ ,  $S.D. = 0.43$ ) grade point averages for (e) overall courses taken. TAP students' grade point averages at the end of twelfth grade were lower than their grade point average at the beginning of ninth grade but significantly lower ( $t(29) = 2.03$ ,  $p = .05$  (two-tailed),  $d = 0.37$ ).

**Overarching Posttest-Posttest Achievement Research Question #3.**

Did students who participated in the invitational AVID program and successfully completed four years of high school academic coursework ninth grade through twelfth grade compared to students who participated in the TAP and successfully completed four years of high school academic coursework ninth grade through twelfth grade have congruent or different posttest end of the twelfth grade year overall course grade point averages on a four-point scale for (a) English, (b) science, (c) math, (d) social studies, and (e) overall?

**Sub-Question 3a.** As seen in Table 11, the results of an independent *t*-test indicates there was a difference between AVID students' end of grade 12 posttest grade point average ( $M = 2.96, S.D. = 0.80$ ) compared to TAP students' end of grade 12 posttest grade point average ( $M = 2.50, S.D. = 0.68$ ) for (a) English. AVID students' grade point averages at the end of twelfth grade were higher, and almost statistically significantly higher than TAP students grade point average at the end of twelfth grade ( $t(58) = 3.64, p = .02$  (two-tailed),  $d = 0.62$ ).

**Sub-Question 3b.** As seen in Table 12, the results of an independent *t*-test indicates there was a significant difference between AVID students' end of grade 12 posttest grade point average ( $M = 2.73, S.D. = 0.58$ ) compared to TAP students' end of grade 12 posttest grade point average ( $M = 2.20, S.D. = 0.55$ ) for (b) science. AVID students' grade point averages at the end of twelfth grade were significantly higher, than TAP students grade point average at the end of twelfth grade ( $t(58) = 2.41, p = .01$  (two-tailed),  $d = 0.94$ ).

**Sub-Question 3c.** As seen in Table 13, the results of an independent *t*-test indicates there was not a significant difference between AVID students' end of twelfth grade posttest grade point average ( $M = 2.50, S.D. = 0.86$ ) compared to TAP students' end of twelfth grade posttest grade point average ( $M = 2.16, S.D. = 0.69$ ) for (c) math. AVID students' grade point averages at the end of twelfth grade were higher, but not significantly higher than TAP students grade point average at the end of twelfth grade ( $t(58) = 1.54, p = .10$  (two-tailed),  $d=0.44$ )

**Sub-Question 3d.** As seen in Table 14, the results of an independent *t*-test indicates there was not a significant difference between AVID students' end of grade 12 posttest grade point average ( $M = 2.96, S.D. = 0.85$ ) compared to TAP students' end of grade 12 posttest grade point average ( $M = 2.66, S.D. = 0.60$ ) for (d) social studies. AVID students' grade point averages at the end of twelfth grade were higher, but not significantly higher than TAP students grade point average at the end of twelfth grade ( $t(58) = 1.57, p = .12$  (two-tailed),  $d=0.41$ ).

**Sub-Question 3e.** As seen in Table 15, the results of an independent *t*-test indicates there was a significant difference between AVID students' end of grade 12 posttest grade point average ( $M = 2.81, S.D. = 0.46$ ) compared to TAP students' end of grade 12 posttest grade point average ( $M = 2.53, S.D. = 0.43$ ) for (e) overall courses taken. AVID students' grade point averages at the end of twelfth grade were significantly higher, than TAP students grade point average at the end of twelfth grade ( $t(58) = 2.37, p = .02$  (two-tailed),  $d=0.63$ ).

#### **Overarching Pretest-Posttest Achievement Research Question #4.**

Did students who participated in the invitational AVID program and successfully completed four years of high school academic coursework ninth grade through twelfth grade lose, maintain, or improve their pretest end of the tenth grade year PLAN Test scale scores compared to posttest end of the twelfth grade year ACT Test scale scores for (a) English, (b) mathematics, (c) reading, (d) science reasoning, and (e) composite?

**Sub-Question 4a.** As seen in table 16, the results of a repeated-measure dependent t-test, there was not a difference between AVID students' pretest end of the tenth-grade year PLAN Test scale score ( $M = 17.40$ ,  $S.D. = 3.23$ ) compared to AVID students' posttest end of the twelfth grade year ACT Test scale score ( $M = 17.60$ ,  $S.D. = 4.09$ ) for (a) English. AVID students' ACT Test scale scores were higher than their PLAN scale scores, but not significantly higher ( $t(29) = 0.32$ ,  $p = .74$  (two-tailed),  $d = 0.06$ ).

**Sub-Question 4b.** As seen in table 17, the results of a repeated-measure dependent t-test, there was a difference between AVID students' pretest end of the tenth-grade year PLAN Test scale score ( $M = 15.66$ ,  $S.D. = 3.60$ ) compared to AVID students' posttest end of the twelfth grade year ACT Test scale score ( $M = 17.10$ ,  $S.D. = 3.50$ ) for (b) math. AVID students' ACT Test scale scores were significantly higher than their PLAN scale scores ( $t(29) = 3.55$ ,  $p = <.01$  (two-tailed),  $d = 0.63$ ).

**Sub-Question 4c.** As seen in table 18, the results of a repeated-measure dependent t-test, there was a difference between AVID students' pretest end of the tenth-grade year PLAN Test scale score ( $M = 16.66$ ,  $S.D. = 3.62$ ) compared to AVID students' posttest end of the twelfth grade year ACT Test scale score ( $M = 19.43$ ,  $S.D. = 5.14$ ) for

(c) reading. AVID students' ACT Test scale scores were significantly higher than their PLAN scale scores ( $t(29) = 4.17, p = <.01$  (two-tailed),  $d = 0.75$ ).

**Sub-Question 4d.** As seen in table 19, the results of a repeated-measure dependent  $t$ -test, there was not a difference between AVID students' pretest end of the tenth-grade year PLAN Test scale score ( $M = 17.66, S.D. = 2.52$ ) compared to AVID students' posttest end of the twelfth grade year ACT Test scale score ( $M = 18.23, S.D. = 3.70$ ) for (d) science reasoning. AVID students' ACT Test scale scores were higher than their PLAN scale scores, but not significantly higher ( $t(29) = 1.05, p = .30$  (two-tailed),  $d = 0.19$ ).

**Sub-Question 4e.** As seen in table 20, the results of a repeated-measure dependent  $t$ -test, there was a difference between AVID students' pretest end of the tenth-grade year PLAN Test scale score ( $M = 16.96, S.D. = 2.63$ ) compared to posttest end of the twelfth grade year ACT Test scale score ( $M = 18.26, S.D. = 3.55$ ) for (e) composite. AVID students' ACT Test scale scores were significantly higher than their PLAN scale scores ( $t(29) = 3.68, p = <.01$  (two-tailed),  $d = 0.68$ ).

#### **Overarching Pretest-Posttest Achievement Research Question #5.**

Did students who participated in the TAP and successfully completed four years of high school academic coursework ninth grade through twelfth grade lose, maintain, or improve their pretest end of the tenth grade year PLAN Test scale scores compared to posttest end of the twelfth grade year ACT Test scale scores for (a) English, (b) mathematics, (c) reading, (d) science reasoning, and (e) composite?

**Sub-Question 5a.** As seen in table 21, the results of a repeated-measure dependent  $t$ -test, there was not a difference between TAP students' pretest end of the

tenth-grade year PLAN Test scale score ( $M = 13.14$ ,  $S.D. = 3.42$ ) compared to TAP students' posttest end of the twelfth grade year ACT Test scale score ( $M = 12.89$ ,  $S.D. = 3.93$ ) for (a) English. TAP students' ACT Test scale scores were lower than their PLAN scale scores, but not significantly lower ( $t(29) = 0.85$ ,  $p = .59$  (two-tailed),  $d = 0.11$ ).

**Sub-Question 5b.** As seen in table 22, the results of a repeated-measure dependent  $t$ -test, there was a significant difference between TAP students' pretest end of the tenth-grade year PLAN Test scale score ( $M = 12.92$ ,  $S.D. = 3.20$ ) compared to TAP students' posttest end of the twelfth grade year ACT Test scale score ( $M = 14.50$ ,  $S.D. = 2.34$ ) for (b) math. TAP students' ACT Test scale scores were significantly higher than their PLAN scale scores ( $t(29) = 3.55$ ,  $p = .01$  (two-tailed),  $d = 0.52$ ).

**Sub-Question 5c.** As seen in table 23, the results of a repeated-measure dependent  $t$ -test, there was not a difference between TAP students' pretest end of the tenth-grade year PLAN Test scale score ( $M = 13.85$ ,  $S.D. = 2.54$ ) compared to TAP students' posttest end of the twelfth grade year ACT Test scale score ( $M = 14.71$ ,  $S.D. = 4.74$ ) for (c) reading. TAP students' ACT Test scale scores were higher than their PLAN scale scores, but not significantly higher ( $t(29) = 1.31$ ,  $p = .20$  (two-tailed),  $d = 0.25$ ).

**Sub-Question 5d.** As seen in table 24, the results of a repeated-measure dependent  $t$ -test, there was not a difference between TAP students' pretest end of the tenth grade year PLAN Test scale score ( $M = 15.18$ ,  $S.D. = 2.41$ ) compared to TAP students' posttest end of the twelfth grade year ACT Test scale score ( $M = 14.57$ ,  $S.D. = 3.45$ ) for (d) science reasoning. TAP students' ACT Test scale scores were lower than their PLAN scale scores, but not significantly lower ( $t(29) = 1.38$ ,  $p = .18$  (two-tailed),  $d = 0.19$ ).



**Sub-Question 5e.** As seen in table 25, the results of a repeated-measure dependent *t*-test, there was not a difference between TAP students' pretest end of the tenth-grade year PLAN Test scale score ( $M = 13.86, S.D. = 2.32$ ) compared to TAP students' posttest end of the twelfth grade year ACT Test scale score ( $M = 14.32, S.D. = 3.13$ ) for (e) composite. TAP students' ACT Test scale scores were lower than their PLAN scale scores, but not significantly lower ( $t(29) = 1.34, p = .19$  (two-tailed),  $d = 0.25$ ).

**Overarching Posttest-Posttest Achievement Research Question #6.**

Did students who participated in the invitational AVID program and successfully completed four years of high school academic coursework ninth grade through twelfth grade compared to students who participated in the TAP and successfully completed four years of high school academic coursework ninth grade through twelfth grade have congruent or different posttest end of the twelfth grade year ACT Test scale scores for (a) English, (b) mathematics, (c) reading, (d) science, and (e) composite?

**Sub-Question 6a.** As seen in table 26, the results of an independent *t*-test, there was a significant difference between AVID students' end of twelfth grade year ACT Test scale score ( $M = 17.60, S.D. = 4.09$ ) compared to TAP students' end of the twelfth grade year ACT Test scale score ( $M = 12.80, S.D. = 3.81$ ) for (a) English. AVID students' ACT Test scale scores were significantly higher than TAP students' scale scores ( $t(58) = 4.69, p = <.01$  (two-tailed),  $d = 1.22$ ).

**Sub-Question 6b.** As seen in table 27, the results of an independent *t*-test, there was a significant difference between AVID students' end of twelfth grade year ACT Test scale score ( $M = 17.10, S.D. = 3.50$ ) compared to TAP students' end of the

twelfth grade year ACT Test scale score ( $M = 14.43$ ,  $S.D. = 2.28$ ) for (b) math. AVID students' ACT Test scale scores were significantly higher than TAP students' scale scores ( $t(58) = 3.49$ ,  $p = <.01$  (two-tailed),  $d = 0.92$ ).

**Sub-Question 6c.** As seen in table 28, the results of an independent  $t$ -test, there was a difference between AVID students' end of twelfth grade year ACT Test scale score ( $M = 19.43$ ,  $S.D. = 5.14$ ) compared to TAP students' end of the twelfth grade year ACT Test scale score ( $M = 14.63$ ,  $S.D. = 4.60$ ) for (c) reading. AVID students' ACT Test scale scores were significantly higher than TAP students' scale scores ( $t(58) = 3.81$ ,  $p = <.01$  (two-tailed),  $d = 0.99$ ).

**Sub-Question 6d.** As seen in table 29, the results of an independent  $t$ -test, there was a significant difference between AVID students' end of twelfth grade year ACT Test scale score ( $M = 18.23$ ,  $S.D. = 3.70$ ) compared to TAP students' end of the twelfth grade year ACT Test scale score ( $M = 14.56$ ,  $S.D. = 3.33$ ) for (d) science reasoning. AVID students' ACT Test scale scores were significantly higher than TAP students' scale scores ( $t(58) = 4.03$ ,  $p = <.01$  (two-tailed),  $d = 1.04$ ).

**Sub-Question 6e.** As seen in table 30, the results of an independent  $t$ -test, there was a significant difference between AVID students' end of twelfth grade year ACT Test scale score ( $M = 18.26$ ,  $S.D. = 3.55$ ) compared to TAP students' end of the twelfth grade year ACT Test scale score ( $M = 14.26$ ,  $S.D. = 3.04$ ) for (e) composite. AVID students' ACT Test scale scores were significantly higher than TAP students' scale scores ( $t(58) = 4.69$ ,  $p = <.01$  (two-tailed),  $d = 1.22$ ).

**Overarching Posttest-Posttest Achievement Research Question #7.**

Did students who participated in the invitational AVID program and successfully completed four years of high school academic coursework ninth grade through twelfth grade compared to students who participated in the TAP and successfully completed four years of high school academic coursework ninth grade through twelfth grade have congruent or different posttest end of the twelfth grade year successful completion of honors courses in (a) English, (b) science, (c) math, (d) social studies (e) other, and (f) overall?

**Sub-Question 7a.** As seen in Table 31, the results of an independent *t*-test indicates there was a significant difference between AVID students' successful completion of honors courses ( $M = 3.60, S.D. = 0.81$ ) compared to TAP students' successful completion of honors courses ( $M = 0.50, S.D. = 1.30$ ) for (a) English. AVID students successfully completed significantly more of honors English courses than TAP students ( $t(58) = 11.03, p = <.01$  (two-tailed),  $d = 2.94$ ).

**Sub-Question 7b.** As seen in Table 32, the results of an independent *t*-test indicates there was a significant difference between AVID students' successful completion of honors courses ( $M = 5.33, S.D. = 1.74$ ) compared to TAP students' successful completion of honors courses ( $M = 1.03, S.D. = 2.14$ ) for (b) science. AVID students successfully completed significantly more of honors science courses than TAP students. ( $t(58) = 8.51, p = <.01$  (two-tailed),  $d = 2.22$  ).

**Sub-Question 7c.** As seen in Table 33, the results of an independent *t*-test indicates there was a significant difference between AVID students' successful completion of honors courses ( $M = 2.66, S.D. = 2.99$ ) compared to TAP students'

successful completion of honors courses ( $M = 0.10$ ,  $S.D. = 0.40$ ) for (c) math. AVID students successfully completed significantly more of honors math courses than TAP students ( $t(58) = 4.64$ ,  $p = <.01$  (two-tailed),  $d = 1.51$ ).

**Sub-Question 7d.** As seen in Table 34, the results of an independent  $t$ -test indicates there was a significant difference between AVID students' successful completion of honors courses ( $M = 3.53$ ,  $S.D. = 1.00$ ) compared to TAP students' successful completion of honors courses ( $M = 0.73$ ,  $S.D. = 1.59$ ) for (d) social studies. AVID students successfully completed significantly more of honors social studies courses than TAP students ( $t(58) = 8.12$ ,  $p = <.01$  (two-tailed),  $d = 2.24$ ).

**Sub-Question 7e.** As seen in Table 35, the results of an independent  $t$ -test indicates there was a significant difference between AVID students' successful completion of honors courses ( $M = 10.83$ ,  $S.D. = 2.70$ ) compared to TAP students' successful completion of honors courses ( $M = 1.86$ ,  $S.D. = 2.37$ ) for (e) other. AVID students successfully completed significantly more of honors other courses than TAP students ( $t(58) = 13.64$ ,  $p = <.01$  (two-tailed),  $d = 3.54$ ).

**Sub-Question 7f.** As seen in Table 36, the results of an independent  $t$ -test indicates there was a significant difference between AVID students' successful completion of honors courses ( $M = 26.03$ ,  $S.D. = 6.30$ ) compared to TAP students' successful completion of honors courses ( $M = 4.23$ ,  $S.D. = 6.45$ ) for (f) overall. AVID students successfully completed significantly more overall honors courses than TAP students ( $t(58) = 13.23$ ,  $p = <.01$  (two-tailed),  $d = 3.42$  ).

**Overarching Posttest-Posttest Achievement Research Question #8.**

Did students who participated in the invitational AVID program and successfully completed four years of high school academic coursework ninth grade through twelfth grade compared to students who participated in the TAP and successfully completed four years of high school academic coursework ninth grade through twelfth grade have congruent or different posttest end of the twelfth grade year successful completion of Advanced Placement (AP) courses in (a) English, (b) science, (c) math, (d) social studies, and (e) overall?

**Sub-Question 8a.** As seen in Table 37, the results of an independent *t*-test indicates there was a significant difference between AVID students' successful completion of AP courses ( $M = 3.33$ ,  $S.D. = 0.92$ ) compared to TAP students' successful completion of AP courses ( $M = 0.40$ ,  $S.D. = 0.96$ ) for (a) English. AVID students successfully completed significantly more of AP English courses than TAP students ( $t(58) = 12.01$ ,  $p = <.01$  (two-tailed),  $d = 3.12$ ).

**Sub-Question 8b.** As seen in Table 38, the results of an independent *t*-test indicates there was a significant difference between AVID students' successful completion of AP courses ( $M = 1.66$ ,  $S.D. = 1.09$ ) compared to TAP students' successful completion of AP courses ( $M = 0.26$ ,  $S.D. = 0.69$ ) for (b) science. AVID students successfully completed significantly more of AP science courses than TAP students ( $t(58) = 5.92$ ,  $p = <.01$  (two-tailed),  $d = 1.57$ ).

**Sub-Question 8c.** As seen in Table 39, the results of an independent *t*-test indicates there was not a difference between AVID students' successful completion of AP courses ( $M = 0.26$ ,  $S.D. = 0.86$ ) compared to TAP students' successful completion of

AP courses ( $M = 0.60$ ,  $S.D. = 0.36$ ) for (c) math. TAP students successfully completed more AP Math courses than AVID students, but not significantly more ( $t(58) = 1.16$ ,  $p = .25$  (two-tailed),  $d = 0.56$ ).

**Sub-Question 8d.** As seen in Table 40, the results of an independent  $t$ -test indicates there was a significant difference between AVID students' successful completion of AP courses ( $M = 2.90$ ,  $S.D. = 1.42$ ) compared to TAP students' successful completion of AP courses ( $M = 0.53$ ,  $S.D. = 1.16$ ) for (d) social studies. AVID students successfully completed significantly more AP social studies courses than TAP students ( $t(58) = 7.04$ ,  $p = <.01$  (two-tailed),  $d = 1.84$ ).

**Sub-Question 8e.** As seen in Table 41, the results of an independent  $t$ -test indicates there was a significant difference between AVID students' successful completion of AP courses ( $M = 8.13$ ,  $S.D. = 2.70$ ) compared to TAP students' successful completion of AP courses ( $M = 1.86$ ,  $S.D. = 3.02$ ) for (e) overall. AVID students successfully completed significantly more of AP courses overall than TAP students ( $t(58) = 9.61$ ,  $p = <.01$  (two-tailed),  $d = 2.19$ ).

Table 1

AVID Student Grade Point Averages Pretest/Posttest for English

	Pretest		Posttest		<i>t</i>	<i>p</i>	<i>d</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>			
English GPA	2.76	0.93	2.96	0.80	1.23	.22	0.25

Table 2

AVID Student Grade Point Averages Pretest/Posttest for Science

---

	Pretest		Posttest		<i>t</i>	<i>p</i>	<i>d</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>			
Science GPA	2.93	0.73	2.73	0.58	1.18	.24	0.22

---



Table 3

AVID Student Grade Point Averages Pretest/Posttest for Math

---

	Pretest		Posttest				
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>t</i>	<i>p</i>	<i>d</i>
Math GPA	2.76	0.93	2.93	0.80	1.47	.15	0.25

---

Table 4

## AVID Student Grade Point Averages Pretest/Posttest for Social Studies

	Pretest		Posttest		<i>t</i>	<i>p</i>	<i>d</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>			
Social Studies GPA	2.83	0.94	2.50	0.86	.42	.67	0.08

Table 5

AVID Student Grade Point Averages Pretest/Posttest for Overall Courses

	Pretest		Posttest		<i>t</i>	<i>p</i>	<i>d</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>			
Overall GPA	3.44	0.74	2.81	0.46	6.29	<.01	1.16

Table 6

TAP Student Grade Point Averages Pretest/Posttest for English

	Pretest		Posttest		<i>t</i>	<i>p</i>	<i>d</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>			
English GPA	2.63	1.18	2.50	0.68	0.55	.58	0.10

Table 7

TAP Student Grade Point Averages Pretest/Posttest for Science

	Pretest		Posttest		<i>t</i>	<i>p</i>	<i>d</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>			
Science GPA	2.86	0.97	2.20	0.55	4.13	<.01	0.75

Table 8

TAP Student Grade Point Averages Pretest/Posttest Math

---

	Pretest		Posttest		<i>t</i>	<i>p</i>	<i>d</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>			
Math GPA	2.23	1.10	2.16	0.69	0.32	.74	0.50

---

Table 9

TAP Student Grade Point Averages Pretest/Posttest Social Studies

	Pretest		Posttest		<i>t</i>	<i>p</i>	<i>d</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>			
Social Studies GPA	3.06	0.98	2.66	0.60	1.83	.07	0.33

Table 10

TAP Student Grade Point Averages Pretest/Posttest for Overall Courses

	Pretest		Posttest		<i>t</i>	<i>p</i>	<i>d</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>			
Overall GPA	2.76	0.79	2.53	0.43	2.03	.05	0.37



Table 11

AVID and TAP Student Grade Point Averages Posttest/Posttest for English

	AVID		TAP		<i>t</i>	<i>p</i>	<i>d</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>			
English GPA	2.96	0.80	2.50	0.68	3.64	.02	0.62

Table 12

AVID and TAP Student Grade Point Averages Posttest/Posttest for Science

---

	AVID		TAP				
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>t</i>	<i>p</i>	<i>d</i>
Science GPA	2.73	0.58	2.20	0.55	3.64	.01	0.94

---

Table 13

AVID and TAP Student Grade Point Averages Posttest/Posttest for Math

---

	AVID		TAP		<i>t</i>	<i>p</i>	<i>d</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>			
Math GPA	2.50	0.86	2.16	0.69	1.64	.10	0.44

---

Table 14

AVID and TAP Student Grade Point Averages Posttest/Posttest for Social Studies

	AVID		TAP		<i>t</i>	<i>p</i>	<i>d</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>			
Social Studies GPA	2.96	0.85	2.66	0.60	1.57	.12	0.41

Table 15

AVID and TAP Student Grade Point Averages Posttest/Posttest for Overall Courses

Taken

---

	AVID		TAP		<i>t</i>	<i>p</i>	<i>d</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>			
Overall GPA	2.81	0.46	2.53	0.43	2.37	.02	0.63

---

Table 16

AVID Student Pretest/Posttest Scale Score Results PLAN and ACT Test in English

	PLAN		ACT		<i>t</i>	<i>p</i>	<i>d</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>			
PLAN/ACT English	17.40	3.23	17.60	4.09	0.32	.74	0.06

Table 17

AVID Student Pretest/Posttest Scale Score Results PLAN and ACT Test in Math

---

	PLAN		ACT				
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>t</i>	<i>p</i>	<i>d</i>
PLAN/ACT Math	15.66	3.60	17.10	3.50	3.55	<.01	0.63

---

Table 18

AVID Student Pretest/Posttest Scale Score Results PLAN and ACT Test in Reading

	PLAN		ACT		<i>t</i>	<i>p</i>	<i>d</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>			
PLAN/ACT Reading	16.66	3.62	19.43	5.14	4.17	<.01	0.75





Table 20

AVID Student Pretest/Posttest Scale Score Results PLAN and ACT Test Composite

	PLAN		ACT		<i>t</i>	<i>p</i>	<i>d</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>			
PLAN/ACT Composite	16.96	2.63	18.26	3.55	3.68	<.01	0.68

Table 21

TAP Student Pretest/Posttest Scale Score Results PLAN and ACT Test for English

	PLAN		ACT		<i>t</i>	<i>p</i>	<i>d</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>			
PLAN/ACT English	13.14	3.42	12.89	3.93	0.85	.59	0.11

Table 22

TAP Student Pretest/Posttest Scale Score Results PLAN and ACT Test for Math

	PLAN		ACT		<i>t</i>	<i>p</i>	<i>d</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>			
PLAN/ACT Math	12.92	3.20	14.50	2.34	3.55	.01	0.52

Table 23

TAP Student Pretest/Posttest Scale Score Results PLAN and ACT Test for Reading

	PLAN		ACT		<i>t</i>	<i>p</i>	<i>d</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>			
PLAN/ACT Reading	13.85	2.54	14.71	4.74	1.31	.20	0.25



Table 25

TAP Student Pretest/Posttest Scale Score Results PLAN and ACT Test for Composite

	PLAN		ACT		<i>t</i>	<i>p</i>	<i>d</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>			
PLAN/ACT Composite	13.86	2.32	14.32	3.13	1.34	.19	0.25

Table 26

## AVID and TAP Student ACT Test Scale Score Results for English

	AVID		TAP		<i>t</i>	<i>p</i>	<i>d</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>			
ACT for English	17.60	4.09	12.80	3.81	4.69	<.01	1.22



Table 27

## AVID and TAP Student ACT Test Scale Score Results for Math

	AVID		TAP		<i>t</i>	<i>p</i>	<i>d</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>			
ACT for Math	17.10	3.50	14.43	2.28	3.49	<.01	0.92

Table 28

## AVID and TAP Student ACT Test Scale Score Results for Reading

	AVID		TAP		<i>t</i>	<i>p</i>	<i>d</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>			
ACT for Reading	19.43	5.14	14.63	4.60	3.81	<.01	0.99

Table 29

## AVID and TAP Student ACT Test Scale Score Results for Science Reasoning

---

	AVID		TAP		<i>t</i>	<i>p</i>	<i>d</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>			
ACT for Science Reasoning	18.23	3.70	14.56	3.33	4.03	<.01	1.04

---

Table 30

AVID and TAP Student ACT Test Scale Score Results for Composite

	AVID		TAP		<i>t</i>	<i>p</i>	<i>d</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>			
ACT for Composite	18.26	3.55	14.26	3.04	4.69	<.01	1.22

Table 31

## AVID and TAP Student Successful Completion of Honors English Courses

---

	AVID		TAP		<i>t</i>	<i>p</i>	<i>d</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>			
Honors English	3.60	0.81	0.50	1.30	11.03	.01	2.94

---

Table 32

## AVID and TAP Student Successful Completion of Honors Science Courses

---

	AVID		TAP		<i>t</i>	<i>p</i>	<i>d</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>			
Honors Science	5.33	1.74	1.03	2.14	8.51	<.01	2.22

---

Table 33

## AVID and TAP Student Successful Completion of Honors Math Courses

---

	AVID		TAP		<i>t</i>	<i>p</i>	<i>d</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>			
Honors Math	2.66	2.99	0.10	0.40	4.64	<.01	1.51

---

Table 34

## AVID and TAP Student Successful Completion of Honors Social Studies Courses

	AVID		TAP		<i>t</i>	<i>p</i>	<i>d</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>			
Honors Social Studies	3.53	1.00	0.73	1.59	8.12	<.01	2.24



Table 35

## AVID and TAP Student Successful Completion of Other Honors Courses

---

	AVID		TAP				
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>t</i>	<i>p</i>	<i>d</i>
Other Honors	10.83	2.70	1.86	2.37	13.64	<.01	3.54

---

Table 36

## AVID and TAP Student Successful Completion of Honors Courses Overall

	AVID		TAP		<i>t</i>	<i>p</i>	<i>d</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>			
Overall Honors	26.03	6.30	4.23	6.45	13.23	<.01	3.42

Table 37

## AVID and TAP Student Successful Completion of Advanced Placement English Courses

	AVID		TAP		<i>t</i>	<i>p</i>	<i>d</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>			
AP English	3.33	0.92	0.40	0.96	12.01	<.01	3.12

Table 38

AVID and TAP Student Successful Completion of Advanced Placement Science Courses

---

	AVID		TAP		<i>t</i>	<i>p</i>	<i>d</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>			
AP Science	1.66	1.09	0.26	0.69	5.92	<.01	1.57

---

Table 39

## AVID and TAP Student Successful Completion of Advanced Placement Math Courses

---

	AVID		TAP				
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>t</i>	<i>p</i>	<i>d</i>
AP Math	0.26	0.86	0.60	0.36	1.16	.25	0.56

---

Table 40

AVID and TAP Student Successful Completion of Advanced Placement Social Studies Courses

	AVID		TAP		<i>t</i>	<i>p</i>	<i>d</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>			
AP Social Studies	2.90	1.42	0.53	1.16	7.04	<.01	1.84

Table 41

## AVID and TAP Student Successful Completion of Overall Advanced Placement Courses

---

	AVID		TAP		<i>t</i>	<i>p</i>	<i>d</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>			
AP Overall	8.13	2.70	1.86	3.02	9.61	<.01	2.19

---

## CHAPTER FIVE

### Conclusions and Discussion

#### **The Purpose of the Study**

The purpose of this study was to compare the selected college/career readiness outcomes for students attending an urban high school who voluntarily participated in an academically supportive program, Advancement Via Individual Determination (AVID), to demographically similar/same, school peers completing the traditional academic program (TAP) of study. These outcomes are universally accepted predictors of college and career readiness. Grade point average, rigorous curriculum, and ACT scores were used as yardsticks in this study.

Student populations of those who have been traditionally underserved in high school are projected to increase in the next decades. Learning how to better prepare all students for success in high school as well as career and college will benefit students and society as a whole. This chapter presents the conclusion and discussion of the findings from this study, the significance of the findings, and the recommendations for future research.

#### **Conclusions**

The following conclusions may be drawn from the study of sub-questions (a) English and (c) math for Research Question #1: The results of a repeated-measure *t*-test indicate that AVID students' twelfth grade posttest grade point averages for English and math were higher but not significantly higher than their ninth grade pretest grade point averages. The following conclusions may be drawn from the study of sub-questions (b) science, (d) social studies, and (e) overall for Research Question #1: The results of a



repeated-measure *t*-test indicate that AVID students' twelfth grade posttest grade point averages for English, math and overall were lower but not significantly lower than their ninth grade pretest grade point averages.

The following conclusions may be drawn from the study of sub-questions (a) English, (c) math, and (d) social studies for Research Question #2: The results of a repeated-measure *t*-test indicate that TAP students' twelfth grade posttest grade point averages for English, math, and social studies were lower than their ninth grade pretest grade point averages. TAP students grade point averages went down from grade none to grade twelve. In addition, the results of a repeated measure *t*-test indicate grade point averages for TAP students over the same time period were statistically significantly lower for (b) science and (e) overall grade point averages.

The following conclusions may be drawn from the study of sub-questions (b) science for Research Question #3: The results of an independent *t*-test indicate that AVID students' twelfth grade posttest grade point averages for science courses were statistically significantly higher than TAP students' twelfth grade point averages. The following conclusions may be drawn from the study of sub-questions (a) English, (c) math, (d) social studies, and (e) overall for Research Question #3: The results of an independent *t*-test indicate that AVID students' twelfth grade posttest grade point averages for English, math, social studies, and overall were higher than TAP students' grade point averages but not statistically significantly higher.

The following conclusions may be drawn from the study of each of the sub-questions (b) mathematics, (c) reading, and (e) composite for Research Question #4: The results of a repeated-measure *t*-test indicate that there was a statistically significant

difference between AVID students' PLAN and ACT scale scores for math, reading, and composite scores. ACT scale scores were statistically significantly higher. For sub-questions (a) English and (d) science reasoning, AVID students' PLAN to ACT scale scores for English and science reasoning were higher, but not statistically significantly higher.

The following conclusions may be drawn from the study of the sub-question (b) math, for Research Question #5: The results of a repeated-measure *t*-test indicate that there was a significant difference between TAP students' PLAN to ACT scale scores for math. TAP students' ACT math scale scores were significantly higher than their math PLAN Test Scale scores. For sub-question (c) reading, the results of a repeated-measure *t*-test indicate that TAP students' ACT reading scale score was higher than their PLAN test scale score, but not significantly higher. For sub-questions (a) English, (d) science reasoning, and (e) overall, the results of repeated-measure *t*-tests indicate that TAP students' ACT English, science reasoning, and overall scale scores were lower, but not statistically significantly lower, than their PLAN test scale scores in those same areas.

The following conclusions may be drawn from the study of each of the sub-questions (a) English, (b) math, (c) reading, (d) science reasoning, and (e) overall for Research Question #6: The results of an independent *t*-test indicate that there was a statistically significant difference between AVID students' compared to TAP students' ACT scale scores in all subtests and in the composite scores. AVID students scored significantly higher in all ACT subtests and overall.

The following conclusions may be drawn from the study of each of the sub-questions (a) English, (b) science, (c) math, (d) social studies, (e) other, and (f) overall for

Research Question #7: The results of an independent *t*-test indicate that there was a significant difference between AVID students' compared to TAP students' successful completion of honors courses in all subjects measured and in overall honors course success. AVID students were significantly more successful.

The following conclusions may be drawn from the study for sub-questions (a) English, (b) science, (d) social studies, and (e) overall for Research Question #8: The results of an independent *t*-test indicate that there was a statistically significant difference between AVID students' successful completion of AP courses in the subject areas of English, science, social studies, and overall as compared to TAP students. AVID students were significantly more successful than TAP students in these subject areas. For subtest (e) mathematics, results indicate that TAP students were more successful in AP math than AVID students, but there was not a significant difference in the subject of math.

## **Discussion**

All students in this study were enrolled at the same Midwest, urban high school for grades nine through twelve. All students were enrolled in the traditional academic program, and half of them were also enrolled in the AVID elective array throughout their high school career. All students graduated high school with a regular diploma after four consecutive academic school years. The data would suggest that being in the AVID program did have a large impact on the students' academic success compared to those not in the AVID program.

The author of this dissertation serves this school as AVID district-level coordinator. In this position, my office must certify that the 11 AVID Essentials are

implemented with program fidelity. Those elements include: (a) student recruitment and selection requirements; (b) voluntary participation by students, staff, and parents; (c) AVID elective class is part of the regular school day; (d) enrollment in rigorous curriculum that satisfies college requirements; (e) introduction of a strong writing and reading curriculum; (f) introduction of inquiry for critical thinking skills; (g) emphasis on collaborative instruction; (h) academic assistance through tutoring with trained college tutors; (i) evaluation of program implementation through data collection and analysis; (j) district and school commitment to AVID funding appropriations and compliance; and (k) interdisciplinary site team collaboration (Guthrie & Guthrie, 2002)

This certification process is required by AVID annually. The school in this subject was certified an AVID school in 2009, and has retained its certification to date. The AVID academic support system is designed to support students in the academic middle and who have been traditionally underserved in advanced coursework to succeed in honors and Advanced Placement Courses (Nelson, 2007).

There were four academic success indicators tested over a four-year period of time in this study: grade point average, PLAN Test and ACT scale score results, success in honors courses, and success in AP courses. The subtests for success indicators examined were English, math, reading, social studies, and overall courses.

Grade point average means for AVID students rose over the high school time period when for core course subjects English and math. When other core courses were compared, GPAs fell slightly. Overall, they fell significantly. This is likely due to the level of rigor that AVID students were exposed to in honors and AP courses, discussed below. It is important to note that TAP students' GPA's fell or fell significantly while

they were not exposed to the same level of academic rigor. When the two groups are compared to each other, AVID students' twelfth grade GPAs were either higher or statistically significantly higher than TAP students.

PLAN Test and ACT scale score results for AVID students showed that three of five ACT subtests and the composite were statistically significantly higher than PLAN tests; the other two test scale scores were higher, but not statistically significantly higher. For TAP students three of the five ACT subtests and composite were higher, but not statistically significantly higher. Two subtests for the TAP went down slightly. Bearing in mind that these tests are used to predict college/career readiness, it is clear that students in the AVID group are better prepared academically. This finding is further supported by the results of question three. AVID students outperformed TAP students on the ACT in areas in all subtest scores and the composite scores, and the performance was statistically significant. AVID students scored statistically significantly higher than TAP students.

In comparing the AVID and TAP means on successful completion of honors courses between these two groups, there was truly no contest. Honors courses were successfully completed by AVID students at a significantly higher rate versus TAP students. This can be seen as a direct result of the AVID essential that all students in AVID program are enrolled in the most rigorous course work offered at the school.

In comparing the AVID and TAP means on successful completion of AP courses between these two groups, again, there was truly no contest. In every subtest and composite, AVID students successfully completed more AP courses than their TAP peers. Advanced Placement courses are typically taken in the junior and senior years of

high school. It is also worth noting here that for both honors course and AP courses, transcripts show that students who earned less than a “C” on an honors or AP course, took the course again to improve their grades. This is a testament to the power of the AVID elective teacher. These teachers’ goals, by AVID essential definition, require them to encourage students to improve rigorous academic performance throughout the high school career.

It is noteworthy to state that in examining the transcripts of the TAP students, very few took rigorous courses in their junior and/or senior years. Many TAP students took advantage of the “early out” system and left school after a partial day of studies. Others were involved in work student programs that, while accumulating credits for graduation, are not graded courses that could positively impact GPA or the other college/career readiness indicators in this study. This is testament to the power of the AVID site team, essential 11.

### **Implications for Policy**

Policy makers are encouraged to review the result of this study and investigate AVID for their school districts. Student success indicators can be positively impacted by implementing this academic support program. There is a cost to the AVID program. AVID Center estimates the cost per student (30 students in a class) at \$3.51 per day for a 180 day school year (AVID, 2012). These costs are mainly related to teacher training, although a small portion is used for classroom materials, tutors, and a membership fee. Right now, every school district across the country spends resources on these items, except for membership fees; administrators should investigate AVID for themselves, and determine if AVID is a program that will work for their students.

It is also worth noting that AVID is not a magic bullet or a quick-fix. All of the Essential Elements of AVID are truly best practices in teaching and supporting learners. From teacher training, to counselor, to administrator and to parent education practices, these strategies are both born from research and common sense about what works in education today. What AVID does, can be done without AVID. Identify students with the ability to rise to the challenge of more rigor in school, support them with direct instruction about rigorous curriculum, and students will meet those expectations.

### **Implications for Practice**

This research shows that implementing the AVID program augments the TAP offered in high schools today, and it will increase student achievement. This will lead to increased success in college and career readiness indicators for students. Ultimately, this will lead to better employment outcomes for students and this will have a positive impact on our society as a whole. In addition, if schools did not have the resources to invest in the AVID teacher training and certification process, it is possible for school leader to reorganize their school along AVID concepts. It is possible for school leaders to make sure that students in the academic middle of the spectrum are placed in rigorous courses and supported by that elective. It is possible for schools to dedicate one elective per year to intentionally teach students strategies to be successful in the most rigorous courses offered in the school. It is possible for educator training to reflect the basis of AVID, a rigorous and student-centered school focus. This study should provide background for just such a discussion.

**Implications for Further Research**

The AVID program has been the subject of many studies both by AVID as well as third parties and others seeking higher degrees across the country. All of those have focused on the teacher preparation essentials of AVID or the student profile and how it specifically targets those traditionally underserved in schools today. As the first of its kind, this study should be repeated to determine if the findings here can be replicated.



## REFERENCES

- Achieve. (May 2012). All students should graduate from high school ready for college, careers, and citizenship. Retrieved from <http://www.achieve.org/adp-network>.
- Adelman, C. (1999). *Answers in the Tool Box: Academic Intensity, Attendance Patterns, and Bachelor's Degree Attainment*. Washington, DC: U.S. Department of Education.
- Adelman, C. (2006). *The Toolbox Revisited: Paths to Degree Completion From High School Through College*. Washington, D.C.: U.S. Department of Education.
- ACT. (1998). Prediction research summary tables, Iowa City, IA: Author
- Akiba, M., LeTendre, G.K., & Scribner, J.P. (2007). Teacher quality, opportunity gap, and national achievement in 46 countries. *Educational Researcher*, 36 (7), 369-387.
- Allen, J., Robbins, S., Casillas, A., & Oh, I. (2007). *Effects of academic performance, motivation, and social connectedness on third-year college retention and transfer*. Manuscript submitted for publication.
- Alliance for Excellent Education. (2011). The high cost of high school dropouts: what the nation pays for inadequate high schools. Accessed at: [http://www.all4ed.org/publication\\_material/fact\\_sheets/high\\_cost](http://www.all4ed.org/publication_material/fact_sheets/high_cost)
- Arias, J.J., & Walker, D.M. (2004). Additional evidence on the relationship between class size and student performance. *The Journal of Economic Education*, 35 (4), 311-329.
- Aud, S., Hussar, W., Kena, G., Bianco, K., Frohlich, L., Kemp, J., Tahan, K. (2011). *The Condition of Education 2011* (NCES 2011-033). U.S. Department of Education,

National Center for Education Statistics. Washington, DC: U.S. Government Printing Office.

AVID. (2012). Decades of college dreams. Retrieved from <http://www.avid.org>.

Barton, P., & Coley, R. (2010). The Black-White achievement gap: When progress stopped. Policy Evaluation Research Center. Educational testing Service. Princeton, NJ.

Bergin, D.A., Cooks, H.C., & Bergin, C.C. (2007). Effects of a college access program for youth underrepresented in higher education: A randomized experiment. *Research in Higher Education, 48* (6), 727-750.

Boaler, J. (2002). Learning from teaching: Exploring the relationship between reform curriculum and equity. *Journal for Research in Mathematics Education, 33*(4), 239–258.

Bridgeland, J, Dilulio, J., & Burke-Morison, K. (2006). The silent epidemic: Perspectives of high school dropouts. Retrieved from <http://www.civicenterprises.net>

Casillas, A., Robbins, S., Allen, J., Kuo, Y., Hanson, M., & Schmeiser, C. (2012). Predicting early academic failure in high school from prior academic achievement, psychosocial characteristics, and behavior. *Journal Of Educational Psychology, 104*(2), 407-420. doi:10.1037/a0027180

Chapman, C., Laird, J., Ifill, N., and KewalRamani, A. (2011). *Trends in High School Dropout and Completion Rates in the United States: 1972–2009* (NCES 2012-006). U.S. Department of Education. Washington, DC: National Center for Education Statistics. Retrieved July 23, 2012 from <http://nces.ed.gov/pubsearch>.

- College Access Challenge Grant Program. (May 2012). Retrieved from <http://www2.ed.gov/programs/cacg/index.html>.
- College Board. (June 2012). Retrieved from <http://aphighered.collegeboard.org/exams>.
- Common Core State Standards Initiative. (May, 2012). Preparing America's students for college and career. Retrieved from <http://www.corestandards.org>.
- Darling-Hammond, L. (2010). *The flat world and education: How America's commitment to equity will determine our future*. New York: Teachers College Press.
- Darling-Hammond, L. (2000). Solving the dilemmas of teacher supply, demand, and standards: How we can ensure a competent, caring, and qualified teacher for every child. New York: National Commission on Teaching and America's future.
- Dee, T.S. (2007). Teachers and the gender gaps in student achievement. *The Journal of Human Resources*, 42 (3), 528-554.
- Early College High School Initiative. (May 2012). Retrieved from <http://www.earlycolleges.org>.
- Fine, M., Bloom, J., Burns, A., Chajet, L., Guishard, M., Payne, Y., & ... Torre, M. (2005). Dear Zora: A Letter to Zora Neale Hurston 50 Years After Brown. *Teachers College Record*, 107(3), 496-528. doi:10.1111/j.1467-9620.2005.00485.x
- Freedman, J. (2000). *Wall of fame*. San Diego, Calif.: AVID Academic Press in collaboration with San Diego State University Press.
- Gardner, D. (2007). Confronting the achievement gap. *Phi Delta Kappan*, March 2007, 542-546.
- Garet, M.S., Porter, A.C., Desimone, L., Birman, B.F., & Yoon, K.S. (2001). What

makes professional development effective? Results from a national sample of teachers. *American Educational Research Journal*, 38 (4), 915-945.

GEAR UP. (2012). Accessed June 1, 2012. Retrieved from

<http://www2.ed.gov/programs/gearup/index.html>.

Geiser, S., & Santelices, V. (2004). *The role of advanced placement and honors courses in college admissions. research & occasional paper series: CSHE.4.04*. Web

site: <http://cshe.berkeley.edu/>. Retrieved from

<http://search.proquest.com/docview/62070374?accountid=14692>

Halpin, G., Halpin, G., & Schaer, B. B. (1981). Relative effectiveness of the California

Achievement Tests in comparison with the ACT Assessment, College Board

Scholastic Aptitude Test, and high school grade point average in predicting

college grade point average. *Educational And Psychological Measurement*, 41(3),

821-827.

Houston, A.V., Byers, S.M., & Danner, D. (1992). A successful alternative to traditional

education: Seattle Middle College High School at Seattle Central Community

College. *The Journal of Negro Education*, 61 (4), 463-470.

Hubbard, L. (1999). College aspirations among low-income African American high

school students: Gendered strategies for success. *Anthropology & Education*

*Quarterly*, 30 (3), 363-383.

Hubbard, L., & Mehan, H. (1999). Race and reform: Educational 'niche picking' in

a hostile environment. *The Journal of Negro Education*, 68 (2), 213-226.

Kozol, J. (1991). *Savage inequalities: Children in America's schools*.

New York: Crown.

- Kannapel, P., Clements, S., Tayler, D., & Hibpshman, T. (2005). Inside the black box of high-performing high-poverty schools: A report from the Pritchard Committee for Academic Excellence. Lexington, KY: Pritchard Committee for Academic Excellence.
- Kober, N. (2001). It takes more the testing: closing the achievement gap. A report for the Center on Educational Policy. Washington, D.C.: Center on Educational Policy.
- Ladson-Billings, G. (2007). Pushing past the achievement gap: An essay on the language of deficit. *The Journal of Negro Education*, 76 (3), 316-323.
- Lareau, A. (1987). Social class differences in family-school relationships: The importance of cultural capital. *Sociology of Education*, 60 (2), 73-85.
- Lawless, K.A., & Pellegrino, J.W. (2007). Professional development in integrating technology into teaching and learning: Knowns, unknowns, and ways to pursue better questions and answers. *Review of Educational Research*, 77 (4), 575-614.
- Lee, J.S., & Bowen, N.K. (2006). Parent involvement, cultural capital, and the achievement gap among elementary school children. *American Educational Research Journal*, 43 (2), 193-218.
- Lee, J.S. (2002). Racial and ethnic achievement gap trends: Reversing the progress toward equity? *Educational Researcher*, 31 (1), 3-12.
- Levin, H.M., & Belfield, C.R. (2007). Educational Interventions to Raise High School Graduation Rates. In C.R. Belfield and H.M. Levin (Eds.), *The Price We Pay: Economic and Social Consequences of Inadequate Education* (pp. 177-199). Washington, DC: Brookings Institution Press.

- Levin, H., Belfield, C., Muennig, P., & Rouse, C. (2007). *The Costs and Benefits of an Excellent Education for All of America's Children*. New York, NY: Center for the Cost-Benefit Studies of Education Teachers College, Columbia University.
- Little, J.W. (1993). Teachers' professional development in a climate of educational reform. *Educational Evaluation and Policy Analysis, 15* (2), 129-151.
- Lozano, A., Watt, K.M., & Huerta, J. (2009). A comparison study of 12th grade Hispanic students' college anticipations, aspirations, and college preparatory measures. *American Secondary Education, v38 n1 p92-110* Fall 2009
- Lucio, R., Hunt, E., & Bornovalova, M. (2012). Identifying the necessary and sufficient number of risk factors for predicting academic failure. *Developmental Psychology, 48*(2), 422-428. doi:10.1037/a0025939
- Mendiola, D., Watt, K.M., Huerta, J. (In Press). The impact of advancement via individual determination (AVID) on Mexican American students enrolled in a four-year university. Unpublished dissertation. Accessed through AVID.org.
- McAlister, S., & Mevs, P. (2012). College readiness: A guide to the field. Annenberg Institute for School Reform. Brown University. Retrieved from <http://annenberginstitute.org/publications>.
- McRobbie, J. (2000). Career-long teacher development: Policies that make sense. A report produced by the Office of Educational Research and improvement, U.S. Department of Education. Published by WestEd, San Francisco, CA.
- Murphy, J. (2009). Closing achievement gaps: Lessons from the last 15 years. *The Phi Delta Kappan, 91* (3), 8-12.

Navigation 101. (May 2012). State of Washington office of the superintendent.

Retrieved from

<http://www.k12.wa.us/SecondaryEducation/CareerCollegeReadiness/default.aspx>.

Noble., J., & Sawyer, R., (2002). *Predicting different levels of academic success in college using high school GPA and ACT Composite Score*. (ACT Research Report 2002-4). Iowa City, IA: ACT.

No Child Left Behind (NCLB) Act of 2001, 20 U.S.C.A. § 6301 *et seq.* (West 2003)

Noguera, P. A. (2003). *City schools and the American dream: Reclaiming the promise of public education*. New York: Teachers College Press.

Oakes, J. (2000). Grouping and tracking. In A. E. Kazdin (Ed.) , *Encyclopedia of psychology, Vol. 4* (pp. 16-20). Washington, DC New York, NY USUS: American Psychological Association. doi:10.1037/10519-009

Opdenakker, M.C., & Van Damme, J. (2001). Relationship between school composition and characteristics of school process and their effect on mathematics achievement. *British Educational Research Journal*, 27 (4), 407-432.

Partnership for Assessment of Readiness for College and Careers. (April, 2012).

Retrieved from <http://www.parcconline.org>.

Philadelphia Youth Network. (April 2012). *Investing in Tomorrow's Workforce Today*.

Retrieved from <http://www.pyninc.org/aboutpyn/history.php>.

Pinkus, L. (2006). *Who's counted? Who's counting? Understanding high school graduation rates*. Washington, DC: Alliance for Excellent Education.

Pleis, J.R., Ward, B.W., & Lucas, J.W. (2010). *Vital and Health Statistics: Summary*

*Health Statistics for U.S. Adults: National Health Interview Survey, 2009*. Series

- 10: No. 249. Hyattsville, MD: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, National Center for Health Statistics.
- Pomeroy, E. (1999). The teacher-student relationship in secondary school: Insights from excluded students. *British Journal of Sociology of Education*, 20 (4), 465-482.
- Race to the Top Assessment Program. (May, 2012). Retrieved from <http://www2.ed.gov/programs/racetothetop-assessment/index.html>.
- Ramirez, A., & Carpenter, D. (2005). Challenging assumptions about the achievement gap. *The Phi Delta Kappan*, 86 (8), 599-603.
- Ross, J. A. & Bruce, C. D. (2007). Professional development effects on teacher efficacy: Results of a randomized field trial. *Journal of Educational Research*, 101(1), 50-60.
- Rumberger, R.W., & Thomas, S.L. (2000). The distribution of dropout and turnover rates among urban and suburban high schools. *Sociology of Education*, 73 (1), 39-67.
- Slavin, R.E., & Madden, N.A. (2006). Reducing the gap: Success for all and the achievement of African American students. *The Journal of Negro Education*, 75 (3), 389-400.
- Soderberg, L.J. (1988). Educators' knowledge of the characteristics of high school dropouts. *The High School Journal*, 71 (3), 108-115.
- Townsend, M., & Nack, D. (2010). Are high school GPA, rank in high school graduating class or ACT scores adequate predictors of college freshmen success?. *Dissertation Abstracts International Section A*, 70,
- Tyack, D., & Tobin, W. (1994). The 'grammar' of schooling: Why has it been so hard to change? *American Educational Research Journal*, 31 (3), 453-479.



- U.S. Census Bureau. (2010). *U.S. Census 2010 People: 2050 Projections*. Retrieved July 16, 2012 from <http://www.census.gov/newsroom/releases/archives/population>.
- U.S. Department of Education. (2012). Race to the Top Funding. Accessed July 10, 2012. Retrieved from <http://www2.ed.gov/programs/racetothetop/index.html>.
- U.S. Department of Education. (2012). Office of Postsecondary Education. Accessed July 15, 2012. Retrieved from <http://www2.ed.gov/about/offices/list/ope/trio/index.html>.
- Upward Bound Program. (May 2012). Retrieved from <http://www2.ed.gov/programs/trioupbound/index.html>.
- Venkatakrishnan, H., & Wiliam, D. (2003). Tracking and Mixed-ability Grouping in Secondary School Mathematics Classrooms: A case study. *British Educational Research Journal*, 29(2), 189-204. doi:10.1080/0141192032000060939
- Walker, E.N. (2006). Urban high school students' academic communities and their effects on mathematics success. *American Educational Research Journal*, 43 (1), 43-73.
- Watt, K.M., Johnston, D., Huerta, J., Mendiola, I.D. & Alkan, E. (2008). Retention of first-generation college-going seniors in the college preparatory program AVID. *American Secondary Education*, v37 n1 p17-40 Fall 2008
- Williams, T., Kirst. M., Woody, E., Levin, J., Perry, M., Haertel, E., et al. (2005). Similar students, different results: Why do dome schools do better? a large-scale survey of California elementary schools serving low-income students. Mountain View, CA. EdSource. Retrieved June 20, 2012 from <http://www.edsource.org/pdf/SimStu05.pdf>

Wyatt, N., & Mattern, K. (2011). *Low SES students and college outcomes*. Retrieved from <http://professionals.collegeboard.com/profdownload/pdf/RR2011-9.pdf>

Yoon, K., Duncan, T., Lee, S., Scarloss, B., Shapley, K. (2007). Reviewing the evidence on how teacher professional development affects student achievement. A report written for the Institute of Education Sciences. National Center for Education Evaluation. U.S. Department of Education.