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Investigating Relationships Between Academic Achievement and After School Programs in a High School Environment

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INVESTIGATING RELATIONSHIPS BETWEEN ACADEMIC ACHIEVEMENT AND AFTER SCHOOL PROGRAMS IN A HIGH SCHOOL ENVIRONMENT

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DEDICATION

I dedicate this work to my beautiful wife, Julie. Thank you for the support and freedom to pursue this goal. There are no words to express my gratitude or admiration. Proverbs 31:10 “Who can find a virtuous woman? For her price is far above rubies.”

I also dedicate this dissertation to my children, Grayson, Greta, and Coleman in faith that you will come to know the God that I love at an early age and invest your lives serving Him.

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The process of writing a dissertation is only possible with the assistance, encouragement, instruction, and support of many people from every part of life.

I want to acknowledge and thank the Lord Jesus Christ for the grace, mercy, and faith he freely gives.

To my advisor, Dr. Lynn Harrill, thank you for doing more than expected and for being committed to excellence. To the other committee members, Dr. Kelehear, Dr. DiStefano, and Dr. Jefferies, thank you for invaluable insight and challenging questions throughout the process.

In my professional career, there have been two people that have mentored me and encouraged me to pursue leadership positions. Although Coach Randy Burns and Dr. W. Rallie Liston are very different in style, they are excellent leaders and courageous Christian gentlemen. They are both good men in a storm.

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and honor of hard work. Your life story is a testament to the difference Christ makes.

Finally, I thank and acknowledge my Great Aunt, Mildred Ingram Duke. Your support and encouragement has been important. I had to finish this journey; I could not bear the thought of telling you I had failed.

ABSTRACT

The purpose of this study was to investigate if participation in an academically focused after school program could be linked with improved academic achievement as measured by a standardized test. A quantitative experimental design was utilized to explore the topic. The scale scores of participants in an academically focused after school program were compared to non participants to determine if there was a statistical difference between the groups. Additionally, the attendance level of participants in the academically focused after school program was correlated with their scale score on a standardized test in order to the relationship.

This study is significant because after school programs have become an important academic and social tool for both the schools and communities. After school programs are one way that the public school systems are meeting emerging academic and social challenges. The amount of capital and human resources invested in after school programs must be examined and justified.

The study yielded no statistically significant findings for any of the research questions. The scores of the participants in an academically focused after school program and non participants were not statistically different. Furthermore, the attendance level in the after school program and the scale score were not

significantly correlated. Although there were not any significant findings, it is worthy to note that the participants had higher mean scores on the HSAP test when compared to non participants in each of the twelve considered disaggregate groups. Even though the results were not statistically significant, they may be practically significant.

TABLE OF CONTENTS

DEDICATION.....	III
ACKNOWLEDGEMENTS	IV
ABSTRACT.....	VI
LIST OF TABLES	X
CHAPTER ONE INTRODUCTION.....	1
1.1 REVIEW OF LITTERATURE	4
1.2 STATEMENT OF PROBLEM	10
1.3 STUDY DESIGN.....	11
1.4 RESEARCH QUESTIONS.....	14
1.5 SIGNIFIGANCE	15
1.6 DELIMITATIONS AND LIMITATIONS	16
1.7 DEFINATIONS	18
1.8 ORGANIZATION OF RESEARCH	19
1.9 SUMMARY	20
CHAPTER TWO REVIEW OF LITTERATURE.....	21
2.1 INTRODUCTION	21
2.2 HISTORICAL PERSPECTIVE	23
2.3 HOMEWORK ASSISTANCE PROGRAMS	32
2.4 ACADEMIC ENRICHMENT PROGRAMS	34

2.5 NON-ACADEMIC PROGRAMS.....	36
2.6 ACADEMICALLY FOCUSED PROGRAMS.....	38
2.7 HALLMARKS OF SUCCESSFUL AFTER SCHOOL PROGRAMS	41
2.8 ACADEMIC ACHIEVMENT LINKED TO TIME	43
2.9 SUMMARY	45
CHAPTER THREE METHODOLOGY	47
3.1 INTRODUCTION	47
3.2 RESEARCH QUESTIONS.....	47
3.3 RESEARCH DESIGN	48
3.4 INSTRUMENTATION AND DATA COLLECTION	54
3.5 POPULATION AND SAMPLING	56
3.6 DATA ANALYSIS	58
3.7 DELIMITATIONS AND LIMITATIONS	61
3.8 SUMMARY	63
CHAPER FOUR RESULTS	64
4.1 INTRODUCTION	64
4.2 SAMPLE DEMOGRAPHICS.....	64
4.3 RESEARCH QUESITON ONE RESULTS.....	65
4.4 RESEARCH QUESTION TWO RESULTS	68
4.5 RESEARCH QUESTION THREE RESULTS	70
4.6 RESEARCH QUESTION FOUR RESULTS	73
4.7 SUMMARY	76
CHAPTER FIVE CONCLUSION	76

5.1 INTRODUCTION	76
5.2 SUMMARY OF STUDY	76
5.3 RESEARCH QUESTION ONE DISCUSSION	79
5.4 RESEARCH QUESTION TWO DISCUSSION	80
5.5 RESEARCH QUESTION THREE DISCUSSION	81
5.6 RESEARCH QUESTION FOUR DISCUSSION.....	83
5.7 FINDINGS RELATED TO RESEARCH	83
5.8 RECOMMENDATIONS FOR FURTHER RESEARCH.....	86
5.9 CONCLUSION.....	87
REFERENCES	90

LIST OF TABLES

Table 4.1 Sample Demographic Information.....	65
Table 4.2 Question one HSAP scale score descriptive statistics	66
Table 4.3 Inferential statistic results for question one sample scale scores.....	67
Table 4.4 Question two HSAP scale score descriptive statistics	68
Table 4.5 Inferential statistic results for male sample scale scores	69
Table 4.6 Question three scale score descriptive statistics.....	71
Table 4.7 Inferential statistic results for female sample scale scores.....	72
Table 4.8 Summary of statistical test information	73
Table 4.9 Question four HSAP scale score descriptive statistics	74
Table 4.10 Spearman r results correlation of level of participation and HSAP scale scores.....	74

CHAPTER ONE

INTRODUCTION

In the past twenty years, the number of after school programs has grown at a steady and impressive pace (Hess and Finn, 2007). The National Center for Education Statistics estimates that the percentage of public schools offering after school programs tripled between 1987 and 1999 (Chapman, Kleiner and Nolin, 2004). The increased funding from federal and local sources in conjunction with increased pressure to ensure achievement for every segment of the population has caused a proliferation of after school programs across the nation (Zhang and Byrd, 2006).

Although many privately funded after school programs exist, the funding for the explosion of after school programs has come in large part from expanded spending from the federal government. (Chapman, Kleiner and Nolin, 2004). The 21st Century Community Learning Centers (CCLC) program, the federal government's largest after school initiative to date, has experienced a steady budget increase since it began in 1994 (Dynarski et al, 2004). Federally funded after school programs operate for the purpose of fostering academic progress (Dynarski et al, 2004). After school programs provide students academic support in a variety of ways including homework assistance and academic enrichment (Zhang and Byrd, 2006). Additionally, after school programs can address

contextualized social problems, and build meaningful relationships between students and adults. (Zhang and Byrd, 2006).

The pressure that has developed over the last twenty years for achievement on standardized tests has been a significant factor in the expansion of after school programs (Dynarski et al., 2004). Between the years 1984 and 2004, many state and federal reforms have focused on helping students who have historically underachieved (Dynarski et al., 2004). In 1994, the 21st CCLC program provided stable federal funding for after school programs during non-school hours (Zhang and Byrd, 2006). The program was revised in 1998 and provided a mandate as well as monetary resources for academic and recreational activities during non-school hours (Zhang and Byrd, 2006). In 2002, the No Child Left Behind (NCLB) federal law was enacted and expanded the federal government's role in K-12 education. The NCLB Law is based on five principles: "(1) stronger accountability for results, (2) increasing flexibility and local control, (3) expanding options for parents, (4) putting reading first, and (5) emphasizing effective teaching methods (U.S. Department of Education [USDOE], 2005)." Furthermore, with the NCLB law enacted, the funding mechanism for 21st CCLC was modified, giving block grants to states to spend with greater flexibility in order to meet the specific academic and social needs particular to each community (Zhang and Byrd, 2006).

In addition to addressing academic needs, after school programs serve the larger community by providing structure and accountability for unsupervised youth in the critical hours between the dismissal of school and the parents' arrival

home from work (Fight, 2002). The Partnership for Family Involvement in Education (2005) reports that over twenty-eight million school aged children have either both parents, or their only parent in the workforce. Additionally, there are between five and fifteen million school aged children left unsupervised at home each week (Partnership, 2005). School aged children who are unsupervised during the hours following school are more likely to receive poor grades and drop out of school when compared to those students that are involved in structured activities (Partnership, 2005). The social need for after school programs is further emphasized by the fact that most juvenile crimes are committed between the hours of 2:00 PM and 8:00 PM (Fight, 2002).

Many after school programs attempt to address both the social and academic needs of the child (Fight, 2002). For instance, an after school program called the Police Action League (PAL) administered by the Baltimore police department focuses on keeping youth in high crime neighborhoods involved in constructive activities in the hours following the dismissal of school (Fight, 2002). Three years after the program was implemented, juvenile crime dropped over ten percent, and the teen victimization rate dropped over fifty percent (Fight 2002). In short, after school programs operate to fulfill two mandates: supervision and academics (Brecher et al, 2010). Both functions are integral to understanding the complete picture of after school programs in the United States of America. (Brecher et al, 2010)

There are many scholarly studies investigating the effectiveness of after school programs in order to promote academic achievement. Because most

after school programs are focused on the elementary students, there is limited research involving secondary schools and after school programs (Chung, 2005). This study is important because it adds to the body of scholarly work in an area that is limited.

A second reason this study is important is because of the high stakes nature of secondary tests. State exit exams, ACT, and End of Course/Grade tests are just a few examples of high stakes tests given during the secondary years. If participation in an after school program is linked to improved academic achievement on standardized tests, then students attending the after school program would have improved opportunity for post secondary education and a greater probability for high school graduation. This study will explore if participation in a particular after school program can be linked to improved academic achievement as measured by a standardized test.

1.1 Review of Literature

An after school program is any formal program that takes place following the dismissal of school (Zhang and Byrd, 2006). However, there are no set programmatic, curricular or personnel requirements that must be met in order for a program to be defined as an after school program (Zhang and Byrd, 2006).

Although an academic component is not mandatory for an after school program, most after school programs have enhanced academic achievement as a stated goal (Carr and Weigand, 2001). The organization funding the program frequently designs the curriculum to meet a particular set of objectives (Carr and

Weigand, 2001). For example, a program may focus on academic growth, healthy lifestyle, or the arts (Carr and Weigand, 2001). After school programs funded by NCLB or 21st CCLC have academic achievement as one of the stated goals (Carr and Weigand, 2001). The academic component may be focused on a variety of educational skills including, but not limited to, homework, organization, literacy, skill building, academic remediation, and academic enrichment (Reno and Riley, 2000). These programs are designed to provide struggling students with additional educational support or instruction (Carr and Weigand, 2001).

In addition to an academic component, an after school program may have other components designed to develop the whole student (Reno and Riley, 2000). Non academic components may include: character development, recreation activities, art, music, counseling, hobbies or mentoring (Reno and Riley, 2000).

As of 2006 most NCLB or 21st CCLC programs were located in elementary and middle schools (Zhang and Byrd, 2006). Secondary schools frequently have after school programs designed for the arts, recreation, or mentoring (Zhang and Byrd, 2006). Most after school programs in the secondary setting focus on tutoring or homework completion (Zhang and Byrd, 2006).

Researchers have not adopted consistent criteria for classification of after school programs into categories (Aspler, 2009). There are various typological processes throughout literature. For example, Hofferth, Brayfield, Deich and Holcombe (1991) classified after school programs based on six possible

programmatic outcomes: (1) providing adult supervision and safe environments; (2) providing a flexible, relaxed, and homelike environment; (3) providing cultural or enrichment opportunities; (4) improving academic skills; (5) preventing behavior problems; and (6) providing recreational activities. Another researcher, Fashola (1998), classified after school programs by content based categories: (1) language arts, (2) study skills, (3) academic programs in other curriculum areas, (4) tutoring for reading, and (5) community-based programs. Based on the research, this study classifies after school programs based on academic components. There are four principal models for consideration: (1) homework assistance program, (2) academic enrichment, (3) non academic and (4) academically focused. Each type has specific characteristics and provides differing academic assistance.

A homework assistance after school program is administered by a school or organization and is designed to assist students in completing homework and tutoring for the purposes of homework completion. It may or may not have a non academic component imbedded in the program and it may have improved academic achievement as a stated goal or outcome. One example of this type of program is the Gevirtz Homework Project (Cosden et al, 2001). The goal of the Gevirtz Homework Project was to provide students assistance with homework (Cosden et al, 2001). The Gevirtz Homework Project served a broad range of academic levels in the elementary schools of the Santa Barbara School District (Cosden et al, 2001). Students were expected to stay in the program for three years and attend the homework assistance three to four times a week for fifty

minutes (Cosden et al, 2001). The program was staffed by a licensed teacher and snacks were provided by the program (Cosden et al, 2001).

One hundred forty six students were selected for the program on a voluntary basis and were matched with a stratified non-participant for the purpose of comparison (Cosden et al, 2001). At the conclusion of the Gevirtz Homework Project, the researchers found no statistical difference in academic achievement, homework completion, school bonding and social behavior in the students that participated in the homework assistance program and students who did not participate in the homework assistance program (Cosden et al, 2001).

An academic enrichment after school program is administered by a school or organization and is designed to teach new concepts, to go beyond the basics, and support academic growth. This type program goes beyond merely assisting with homework, but may have homework completion as a goal or component. It seeks to support academic achievement through new instruction and experiences. Academic enrichment programs have a non academic component imbedded in the program. This non academic component may include mentoring, arts, athletics, or recreation. Academic enrichment programs have improved academic achievement as a stated goal or outcome.

For instance, a study by the State of California (2002) demonstrated the effectiveness of an after school program with two mandates: literacy and educational enrichment. This funding mechanism allowed for whole-child development processes to be utilized during the program in order to maintain

high interest and retain participants (California, 2002). Upon evaluation of the program, the data show a “positive impact on participating students’ achievement as measured by SAT-9 reading and math scores.... and improved grade point averages as reported by the local programs” (California 2002). Additionally this study linked participation in the after school program to improved attendance, improved attitude about school, and remarkably high levels of support from participants, parents, teachers, and administrators (California, 2002).

A non-academic after school program is administered by a school or private organization and designed to support academic growth through an array of non-academic components. Non-academic programs seek to engage students in non academic activities for the purpose of supervision, character development, and skill development. Examples of these types of programs would be after school art and choral programs as well as Boy/Girl Scouts. This type of program may or may not have a stated academic goal although some studies support a link between participation in a non academic after school program and improved academic achievement.

In 2005, a study conducted by Chung investigated 4th graders enrolled in the School Age Enrichment Program in Philadelphia. The after school program was centered on activities that promote learning and growth, such as art, dance, music, and sports (Chung, 2005). Although this non academic after school program did not include math instruction, participants gained an average of forty-five points on math achievement tests as compared to twenty-six points for non participants (Chung, 2005). The improved results are attributed to increases in

students' overall well-being, improved problem solving, improved interpersonal skills, and improved communication skills (Chung, 2005).

Another non-academic after school program was sponsored by the nonprofit organization Healthy Opportunities for Physical Activity and Nutrition and focused on physical activity and healthy eating (Coleman et al., 2008). The participants in this program were 4th and 5th grade students and the program had two major components: improved physical activity and nutrition (Coleman et al, 2008). The study utilized a survey and found a correlation among improved overall health, improved social behavior, and enhanced academic achievement (Coleman et al, 2008).

An academically focused after school program is administered by a school or organization and is exclusively academic, without any non-academic competing curricular components. This type of program has increased academic performance as a stated goal. For instance, a study conducted by Black et al. (2009) proposed to determine if providing direct, structured academic instruction in reading or math during after school hours improves performance in the academic subject. The study focused on students in grades two to five (Black et al, 2009). The study had several compelling conclusions: (1) participants in the study demonstrated a positive and statistically significant increase in mathematic achievement at the end of one year of instruction, (2) participants in the study demonstrated no statistically significant increase in mathematic achievement at the end of the second year of instruction beyond the gains made during the first year, (3) participants in the study demonstrated no statistically significant

increase in reading achievement at the end of one year of instruction and (4) participants in the study demonstrated a no statistically significant increase in reading achievement at the end of the second year of instruction(Black et al, 2009).

A review of literature illustrates the different models of after school programs and a variety of results each program yielded. Additionally, no preferred or systematic procedure has developed regarding nomenclature topic of research. This research has classified after school programs by academic components: (1) homework assistance, (2) academic enrichment, (3) non-academic and (4) academically focused.

1.2 Statement of Problem

The rise of accountability and the accompanying after school programs have spurred research into the effectiveness of different models, programs and methodologies of after school programs (Chung, 2005). Although there is significant research on the general topic of after school programs, there is minimal academic literature regarding secondary schools and after school programs. Because most NCLB/21st CCLC programs are located in elementary schools, there is greater opportunity for research in the younger grades (Chung, 2005). Moreover, there is a scarcity of literature involving the impact of academically focused after school programs on academic achievement in secondary school setting. Considering the academic effectiveness of after school programs in the secondary school context could help direct resources to students

with academic need in the secondary schools. Studying academically focused after school programs in the secondary setting could also help develop the curriculum and focus the scope of future after school programs. This study will explore if participation in an academically focused after school program can be linked to improved academic achievement for students demonstrating academic need. Furthermore, this study will attempt to link participation in an academically focused after school program with improved academic achievement on the South Carolina High School Assessment Program (HSAP) for students who score below the fiftieth percentile on the Measure of Academic Progress (MAP).

1.3 Study Design

The researcher will explore if participation in an academically focused after school program can be linked to an increase in academic achievement for second year high school students in academic need. The context of this study is a rural/small town high school in Spartanburg County, South Carolina that serves approximately eight hundred students in a ninth to twelfth grade structure. Sixty-eight percent of the school population qualifies for free/reduced lunch. The population is seventy-five percent White, twenty percent African American and five percent Hispanic.

This study will employ an experimental design with a control group, an experimental group, and a treatment. The participants in the experimental group are members of the above described high school and are selected by scoring below the fiftieth percentile on the Measure of Academic Progress (MAP), thus

demonstrating academic need. The participants in the control group are fifty randomly selected second year high school students from Spartanburg County High Schools who score between the first and the fiftieth percentile on the South Carolina High School Assessment Program (HSAP) test. The treatment that the experimental group will receive is participation in an academically focused after school program. The academically focused after school program lasts for twelve weeks and meets one time a week per subject area for thirty minutes. At the conclusion of the after school program, the HSAP data for the control group and experimental group will be compared to determine if a statistical difference is present. Moreover, the data for the males and the females in the control and experimental groups will be compared to determine if statistical differences are present. The final part of the study will explore if the level of participant attendance in the after school program is correlated to the associated scale scores on the HSAP assessment.

Data for the research will be collected ex post facto by request from the appropriate schools with all indentifying information redacted. The researcher will consider the appropriate data for the 2010-2011 and 2011-2012 school years.

Study Diagram

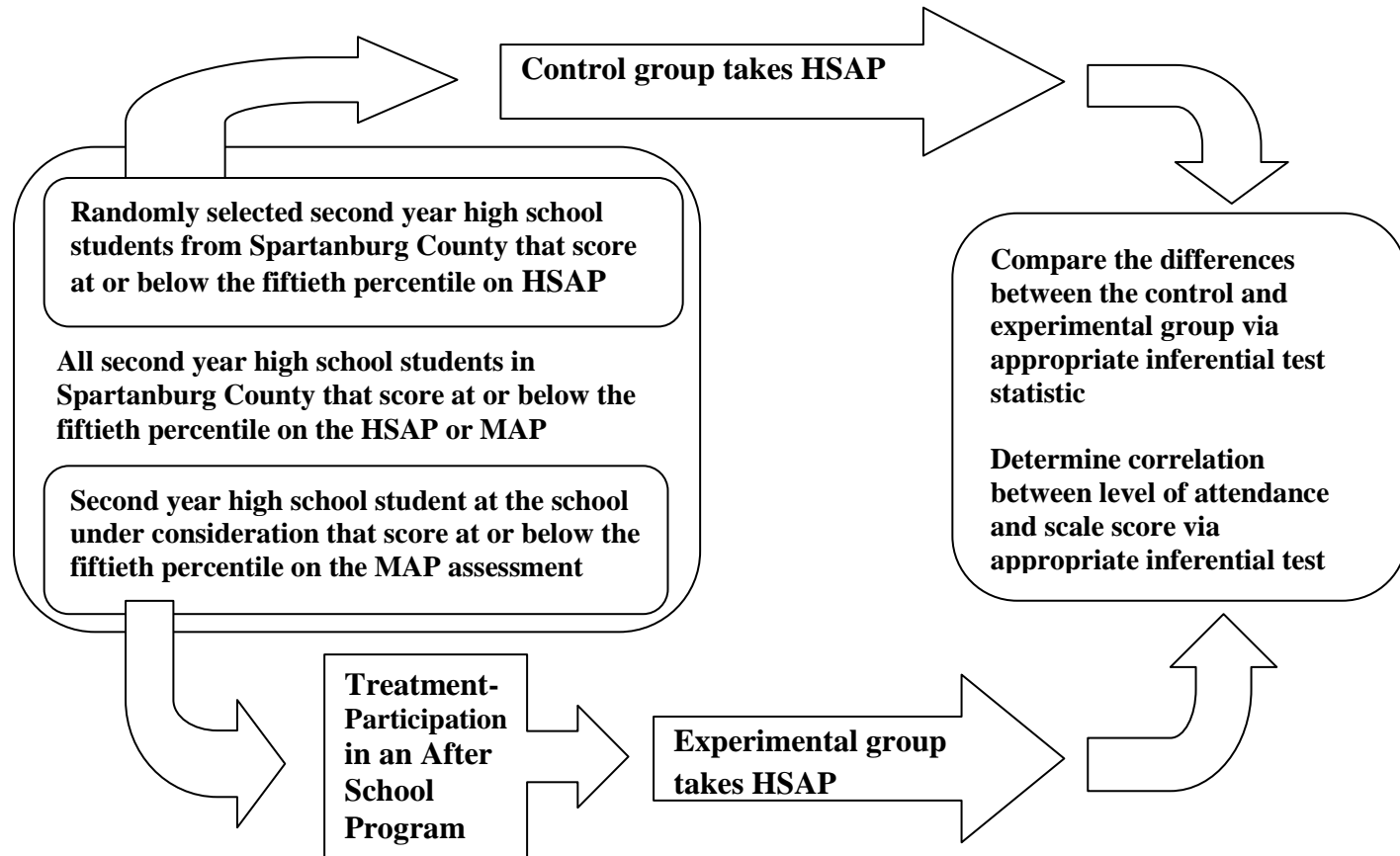


Figure 1.1 Study diagram illustrates research process

The study diagram illustrates the described research. The total population considered consists of all second year high school students in Spartanburg County, South Carolina that score below the fiftieth percentile on HSAP or MAP. The experimental and control groups are selected from this total population as shown in the diagram. The experimental group receives the treatment and then the data for the control and experimental groups are compared following the culminating test, the HSAP. The correlation question does not require a control group for consideration. The correlation question will attempt to determine if there is a link between the number of after school sessions attended and the scale score on the HSAP.

1.4 Research Questions

All Students

1. Is there a statistical difference between the mean scores on the HSAP test of students who participate in an academically focused after school program and the mean scores of the bottom fifty percent of all HSAP test takers in Spartanburg County, South Carolina in both English Language Arts and Mathematics?

Male Students

2. Is there a statistical difference between the mean scores on the HSAP test of male students who participate in an academically focused after school program and the mean scores of the bottom fifty percent of all male HSAP test takers in Spartanburg County, South Carolina in both English Language Arts and Mathematics?

Female Students

3. Is there a statistical difference between the mean scores on the HSAP test of female students who participate in an academically focused after school program and the mean scores of the bottom fifty percent of all female HSAP test takers in Spartanburg County, South Carolina in both English Language Arts and Mathematics?

Correlation

4. Is there a correlation between the level of student participation in an academically focused after school program and the scale scores on the HSAP for either the English Language Arts or the Mathematics component of the HSAP test?

Each research question is important to the overall study. Research questions two and three consider if the effectiveness of an academically focused after school program is gender specific. This is important to note because if the after school program is not effective for either boys or girls, then the educator needs to consider how to best meet the needs of each student. A great deal of time and money goes into after school programs and if the program is not effective, why continue the effort? The final research question considers if the level of participation in an academically focused after school program relates to the scale score. This question is important because it will help the administrator consider the scope and length of a program in relation to the overall program effectiveness in improving student achievement as indicated by HSAP.

1.5 Significance

Public schools have served notable and valuable purposes since its inception. Academically preparing the next generation of citizens has been one of the cornerstones of the American educational system (Dynarski et al., 2004).

This study is significant because after school programs have become an important academic and social tool for both the school and community (Dynarski et al., 2004). The proliferation of after school programs is one way that the public school systems of America are meeting academic and social challenges (Dynarski et al., 2004). The amount of capital and human resources invested in after school programs must be examined and justified (Farmer-Hinton, 2004). In broad terms, this study will examine the relationship between an academically focused after school program for high school students and academic achievement as measured by a standardized test. This research will assist in constructing the informed literature regarding the academic impact of after school programs on the secondary level.

1.6 Delimitations and Limitations

Although this quantitative study serves to augment to the current body of research on the relationship between participating in an academically focused after school program and increased academic achievement, one must use caution when making generalizations based on this research. There are several limitations and delimitations that apply.

The researcher imposed the following delimitations:

First, this study is delimited by context. The researcher only examined students in the second year of high school attending a particular high school in rural upstate South Carolina. The students examined were all identified as being at the fiftieth percentile or below of all standardized test takers. The researcher did not examine other data or contexts.

Secondly, the researcher only used the South Carolina High School Assessment Program test in mathematics and Language Arts to collect data on academic achievement. This research is delimited by the extent to which this test is reliable and valid.

A third delimitation is the assumed correlation between the students in the control and experimental groups prior to the treatment. The researcher assumes similar populations are identified by bottom fiftieth percentiles scores on the HSAP and the MAP. Moreover, the researcher recognizes that the research is delimited other possible economic, social, cultural or academic differences in the control and experimental groups.

A fourth delimitation is the differing level of expertise and vigor invested in the after school program by each instructor. The study did not control for differences related to the skill of the instructor.

The researcher noted the following limitations:

First, the study is limited by student motivation. Because students were selected by MAP scores and required to attend, students may not be motivated to work hard. Therefore, the study is limited by student motivation and apathy.

Secondly, the study is limited by attendance. Although, participation in the program is required, attendance discrepancies could impact overall results.

Another limitation is teacher skill and motivation. Approximately twenty teachers were utilized to provide instruction of this academically focused after school program. The level of teacher skill and motivation are not controlled and may cause a disparity in the result.

1.7 Definitions

There are several terms that this study will utilize. For the sake of convenience and clarity, operational definitions are given below:

After school program - Any formalized program for children that takes place in the hours directly after school is dismissed. There is not a particular programmatic or curricular requirement necessary for a program to be considered an after school program.

Homework Assistance after school program - After school programs administered by a school or organization designed to assist students in completing homework and tutoring for the purposes of homework completion.

Academic Enrichment after school program- After school programs administered by a school or organization designed to teach new concepts, to go beyond the basics, and support academic growth.

Non Academic after school program- After school programs administered by a school or private organization that supports academic growth through a possible array of non academic components.

Academically Focused after school program - Any program for children that takes place in the hours directly after school is dismissed that has academic achievement as the exclusive goal.

Academic Achievement –Academic achievement is measured by the performance of a student on the South Carolina High School Assessment Program (HSAP) test. For this study, academic achievement on the HSAP is defined as passing both the mathematics and English Language Arts portions of the HSAP test.

Participant - Any student who attended ten or more of the academically focused after school instructional sessions.

After school program attendance- Attendance is defined as a student being present during the entire after school instructional session.

1.8 Organization of Research

The balance of this study is divided into four chapters. Chapter Two is the review of literature involving after school programs. In Chapter Two, after school programs will be examined from a programmatic and historical view. Each of the four types of after school programs will be reviewed with examples. Chapter Three presents the research design and methodology for the study. Chapter Four

contains the data, analysis and results for each research question. Chapter Five summarizes the study, discusses the findings and then presents conclusions and recommendations. The research concludes with references.

1.9 Summary

After school programs serve a variety of needs that are as individual as each community. Each after school program has a focus and goal from which the curriculum and practice flow. Most after school programs have an academic component as a part of the overall program. Given the requirements of No Child Left Behind and the limitations of time and space in the school day, educators have adopted after school programs as a method of lengthening the school day for the neediest students. Accountability and justification naturally accompanies the increased flow of funds. Empirical data is needed to determine if after school programs are worth the resources that the state and federal government have invested. There is limited research involving after school programs and secondary schools, and there is even less involving academically focused after school programs and secondary schools. The purpose of this study is to examine the relationship between participation in an academically focused after school program and academic achievement for secondary students.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

The term “after school program” is used to refer to any structured program that occurs in the three to four hours directly after school is dismissed (American Youth Forum, 2006). There are several common terms that are synonymous with after school programs including “Out Of School Time Programs” and “Extended Day Programs” (Black, 2004). Regardless of the chosen name, each particular program has curricular requirements and structural constraints that are set forth by the funding source of the program (Aspler, 2009).

The purpose of this chapter is to organize and synthesize the current body of research regarding after school programs in relation to this research. Specifically, scholarly literature will be reviewed in order to understand the current body of knowledge regarding the relationship between academic achievement and after school programs. Currently, there is no consensus on classification or nomenclature regarding after school programs (Aspler, 2009). Each researcher classifies after school programs based on the individual constraints and requirements of the research (Aspler, 2009). The study will classify and analyze after school programs based on the curricular components employed by the after

school program. After school programs will be organized based on the following criteria:

1. Homework Assistance Programs - After school programs administered by a school or organization designed to assist students in completing homework and tutoring. Homework assistance programs may or may not have a non-academic component imbedded in the program. Homework assistance programs have improved academic achievement as the stated goal or outcome.

2. Academic Enrichment Programs - After school programs administered by a school or organization designed to teach new concepts, to go beyond the basics and support academic growth. This type program goes beyond just help with homework, but may have homework completion as a goal or component. It seeks to support academic achievement through new instruction and experiences. Academic enrichment programs have a non-academic component imbedded in the program. The non-academic component may include mentoring, arts, athletics, or recreation. Academic enrichment programs have improved academic achievement as a stated goal or outcome.

3. Non-Academic Programs - After school programs administered by a school or private organization that support academic growth through a possible array of non academic components. Non-academic programs seek to engage students in non academic activities for the purpose of supervision, character development, and skill development. Examples of this type of program would be

after school art and choral programs as well as Boy/Girl Scouts. Non-academic programs typically do not have an academic stated goal although they often provide some academic benefit.

4. Academically Focused Program - After school programs that are exclusively academic. There are no competing curricular components of the program. Academically focused programs have increased academic performance as a stated goal.

The literature review will begin with a historical perspective on after school programs and continue with an analytical review of each of the above listed classifications of after school programs. Following the discussion of each of the types of after school programs, the literature review will focus on the link between after school programs and academic achievement. Next, chapter two will discuss the hallmarks of highly effective after school programs. The literature review will conclude with a summary of the current state of research.

2.2 Historical Perspective

Halpern (2003) conducted a historical review of after school programming since its inception. After school programs began during the last twenty-five years of the eighteen hundreds (Halpern, 2003). During this twenty five year period, several societal changes caused the American family to need additional supervision for children following school (Halpern, 2003). One of the changes was the enactment of child labor laws limiting the number of hours and the age at which children could be employed (Halpern 2003). Another important factor was

the advent of compulsory education began taking root in several states around the nation (Halpern, 2003). Moreover, schools were more geographically accessible due to the increasing urbanization of America brought on by the Industrial Revolution (Halpern, 2003). Children who lived in urban areas had easy access to a large number of peers in a small urban neighborhood (Halpern, 2003). One unforeseen result of the newly enacted child labor and compulsory education laws was the new phenomenon of unsupervised youth and the accompanying anti social behavior (Halpern 2003). During these years, there was a notable increase in crime and criminal behavior from youths in the hours following the dismissal from school (Ascher, 2006). Criminal and delinquent behavior in school aged children has been linked to inadequate supervision during the hours after school (Walker and Abreton, 2005).

The first after school programs were designed to rescue boys and girls from the dangers of industrialized life in the urban communities during the final quarter of the eighteen hundreds (Halpern, 2003). These programs were organized by individuals or churches and were often no more than a safe place for children to play games and socialize (Halpern, 2003). By the turn of the century, after school programs typically provided a wide variety of gender specific activities (Halpern, 2003). For example, a boy may have opportunities in metal working, wood working, radio repair, debate, hiking, or photography (Halpern, 2003). Likewise, girls who participated in after school programs may have been offered activities in health, first aid, music, dress making, or etiquette (Halpern, 2003).

Once the legal working age had been reached, some after school programs of the era began to prepare urban boys and girls for various vocations (Halpern, 2003). The vocational education component grew naturally from the activities the after school programs were already implementing (Halpern, 2003). During the early period of after school programs, schools were largely uninvolved in student life beyond the end of the school day. The local schools did not want to take on the additional responsibility of after school supervision in addition to the established educational duties (Halpern, 2003).

Early in the nineteen hundreds, government and civic leaders recognized an existing conflict between the unsupervised urban youth and the need of society to maintain law and order (Halpern, 2003). In the first quarter of the 1900's, municipal authorities began to provide outdoor playgrounds and indoor organized recreational activities for children in order to address the growing safety and criminal concerns (Halpern, 2003). The modern After School movement would develop out of these foundations.

The Great Depression changed the focus and funding for after school programs (Halpern, 2003). Children used after school programs as a refuge to escape homes that were economically and psychologically depressed (Halpern, 2003). During this same time period, funds for after school programs diminished and many closed or had to scale back the variety of activities (Halpern, 2003).

The election of Roosevelt, the advent of New Deal, and the onset of World War II brought many new societal pressures and changes (Halpern, 2003). In

order to aid the war effort and to supplement a depleted work force, women entered the work place in record numbers (Halpern, 2003). Because the nation desperately needed the women in the work force, the federal government began to provide limited funds to support after school programs so children would be supervised and women could work in industrial and military production (Bodilly and Beckett, 2005). This was the first time federal dollars supported after school programs (Gayle, 2004). According to Gayle (2004), before World War II, government and civic leaders thought the responsibility for supervising youth after school was best left to community organizations, such as the YMCA and Boy Scouts of America. After school programs helped supervise children and provide positive support to families with both parents involved in the war effort (Bodilly and Beckett, 2005).

The post war years can be characterized as a return to the pre-war normalcy and traditional routines (Halpern, 2003). Likewise, after school programs reverted back into the models popular in the pre-war years (Halpern, 2003). In the late 1950's and early 1960's society again began to change in several critical ways that prompted significant changes in how after school programs would operate for the next thirty years (Halpern, 2003). First, Juvenile Delinquency entered the national conscience and brought fear and concern to families across the country (Halpern, 2003). Juvenile delinquency is behavioral disorder characterized by despondent anti-social behavior and is especially prevalent in males in their mid to late teens (Halpern, 2003). Juvenile delinquency became a national concern and after school programs became a tool to protect youth from

the associated negative influences (Halpern, 2003). After school programs began initiatives to enhance the self esteem of children and give them an opportunity to succeed in vocations, athletics and the arts (Halpern, 2003). Secondly, many urban neighborhoods became toxic environments for the families living there (Halpern, 2003) These low income neighborhoods were once stable, working class, family oriented environments; now they were being assailed by unemployment, drugs, gangs, and the disintegration of the family unit (Halpern, 2003). Street gangs and turf wars in low income urban areas became common (Halpern, 2003). Drugs became ubiquitous on the streets for the first time during this era and contributed to both juvenile delinquency and the breakdown of urban neighborhoods (Halpern, 2003). Administrators of after school programs were now struggling with management and discipline issues of the participants (Halpern, 2003). It is also during this era when after school programs began to experiment with providing academic assistance for struggling students (Halpern, 2003). The academic assistance offered was most often not formalized and took the form of help with homework or tutoring on an individual basis (Halpern, 2003).

During the 1970's and 1980's, the number of two-income families continued to increase, and the need for positive outlets for children in the hours after school continued to grow (Halpern, 2003). Accordingly, the number of after school programs continued to grow steadily and slowly during these two decades with minimal increases in federal and state funds. During these decades, the federal government began targeting high poverty environments for special programs to

assist in the supervision of at risk youth during the hours after school (Halpern, 2003). During this period, after school programs continued to offer recreational, vocational, and entertainment outlets for children (Halpern, 2003). There was limited academic assistance for students participating in after school programs (Halpern, 2003).

Throughout the 1990's and 2000's, after school programs have experienced an increase in the number after school programs and a change in the overall focus (Halpern, 2003). The onset of the educational accountability movement and the accompanying federal and state dollars has given rise to greater numbers of after school programs than ever before (Halpern, 2003). Most of the new after school programs that were started between 1990 and 2000 were administered by local schools (Halpern, 2003). These schools needed additional time for academic assistance and remediation with struggling students (Halpern, 2003). Academic remediation and achievement became the primary focus of after school programs during these decades (Halpern, 2003). Additionally, government and civic leaders came to understand that it is more economical to provide structure to children after school than to try to incarcerate and rehabilitate juvenile delinquents (Gayle, 2004). Moreover, a critical mass of scholarly research connected after school programs with providing effective help for at risk youth (Gayle, 2004).

During the mid 1990's, states began after school initiatives to provide academic support and social structure during the critical hours after the dismissal of school (Gayle, 2004). For instance, the state of Georgia created a statewide

after school program known as the 3:00 Project. This project addressed at risk middle school aged children and was also designed to promote safety and academic success through tutoring and homework assistance (Gayle, 2004). Likewise, Tom Caper, then serving as the Governor of Delaware, spearheaded a statewide after school program designed to improve academic performance of low-performing students in mathematics, science, English, and social studies (Gayle, 2004). Under his leadership, Delaware invested over twenty million dollars in extending instructional time and providing additional support to struggling students (Gayle, 2004). Legislators in California launched a statewide after school program known as the After-School Learning and Safe Neighborhoods (Gayle, 2004). This particular program was designed to provide literacy, safety, and academic support for students beginning in kindergarten and continuing through the ninth grade (Gayle, 2004).

The federal government's effort to regulate and fund After school programs began with Senator James Jeffords of Vermont and Representative Steve Gunderson of Wisconsin who introduced the 21st Century Community Learning Centers Act (21st CCLC) (Gayle, 2004). This act was designed to provide grants to rural and inner-city public schools for academic achievement and overall student growth (Gayle, 2004). Officials in the Clinton administration sought this opportunity as a means to promote their out-of-school time agenda (Gayle, 2004). In President Clinton's first fiscal year, the 1993 budget, he proposed an 800 million dollar increase to the 21st CCLC program over a five-year period (Gayle, 2004). This new funding source dramatically increased the number of

after school programs and funded new services in existing after school programs (Gayle, 2004). By fiscal year 2001, the federal budget for the 21st Century Community Learning Centers was 845.6 million dollars (Gayle, 2004). President Bush's No Child Left Behind (NCLB) law continued in this movement by mandating 250 million dollar increases to the 21stCCLC program each year for the next six years, reaching a level of 2.5 billion dollars in fiscal year 2007 (Gayle, 2004). Gayle (2004) states that in less than one decade, the 21st CCLC program grew from a small pilot project to an integral part of the nation's largest federal education reform law since 1965.

The shift in funding from private to public has changed the format, scope, and models of after school programs (Dynarski et al, 2004). The No Child Left Behind legislation changed the model that the federal government used to issue funds for after school programs to the states (Zang and Byrd, 2006). Prior to NCLB, only the after school programs that met the uniform requirements of the federal law were funded by the federal government (Zang and Byrd, 2006). NCLB allowed states to apply for federal block grants with broader implementation guidelines (Zang and Byrd, 2006). The block grants gave states greater flexibility to implement after school programs to meet the specific needs of the students (Zang and Byrd, 2006). The federal block grants provided to states and then in turn to local organizations had fewer federal stipulations and allowed greater freedom to meet contextual needs (Archer, 2004).

The change from 21st CCLC to NCLB impacted the curriculum of after school programs in addition to the funding mechanism (Archer, 2004). At its inception,

in order to qualify for a 21st CCLC grant a program had to provide academic support, wide ranging enrichment opportunities in the arts and music, and offer family literacy (Zang and Byrd, 2006). The federal block grants made academic achievement and reaching historically underachieving groups the curricular and fiscal mandates of NCLB After school programs (Archer, 2004). NCLB legislation has brought an increased focus and emphasis on the individual student by requiring states to test every student in English, math, science, and social studies in grades three to eight (Archer, 2004). Additionally, NCLB mandated that federally funded after school programs be used to enhance student learning and be based on scientific research (Zang and Byrd, 2006).

Currently, there are more after school programs available than ever before (Zang and Byrd, 2006). The models and curricula are as varied as the funding mechanism and community needs allow (Zang and Byrd, 2006).

A survey of current research does not yield a consistent classification methodology for after school programs. Individual research studies classify after school programs formally and informally based on the design and purpose of the research. This study will classify after school programs based on the academic component in the after school program. An analysis of current research reveals four general types of after school programs based on academic components:

1. Homework Assistance Programs
2. Academic Enrichment Programs
3. Non Academic Programs

4. Academically Focused Program

Each type of program has been evaluated by the literature and will be reviewed and analyzed individually.

2.3 Homework Assistance Programs

A homework assistance after school program is any after school program administered by a school or organization designed to assist students in completing homework and tutoring for the purpose of homework completion. Homework assistance programs have been a staple of the after school program for over twenty years (Cooper et al, 2006). This model relies on the premise that time spent on academics is highly correlated to improved grades and academic achievement (Cooper et al, 2006). In successful homework assistance after school programs participants and parents of participants value the program as positive and view the program useful in achieving the stated academic or social goals (Gayle, 2004). Additionally, successful homework assistance programs have a teaching staff that is vested in the school's academic performance (Gayle, 2004). In other words, a successful homework assistance after school program will be staffed by teaching faculty from the school (Gayle, 2004). When the faculty in a homework assistance program is invested in the overall academic program at the school, then they improve communication between stakeholders and they are actively involved in recruitment and retention of participants in the homework assistance program (Gayle, 2004).

There is descriptive research to support the notion that student participation in a homework assistance program has a positive impact on academic achievement (Hollister, 2003). Hollister (2003) conducted a study that relied on a survey completed by participants, parents of participants, and instructors. This study established a link between participation and improved academic achievement (Hollister, 2003). Instructors report that 40-50% of the participants in homework assistance after school programs demonstrated an increase in the amount of completed homework (Hollister, 2003). Parents of participants report that 85% of participants reaped a benefit from participation in a homework assistance program (Hollister, 2003). The surveys completed by students show that over 50% of the students believed that participation in a homework assistance program helped them to improve academic performance (Hollister, 2003).

An examination of experimental research into a homework assistance programs' efficacy for improving academic achievement has yielded mixed results. One study conducted on elementary students in California required that randomly selected students participate in homework activities for at least forty-five minutes three times a week (Codsens et al, 2001). The researchers collected data for students in both the control and experimental group regarding homework completion, GPA, and SAT-9 scores (Codsens et al, 2001). The research showed no significant difference ($p < 0.1$) between the control and treatment groups (Codsens et al, 2001).

In another Homework assistance program study, over 900 children in grades three to seven were randomly assigned to a control and experimental group (Philliber, Kaye and Herrling 2001). The experimental group was required to participate in a homework assistance program for at least thirty minutes three times a week (Philliber, Kaye and Herrling 2001). The control group did not participate in a homework assistance program (Philliber, Kaye and Herrling 2001). The four hundred eighty-five participants of the treatment group had a significant increase in the quality and completion of their homework over the four hundred fifty-six control participants ($p < .05$) (Philliber, Kaye and Herrling 2001).

The homework assistance program is a widely employed model for the after school programs. Although the homework assistance model is quite popular, the literature is not conclusive regarding the efficacy for increased academic performance as measured by standardized tests. There is significant evidence to support a link between participation in a homework assistance program and increased homework completion.

2.4 Academic Enrichment Programs

An academic enrichment program is an after school program designed to teach new concepts, to go beyond the basics, and support academic growth. Academic enrichment after school programs are designed to promote academic achievement by direct academic instruction and through a non academic component. These non-academic components may incorporate music, art,

dance, athletics, mentoring, or help with homework in conjunction with academic instruction in order to impact the total child (Miller 2001).

After school programs utilizing the academic enrichment model appear to have higher levels of influence on the academic achievement than after school programs designed in the homework assistance model (Miller, 2001). In 2005, the National Association of Elementary School Principals studied ten academic enrichment after school programs that served at risk youth in differing contexts. The participants demonstrated higher levels of homework completion and an increase in academic achievement when compared to levels before participation in the study (Miller, 2001).

Another study conducted by the University of Chicago by Whalen (2007) analyzed a system wide effort to implement academic enrichment after school programs in Chicago area schools (Whalen, 2007). The study included over 110 schools implementing specific programs in response to contextualized measures (Whalen, 2007). Each site had to design and submit a specific plan to provide direct academic enrichment and to engage the total child (Whalen, 2007). The program duration was three years and empirical data points were measured every year through standardized tests (Whalen, 2007). The study concluded that “no strong relationship, positive or negative, emerged between linking the number of days of attendance to improved math or reading course grades” (Whalen, 2007). Furthermore, “attendance at the program correlated very weakly, but positively with reading percentile, math percentile, and science percentile” (Whalen, 2007).

In contrast, a study in California (2002), suggests the effectiveness of an after school programs that had only two mandates: literacy and educational enrichment. Non academic components were also allowed by the funding mechanism and were broadly employed (California, 2002). Upon evaluation of the program, the data shows a “positive impact on participating students’ achievement as measured by SAT-9 reading and math scores.... and improved grade point averages as reported by the local programs” (California, 2002). Additionally, this study linked participation in the afterschool program and improved attendance, improved attitude about school, and unusually high levels of support from participants, parents, teachers, and administrators (California, 2002).

Research supports a contextualized link between academic enrichment after school programs and increased academic achievement. The specific curriculum, staffing, and commitment of the stakeholders all impact the overall success of the program. An academic enrichment after school program may improve academic achievement if the context and contributing factors work together effectively.

2.5 Non-Academic Programs

Non-academic after school programs are the oldest type of after school programs (Halpern, 2003). These programs do not have an academic component, but may have an academic benefit due to the other components of the program. They have their roots in the last quarter of the 1800’s (Halpern, 2003). In recent years non-academic after school programs have fallen out of

vogue due to the abundance of public dollars that require an academic component of some variety (Chung, 2005).

In 2002, Stephan P. Klein and Roger Bolus of Gansk and Associates conducted a study involving fourth graders and a non academic after school program (Chung, 2005). The after school program curriculum involved creative outlets like art, dance, music, and sports (Chung, 2005). Even though there was no mathematical instruction during the program, the participants in the program gained an average of 45 points on the mathematics achievement test during the course of the school year, as opposed to 26 points for non-participating classmates (Chung, 2005). The researchers attribute the results to the students' overall well-being, improved problem solving, improved interpersonal skills, and improved communication skills (Chung, 2005). This study linked a change in the "soft skills" to the increased academic performance as measured by a standardized test (Chung, 2005).

Another study by Galvin (2010) highlighted the overall positive outcomes that an academic after school program provides. The study examined an after school program designed to teach fitness, nutrition, and personal responsibility (Galvin, 2010). The Colorado based study was a two phase approach (Gavin, 2010). Phase one was the creation of an after school fitness club for low socioeconomic status students (Gavin, 2010). The club met twice a week for sixty minutes (Gavin, 2010). Each session included a thirty minute fitness lesson, and a thirty minute lesson on either nutrition or responsibility (Galvin, 2010). The second phase of the study involved a club wide community service project (Galvin,

2010). The service project allowed the students a live venue to demonstrate the newly acquired skills for responsibility and fitness that has been at the core of the curriculum (Galvin, 2005). At the conclusion, of the study, students involved in the non academic after school program showed greater responsibility in school as demonstrated by attendance records and homework completion (Galvin, 2005). The students also demonstrated higher levels of personal fitness than other low socioeconomic students (Galvin, 2005). The researchers did not explore if participation in this non academic after school program correlated with increased academic achievement as measured by grades or standardized tests (Galvin, 2005)

Non academic after school programs are successful at engaging the whole child and providing meaningful activity during the hours after school. Research informs us that participation in non academic after school programs highly correlates with improved academic success as measured by improved attendance, improved homework completion and improved levels of responsibility. In short, students who participate in non academic after school programs may develop non academic skills that may in turn lead to greater levels of academic achievement.

2.6 Academically Focused Programs

An academically focused after school program has academic achievement or enrichment as its only goal. There are no other competing curricular or programmatic components. Generally speaking, academically focused after school programs have a strong record of supporting academic achievement on standardized tests, especially in mathematics. Furthermore, academically focused after school programs also have issues with consistent participation and participant motivation.

One example of an academically focused after school program involved twenty four at-risk students in grades seven to nine (Hock et al, 2001). The students were identified as at-risk by academic record and teacher recommendation (Hock et al, 2001). The parents or guardians had to support the placement in the program (Hock et al, 2001). Each participant received one on one specific tutoring from a trained researcher during the duration of the program (Hock et al, 2001). The researcher worked with the students, teachers, and parents to target specific weaknesses for each child (Hock et al, 2001). Each child participated in two tutoring sessions per week for four to twelve weeks depending on the specific needs of the student (Hock et al, 2001). At the end of the study, participants had higher semester grades and higher grades on classroom assessments than they had before participation in the program (Hock et al, 2001).

In a study conducted by Black et al (2009), researchers sought to determine a link between structured academic instruction in reading or math during after school hours and increased performance in the academic subject. The researchers identified twenty-seven after school centers across ten states in urban, rural and suburban settings (Black et al, 2009). The study focused on students in middle and upper elementary school that voluntarily attended one of the selected academically focused after school programs and were between one and two grade levels behind in both math and reading (Black et al, 2009). Each identified participant received forty five minutes of direct academic instruction in a small group setting either one or two times a week depending on the academic need of the child (Black et al, 2009). The program took place over a one or two year period (Black et al, 2009). The intervention curriculum was prescribed by the researchers and each participating instructor in the program pledged to implement the curricular components with fidelity (Black et al, 2009). Academic achievement was measured by scores on the SAT 10 total math and reading scores (Black et al, 2009). The study had several intriguing conclusions: (1) participants in the study demonstrated a positive and statistically significant increase in mathematics achievement at the end of one year of instruction, (2) participants in the study demonstrated no statistically significant increase in mathematics achievement at the end of the second year of instruction beyond the gains made during the first year, (3) participants in the study demonstrated no statistically significant increase in reading achievement at the end of one year of instruction and (4) participants in the study demonstrated no statistically

significant increase in reading achievement at the end of the second year of instruction (Black et al, 2009). Black, Somers, Doolittle, and Unterman (2009) noted that the academic intensity and rigor implemented by the participating after school programs were greater than expected by both faculty and participants. Furthermore the study noted that participant and instructor retention was problematic over the two year period (Black et al, 2009).

Academically focused after school programs have a strong track record of enhancing academic achievement, especially in mathematics. The programs often have problems with retention and motivation of both participants and instructors.

2.7 Hallmarks of Successful After school programs

Although there are a variety of after school program models, successful programs all share certain characteristics. Commitment of instructors and motivation of students are two of the most commonly listed factors in a successful after school program. For example, a three-year study of high-quality after school programs gathered data by survey of participants, parents of participants, and instructors found that in order to facilitate positive student outcomes, the program must include the following characteristics: physical and psychological safety, appropriate structures, supportive relationships, opportunities to belong, positive social norms, support for efficacy, opportunities for skill building, and integration of family, school, and community efforts (Chung, 2005).

Huang and Cho conducted a study in 2009 to investigate the characteristic of a high functioning after school programs. Cho and Huang (2009) used academic performance of attendees and teacher survey results as their primary method of measuring success. All of the programs considered served at least fifty participants and had at least two years of operational history with the same curricular format (Cho and Huang, 2009). They found that a high functioning after school programs had several things in common (Cho and Huang, 2009). First, there was a focus on academics by the instructors and participants (Cho and Huang, 2009). Huang and Cho (2009) also found that teaching study skills in the after school program was a significant commonality among successful after school programs. These skills include note taking, organizational skills, time management skills, and test preparation skills (Cho and Huang, 2009). Furthermore, successful after school programs employed some sort of comprehensive motivational strategy in order to keep participants involved (Cho and Huang, 2009). These strategies may include a mentoring program, a reward system, or other extrinsic motivational strategy (Cho and Huang, 2009). Finally, successful after school programs have a vital connection with the school the participant attends (Cho and Huang, 2009). A connection with the day school reinforces the importance of academic achievement and provides needed insight regarding the specific needs of students (Cho and Huang, 2009).

In a similar study, Baker (2006) studied after school programs with moderate or profound academic success as defined by the study and measured by a nationally normed standardized test. Baker (2006) found three common

characteristics among the successful after school programs. The first characteristic common to successful after school programs is long term commitment to the program (Baker, 2006). Successful after school programs had high commitment from the administrators, parents, participants, and teaching faculty (Baker, 2006). All the stakeholders viewed the after school program as a vital part of the total school curriculum; not just a passing fad (Baker, 2006). The second common characteristic of successful after school programs is specific mission and goals (Baker, 2006). The stakeholders understood the specific goals of the program and worked every day to see the mission implemented and goals achieved (Baker, 2006). Finally, Baker (2006) found that fully training the teaching faculty was an important factor in the success of an after school program. For a program to be successful, the teaching faculty needed to understand the curriculum and instructional expectations of the after school program (Baker, 2006). Furthermore, Baker (2006) found that the most common factors associated with poor after school programs were lack of commitment of the teaching faculty and disorganization of the total program.

2.8 Academic Achievement Linked to Time

One of the fundamental questions this research will seek to answer is: Does more time spent on academics directly relate to improved academic achievement? This question has been explored in research, but does not have a clear answer due to the contextualized nature of each study.

The Office of Research, Planning and Evaluation from the Long Beach Unified School District have compiled data on the relationship between extended day programs and achievement. The Long Beach report fails to link results on achievement and instructional time.”(Long Beach Unified School District Office of Research, Planning and Evaluation, 2000). The Long Beach Office report states, “Research results on the academic and social advantages of extended school day and extended school year programs are not conclusive.”(Long Beach Unified School District Office of Research, Planning and Evaluation, 2000).

The US Department of Education, The Institute of Science, and the National Center for Education Evaluation conducted nationwide research to establish a relationship between additional time in after school programs on instruction and student achievement. As with similar studies, the findings were inconclusive in determining a link between additional time of instruction and increased academic achievement. This research did suggest a relationship between after school programs and a reduction in negative behaviors in schools and communities (Dynarski et al, 2004).

Conversely, the California Department of Education assessed the statewide “After School Learning and Safe Neighborhoods Partnership Program” and found “a direct relationship between gains in math and the amount of participation in the program” (Peterson, 2005). Results also showed that participating students showed a 2.5 times greater improvement in math scores than non-participating students. In addition, attendance of participating students improved as well (Peterson, 2005).

Pardini's (2001) research involving the effects of time on academic achievement suggest that time may not be the chief component for increasing academic achievement. This research implies a relationship between the quality of instruction and commitment of the instructors and participants as critical factors. Leon Botstein (2006) warns that we must be cautious when considering a lengthening of the school day. He asserts that the key determinant in improving achievement is not the amount of time that students spend in school, but rather how they spend it (Botstein 2006). He asserts that lengthening the school day based on the current instructional model will actually lower achievement (Pardini, 2001).

Raquel Farmer-Hinton (2002) states the following, "the literature suggests that additional learning time is beneficial, and after-school programs, when developed properly, can serve academic, social, and interpersonal needs." Research dictates that several factors are critical when designing an after school program that is likely to produce academic gains (Baker, 2006). Although, some research suggests that after school programs have a negligible or negative impact on student achievement, there are many after school programs that experience great success (Chung, 2005).

Summary

Over the last twenty years, after school programs have spread all over the country in various formats and models. The rise of the modern after school program was created out of a response to changes in the overall society. For

example, the growth of after school programs during the World War II era was in response to greater numbers of women in the workforce. In recent years, NCLB provided funds for after school programs to be used as resources to improve academic achievement of students needing more academic support and in historically underachieving groups. The review of the literature demonstrates that there is no evidence that after school programs unilaterally improve student achievement. There are, of course, many examples of after school programs that link participation in a particular program and improved academic achievement (Botsein 2006).

It was interesting to note that many of the successful programs shared many of the same traits such as having well trained tutors, strong relationships and high levels of commitment between the tutors and the students, and specific goals (Baker, 2006). The success of the program depends on the organization, curriculum, and goals of the program and the context in which it is implemented.

CHAPTER THREE

METHODOLOGY

3.1 Introduction

Chapter Three describes the process of how the study will be conducted and how the results will be acquired. The first part of chapter three deals with the research questions and design of the research. The second part of chapter three relates to population and sampling. Next, the chapter explains instrumentation and data collection process utilized in the research. The fourth part of chapter three outlines how data will be analyzed. Finally, chapter three ends with a discussion on limitation and delimitations and a summary of the chapter.

3.2 Research Questions

All Students

- 1 Is there a statistical difference between the mean scores on the HSAP test of students who participate in an academically focused after school program and the mean scores of the bottom fifty percent of all HSAP test takers in Spartanburg County, South Carolina in both English Language Arts and Mathematics?

Male Students

- 2 Is there a statistical difference between the mean scores on the HSAP test of male students who participate in an academically focused after school program and the mean scores of the bottom fifty percent of all male HSAP test takers in Spartanburg County, South Carolina in both English Language Arts and Mathematics?

Female Students

3. Is there a statistical difference between the mean scores on the HSAP test of female students who participate in an academically focused after school program and the mean scores of the bottom fifty percent of all female HSAP test takers in Spartanburg County, South Carolina in both English Language Arts and Mathematics?

Correlation

4. Is there a correlation between the level of student participation in an academically focused after school program and the scale scores on the HSAP for either the English Language Arts or the Mathematics component of the HSAP test?

3.3 Research Design

This study examined if participation in an academically focused after school program significantly impacted academic achievement for low achieving students. The context of this study was a rural/small town high school in Spartanburg County, South Carolina that served approximately eight hundred students in a ninth to twelfth grade structure. Sixty-eight percent of the school

population qualified for free/reduced lunch. The population was seventy-five percent White, twenty percent African American and five percent Hispanic. The community was primarily blue collar and there was a strong connection between the school and the community. The community and school both valued athletics, discipline, and academic rigor.

The first part of the research employed a classic experimental design: a control group, an experimental group, and a treatment. The hypothesis for the first part of the study was as follows: would participation in an academically focused after school program cause an increase in academic achievement as measured by a standardized test when compared to similar students who did not participate in an academically focused after school program. The control group was comprised of a random selection of second year Spartanburg County High School students that scored at or below the fifth percentile on the High School Assessment Program (HSAP) and that did not participate in an academically focused after school program. The experimental group was made up of second year high school students from the context described in the previous paragraph that scored at or below the fiftieth percentile in the Measure of Academic Progress (MAP) and participated in an academically focused after school program. The treatment for the experimental group was participation in an academically focused after school program. A student had to attend at least ten after school tutorial sessions in order to be considered a member of the experimental group.

The academically focused after school program consisted of twelve tutoring sessions per discipline, each lasting thirty minutes. Participants in the after school program were selected to participate in either the English after school program, the mathematics after school program or both based on the scores on the MAP assessment. The academically focused after school program took place one or two day(s) a week (based on the English / mathematics / both selections) directly after school in the twelve weeks leading up to the culminating standardized test, the High School Assessment Program (HSAP). The curriculum of the course was prescribed and each instructor was trained in the implementation of the curriculum. The curriculum was organized into daily lessons. Each lesson stressed one skill. The instructor explained the highlighted skill and then provided examples as appropriate. The students then worked sample problems. The tutorial period ended with the teacher working the sample problems and discussing the answers with the students. In order for a student's data to be eligible for the experimental group, the student had to attend at least ten after school tutorial sessions. A student had to attend at least ten after school tutorial sessions in order for the data to be considered for the experimental group.

Research questions one, two and three were addressed by using a two sample independent t-test in order to compare differences between the participants in the control and experimental groups. Creswell (2009) states that an independent t-test is appropriate to investigate a difference in the means between two samples when there is one independent variable, one dependent

variable, a normal distribution of scores and equal variance between the samples. If the data does not meet the assumptions of the t-test, then the researcher will use the appropriate nonparametric counterpart, the Mann-Whitney U test. The Mann-Whitney U test compares the mean rankings for each group. The Mann-Whitney U assumes random samples, independent samples and at least an ordinal measure. The Mann Whitney U test is robust with respect to the assumption of random sampling. Furthermore, the researcher compared the data of male participants and the female participants from the control and experimental groups using the appropriate test.

The fourth research question was addressed utilizing the research design described for the experimental group. A Pearson Product Moment Correlation or appropriate non-parametric was employed to explore the strength of the relationship between the scale score on the HSAP and the number of after school sessions attended for participants in the academically focused after school program. For the fourth research question, any level of participation in the academically focused after school program was considered. Creswell (2009) states that the Pearson Product moment correlation is appropriate when there are two or more independent variables, one dependent variable, a linear relationship between the correlated variables and the normally distributed data. If the data fails to meet the assumptions of the Pearson Product Moment Correlation then the researcher will employ the appropriate non parametric counterpart, the Spearman Rank Correlation. The Spearman Rank Correlation is a measurement of the strength of correlation between two ranked variables. The

Spearman Correlation assumes only that the data to be correlated is at least on the ordinal scale.

Typically, the alpha level for research of this nature is .05. The .05 alpha level controls for a false positive error 5% of the time. Due to the number of tests utilized in this study, the probability of obtaining a false positive was increased. In order to account for the increased probability of a type one error, the alpha level for this research was set by dividing .05 by the number of test performed per family of questions (4). The alpha level for all the research questions in this study was .0125. The probability of a type one error was reduced from 5% to 1.25%. As the probability of a type one error decreased, the likelihood of a type two error increased. Thus, the probability of type two error, accepting a false null, was increased as the alpha level was decreased.

Study Diagram

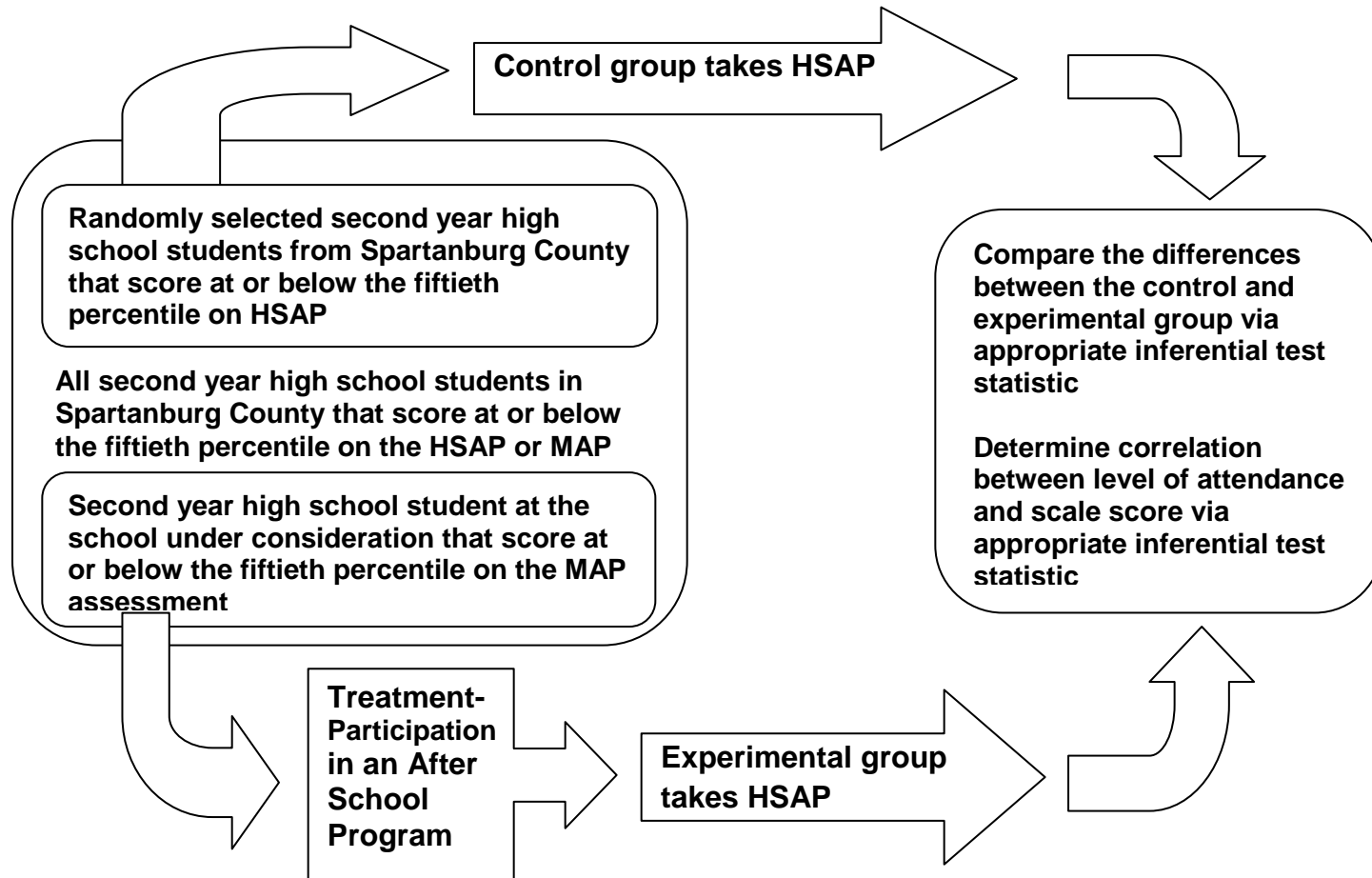


Figure 3.1 The Study Diagram illustrates the research process

The study diagram illustrates the research process. The control group consisted of randomly selected second year high school students in Spartanburg County that score at or below the fiftieth percentile on the HSAP test. The experimental group was drawn from the control group as noted in the conceptualization. The experimental group underwent the treatment and then took the HSAP test. The control group took the HSAP test with no treatment. Following the HSAP, the data for the control and experimental groups was compared to determine if there was a statistical difference. The correlation question did not require a control group for consideration. The correlation question determined if there was a correlation between the scale score on HSAP and the number of after school sessions attended by a participant.

3.4 Instrumentation and Data Collection

The study required the following data to be collected for research questions one, two and three: (1) The HSAP scale score in ELA and mathematics for the experimental group for academic school year 2010-2011 and 2011-2012, (2) the HSAP scale score in ELA and mathematics for the control group for academic school year 2010-2011 and 2011-2012, (3) the MAP scale score in ELA and mathematics for the experimental group, (4) the attendance of the participants in the academically focused after school program in the experimental group, and (5) the gender associated with each scale score in the control and experimental group. The fourth research question required the following data to be collected: (1) The HSAP scale score in ELA and mathematics for the any student that attended the academically focused after school program for academic school

year 2010-2011 and 2011-2012 and (2) the attendance for any student that attended the academically focused after school program. Collecting and analyzing data from two academic school years replicated the study and provided additional strength to the findings.

The High School Assessment Program (HSAP) and the Measure of Academic Progress (MAP) were the instruments required to explore research questions. The Measure of Academic Progress (MAP) is a computer adaptive achievement test in reading, language usage, mathematics and science (NWEA, 2011). This study only utilized the reading and mathematics portions of the MAP assessment. MAP is administered in all fifty states and was normed with current data in 2011 (NWEA 2011). The MAP assessments are developed and administered by the Northwest Evaluation Association (NWEA, 2011). The MAP assessment is widely used as a formative assessment and is easily correlated to specific state standards (NEWA, 2011).

The South Carolina High School Assessment Program (HSAP) is the latest South Carolina high school exit exam and is rooted in the South Carolina Curriculum Standards. The HSAP has two parts: mathematics and English Language Arts. The mathematics section contains both multiple choice and constructed response questions. The English Language Arts section contains multiple choice, constructed response questions, and an essay. The test is administered over a three day period to all second year high school students in the state of South Carolina. Scores are reported to the student and the school in both continuous and discrete formats. The HSAP test is important in South

Carolina because a passing score is required in order for a student to receive a South Carolina High School Diploma.

The 2010-2011 and 2011-2012 HSAP scale scores for both the control and experimental groups were obtained by request from each school district and high school in Spartanburg County. First, the researcher obtained permission to contact the school principal from the appropriate district representative. Next, the researcher requested that each principal develop a spreadsheet with the HSAP ELA and mathematics scale scores and gender for the spring of 2011 and spring 2012 administrations of the HSAP exam. Additionally, the researcher requested that any identifying information be redacted and that only a spreadsheet with 3 data columns be sent to the researcher. Finally, the researcher parsed the data and discarded the data that does not fall between the first and fiftieth percentile.

Furthermore, the 2010-2011 and 2011-2012 MAP scores for the experimental group, and the attendance for the participants in the academically focused after school program were obtained by a similar procedure from the cooperating district and school. When the researcher obtained these data, the identifying information was not removed. The researcher created a new database without any identifying information and then destroyed the original data.

3.5 Population and Sampling

The overall population considered for this research was all second year high school students in Spartanburg County South Carolina that scored between the first and fiftieth percentile on a normalized standardized test. The two normalized

standardized tests used to identify the population were the High School Assessment Program (HSAP) and the Measure of Academic Progress (MAP).

For research question one, two, and three a control and experimental group were selected. The total control group for each academic school year was comprised of fifty ELA HSAP scale scores, fifty mathematics HSAP scale scores and their associated gender were randomly selected from the population. The experimental group was selected by three criteria. First, an experimental group member had to be a member of the high school described as the context of the research. Secondly, the students had to score between the first and fiftieth percentile on the MAP test administered mid school year. Thirdly, the student had to attend at least ten academically focused after school program sessions in a given discipline.

The second and third research questions related respectively to male and female sub-groups of the total population. The data for research questions two and three was parsed from data collected for research question one. For example, all the data for research question two was included in research question one. Conversely, the sum of the data for research question two and three was the total data used for research question one.

The sample for the fourth research question was also selected by three criteria. First, to be selected for the sample for the fourth research question, a student had to be a member of the high school described as the context of the research. Secondly, the students had to score between the first and fiftieth

percentile on the MAP test administered in mid school year. Thirdly, the student had to attend at least one academically focused after school program session.

Furthermore, the researcher assumed that the control and experimental groups were academically similar prior to the administration of the treatment. Additionally, the control and experimental groups were discrete and mutually exclusive.

3.6 Data Analysis

Once the required data was collected from the schools, the researcher compiled the data and then parsed it based on academic year, HSAP scale score in ELA and mathematics, and gender. The researcher used Microsoft Excel and created a separate spreadsheet for each part of research question one, two, and three holding the associated aggregate data. The researcher used Microsoft Excel and created a separate spreadsheet for each part of research question four holding the associated aggregate data. The researcher employed StatCrunch, a commercial statistical software package, and calculated the appropriate descriptive and inferential statistics.

Once the data was appropriately parsed, the researcher confirmed the assumptions for the appropriate test. Upon first inspection, an independent t-test was the appropriate inferential test for research questions one, two, and three. The two assumptions associated with a t-test are normal distribution for each data sets and the equal variance between the data sets. In order to verify normality of the data, the researcher plotted the data in a histogram and a QQ

plot with correlation coefficient. The researcher then checked the values for skewness and kurtosis to determine if they were within normal limits. The histogram and QQ plot did not indicate normality. As a result, the Shapiro-Wilk test was utilized to establish normality. Equal variance was established by using the Statcrunch program and determining the F-statistic. If a data set met the appropriate assumptions for a t-test, then the t-test was employed to determine the potential differences between the scale scores of the control and experimental groups. If the assumptions for the t-test were not met, then the appropriate non parametric test was used, the Mann Whitney U test. The Mann-Whitney U assumes random samples, independent samples, and at least an ordinal measure. Data was appropriately disaggregated in order to address each part of research question one, two, and three. Then the data was imported from Microsoft Excel to the Statcrunch program in order to calculate all necessary descriptive and inferential statistics.

Once the data was obtained and assumptions met, the appropriate test was employed to determine if significant differences existed between the control and experimental groups. The researcher used the Statcrunch program to perform the test. The researcher used an alpha level at .0125 for each appropriate inferential statistical test. Each research question had multiple parts. For instance, research question one had four associated tests: (1) 2010-2011 HSAP ELA, (2) 2010-2011 HSAP mathematics, (3) 2011-2012 HSAP ELA and (4) 2011-2012 HSAP mathematics.

The fourth research question was addressed by employing a correlation test to quantify the association between the HSAP scale score and the number of after school tutorial sessions attended. Upon first inspection, the Pearson Product Moment Correlation is appropriate for research question four. The Person Correlation reflects the degree of linear relationship between two variables (Creswell, 2009). The two variables in this research question were the number of after school sessions attended and the scale score on the HSAP test. Similar to a t-test, there are four assumptions that must be met before the Pearson Product Moment Correlation can be employed. The four assumptions are: (1) data must be have an approximate normal distribution, (2) no significant outliers, (3) a linear relationship between variables and (4) continuous variables.

In order to verify normality of the data, the researcher plotted the data in a histogram and a QQ plot with correlation coefficient. The researcher then checked the values for skewness and kurtosis to determine if they were within normal limits. The histogram and QQ plot did not indicate normality. As a result, the Shapiro-Wilk test was utilized to establish normality. A scatter plot graph was used to determine if there was a linear relationship between the variables and to check for outliers. The data was classified as continuous. Since assumptions for the Pearson Correlation were not met, then the researcher used the appropriate non parametric test, Spearman Rank Correlation. Once the data were obtained and assumptions met, the appropriate correlation statistic was employed to determine if there was a correlation between the scale score on the HSAP and the number of after school program tutorial sessions attended. The researcher

appropriately built a database order to address the research question. The data was imported from Microsoft Excel to the Statcrunch program in order to calculate all necessary descriptive and inferential statistics.

Once the data was obtained and assumptions met, the appropriate test was utilized to determine if significant correlation existed between the HSAP scale scores and the number of after school program tutorial sessions attended. The Statcrunch program was utilized in order to perform the statistical test for question four. An alpha level of .0125 was used for each inferential statistical test.

3.7 Delimitations and Limitations

There are limitations to how this study can be generalized to the population as a whole. Additionally, the study had certain parameters that the researcher determined. The researcher recognized certain limitations and imposed certain delimitations. The researcher imposed the following delimitations:

First, this study was delimited by context. The researcher only examined students in the second year of high school that attended a particular high school in rural upstate South Carolina. The students examined were all identified as being at the fiftieth percentile or below of all standardized test takers. The researcher did not examine other data or contexts.

Secondly, the researcher only used the South Carolina High School Assessment Program test in mathematics and English Language Arts to collect

data on academic achievement. This research is delimited by the extent to which this test was reliable and valid.

A third delimitation was the assumed correlation between the students in the control and experimental groups prior to the treatment. The researcher assumed similar populations were identified by the bottom fiftieth percentile scores on the HSAP and the MAP. Moreover, the researcher recognized that the research was delimited by other possible economic, social, cultural or academic differences in the control and experimental groups.

A fourth delimitation was the differing level of expertise and vigor invested in the after school program by each instructor. The study did not control for scale score differences due to the skill level of the instructor.

The researcher noted the following limitations:

First, the study was limited by student motivation. Because students were selected by MAP scores and required to attend, students may not have been motivated to work hard. Therefore, the study was limited by student motivation and apathy.

Secondly, the study was limited by attendance. Although, participation in the program was required, attendance discrepancies could impact overall results.

Another limitation was teacher skill and motivation. Approximately twenty teachers were utilized to provide instruction of this academically focused after

school program. The level of teacher skill and motivation were not controlled and may cause a disparity in the result.

3.8 Summary

Chapter three discussed the methodology of the research. It began by outlining the design of the research. Next, the research questions and sampling were examined. Following that, the instrumentation used, the data collection methods, and the data analysis process were outlined. Chapter three concluded with an explanation of the limitations and delimitations of the research. Chapter four will discuss the results of the research.

CHAPTER FOUR

RESULTS

4.1 Introduction

This study investigated the effect of student participation in an academically focused after school program on academic achievement for students scoring in the bottom fifty percentile on a standardized test. Additionally, the study explored the relationship between attendance in an academically focused after school program and the HSAP scale score. The context of the research is a rural high school of about eight hundred students in Spartanburg County, South Carolina. Data was collected from the years 2011 and 2012 as described in Chapter Three. The aggregate data was then parsed in order to address all parts of the research question. Chapter four provides the data, analysis, and results of the described research. This chapter begins with a discussion of the sample.

4.2 Sample Demographics

Research questions one, two, and three used control and experimental groups. Data must be collected for every part of the research question. The selection process for each group was outlined in chapter three and data was collected from the 2011 and 2012 administrations of the HSAP assessment.

Figure 4.1 gives the demographic information for the control and experimental groups. The data for the control and experimental groups were then parsed in order to address research question one, two, and three.

The data for research question four was the combination of the associated experimental data plus the data for students who attended less than ten after school program tutorial sessions. The demographic information for question four is also summarized in table 4.1.

Table 4.1
Population Demographic Information

Data Set	N	Female	Male
2011 ELA-Experimental	50	25	25
2011 ELA-Control	50	24	26
2011 Math Experimental	38	18	20
2011 Math-Control	50	16	34
2012 ELA-Experimental	33	15	18
2012 ELA-Control	50	20	30
2012 Math Experimental	26	12	14
2012 Math-Control	50	23	27
2011 ELA-Question Four	60	30	30
2011 Math-Question Four	46	23	23
2012 ELA-Question Four	44	19	24
2012 Math-Question Four	32	14	17

The next section of chapter four will investigate all parts of each research question. All four research questions will be examined utilizing the same format: (1) descriptive statistics for each part of the question, (2) assumptions for each part or the question, and (3) results of each appropriate inferential test statistic.

4.3 Research Question One Results

The objective of the first research question was to examine the difference between the scale scores on the HSAP test for students who participated in an academically focused after school program and for students in Spartanburg County that score below the fiftieth percentile on HSAP. This was conducted in both English Language Arts and mathematics. The first research question had four parts to consider: 2011 English Language Arts, 2011 mathematics, 2012 English Language Arts, and 2012 mathematics. Descriptive statistics for each part of question one are given in table 4.2.

Table 4.2
Question one HSAP scale score descriptive statistics

Total Sample	n	Mean	Variance	Std. Dev.	Sk.	Ku.
2011ELA Experimental	50	210.86	305.71	17.48	-0.17	-0.59
2011 ELA Control	50	209.24	181.04	13.46	-0.78	0.10
2011MathExperimental	38	209.45	211.88	14.56	1.08	1.24
2011 Math Control	50	203.78	202.46	14.23	-0.79	-0.09
2012 ELA Experimental	33	208.39	184.37	13.58	-0.94	0.05
2012 ELA Control	50	206.26	249.34	15.79	-1.08	0.97
2012Math Experimental	26	207.85	113.74	10.66	-0.65	0.33
2012 Math Control	50	202.36	261.83	16.18	-0.76	-0.12

To determine if there was a difference among the groups, an independent t-test was conducted. First, the assumptions of an independent t-test were examined. An independent t-test assumes that the data for each sample is normally distributed and that variances are equal among the samples. No part of

research question one met the required assumptions for an independent t-test. Because the requirements of an independent t-test were not met, the Mann Whitney U test was utilized. The Mann Whitney U test is the appropriate non-parametric counterpart to the independent t-test.

Creswell (2009) states that the Mann Whitney U test is recommended when distributions are not normal and there is one independent variable and one dependent variable. The Mann Whitney test assumes independent samples, random samples, and measurement on at least the ordinal scale. The data met the assumptions of independence and scale, but not random sampling. Even though the experimental group was not a random sample, the test statistic was robust with respect to sample size. Therefore, the Mann Whitney test was appropriate. The results for each part of research question one are given in table 4.3.

Table 4.3
Inferential statistic results for question one sample scale scores

Sample	n1	n2	Diff. Est.	Test Stat	P-Value	Test
2011 ELA	50	50	1	2595.5	0.3146	Mann Whitney
2011 Math	38	50	3	1803.5	0.1724	Mann Whitney
2012 ELA	33	50	1	1421.5	0.3722	Mann Whitney
2012 Math	26	50	4	1120	0.097	Mann Whitney

Because the p-value for each test was greater than the established alpha value of .0125, the Mann Whitney test results yielded no statistical difference in the sample of scores for the associated control and experimental groups in research question one.

4.3 Research Question Two Results

The purpose of the second research question was to investigate the difference between the scale scores on the HSAP test for male students who participated in an academically focused after school program and male students of Spartanburg County that scored below the fiftieth percentile on HSAP. This was conducted in both English Language Arts and mathematics. The second research question has four parts to consider: 2011 Male English Language Arts, 2011 Male mathematics, 2012 Male English Language Arts, and 2012 Male mathematics. Descriptive statistics for each part of question one are given in table 4.4.

Table 4.4
Question two HSAP scale score descriptive statistics

Male Only Sample	n	Mean	Variance	Std. Dev.	Sk.	Ku.
2011 ELA Experimental	25	209.52	387.26	19.68	-0.21	-0.90
2011 ELA Control	26	209.12	160.67	12.68	-0.46	-0.68
2011 Math Experimental	18	207.28	190.21	13.79	1.15	2.21
2011 Math Control	34	202.97	214.27	14.64	-0.90	0.15
2012 ELA Experimental	18	206.39	220.02	14.83	-0.80	-0.32
2012 ELA Control	30	205.83	311.32	17.64	-1.14	0.97
2012 Math Experimental	14	206.86	156.29	12.50	-0.53	-0.06
2012 Math Control	27	200.15	290.62	17.05	-0.41	-0.87

As in question one, to determine if there was a difference among the groups, an independent t-test was conducted. First, the assumptions of an independent t-test were examined. An independent t-test assumes that the data for each

sample is normally distributed and that variances are equal among the samples. The 2011 ELA control and experimental groups met the assumption for an independent t-test. All other parts of the second research question did not meet the required assumptions for an independent t-test. Because the requirements of an independent t-test were not met for those parts, the Mann Whitney U test was used to examine the data. The Mann Whitney U test is the appropriate non-parametric counterpart to the independent t-test.

Creswell (2009) states that the Mann Whitney U test is recommended when distributions are not normal and there is one independent variable and one dependent variable. The Mann Whitney test assumes independent samples, random samples, and measurement on at least the ordinal scale. The data for 2011 mathematics, 2012 ELA, and 2012 mathematics met the assumptions of independence and scale, but not random sampling. Even though the experimental group was not a random sample, the test statistic was robust with respect to sample size. Therefore, the Mann Whitney test was appropriate. The results for each part of research question two are given in table 4.5.

Table 4.5
Inferential statistic results for male sample scale scores

Male Sample	Mean	DF	Std. Err.	Test Stat	p-Value	Test
2011 ELA	0.4046	50	4.6167	0.08764	0.4653	Independent t-test
Male Sample	n1	n2	Diff. Est.	Test Stat	p-Value	Test
2011 Math	18	34	1	501	0.3254	Mann Whitney
2012 ELA	18	30	-1	426	0.6295	Mann Whitney
2012 Math	14	26	5	326.5	0.134	Mann Whitney

Because the p-value for each test was greater than the established alpha value of .0125, the independent t-test and the Mann Whitney U test results yielded no statistical difference in the sample of scores for the associated control and experimental groups in research question two.

4.5 Research Question Three Results

The purpose of the third research question was to investigate the difference between the scale scores on the HSAP test for female students who participated in an academically focused after school program and female students of Spartanburg County that scored below the fiftieth percentile on HSAP. This was conducted in both English Language Arts and mathematics. The third research question had four parts to consider: 2011 female English Language Arts, 2011 female mathematics, 2012 female English Language Arts, and 2012 female mathematics. Descriptive statistics for each part of question one are given in table 4.6.

Table 4.6
Question three scale score descriptive statistics

Female Only Sample	n	Mean	Variance	Std. Dev.	Sk.	Ku.
2011 ELA Experimental	25	212.20	233.17	15.27	0.09	-0.34
2011 ELA Control	24	209.38	211.03	14.53	-1.05	0.78
2011 Math Experimental	18	211.40	233.94	15.29	1.08	1.13
2011 Math Control	16	205.50	185.33	13.61	-0.51	-1.05
2012 ELA Experimental	15	210.80	142.89	11.95	-1.14	0.96
2012 ELA Control	20	206.90	167.15	12.93	-0.67	-0.57
2012 Math Experimental	12	209.00	71.09	8.43	-0.62	0.49
2012 Math Control	25	204.75	230.46	15.18	-1.28	1.93

As in the first two research questions, to determine if there was a difference among the groups, an independent t-test was conducted. First, the assumptions of an independent t-test were examined. An independent t-test assumes that the data for each sample is normally distributed and that variances are equal among the samples. No part of the third research question met the required assumptions for an independent t-test. Because the requirements of an independent t-test were not met, the Mann Whitney U test is used. The Mann Whitney U test is the appropriate non-parametric counterpart to the independent t-test.

Creswell (2009) states that the Mann Whitney U test is recommended when distributions are not normal and there is one independent variable and one dependent variable. The Mann Whitney test assumes independent samples, random samples, and measurement on at least the ordinal scale. The data for all parts of research question three met the assumptions of independence and

scale, but not random sampling. Even though the experimental group is not a random sample, the test statistic was robust with respect to sample size.

Therefore, the Mann Whitney test was appropriate. The results for each part of research question three are given in table 4.7.

Table 4.7
Inferential statistic results for female sample scale scores

Female Sample	n1	n2	Diff. Est.	Test Stat	P-Value	Test
2011 ELA	25	24	1.5	641.5	0.3744	Mann Whitney
2011 Math	20	16	3	389.5	0.2723	Mann Whitney
2012 ELA	15	20	4	297.5	0.1836	Mann Whitney
2012 Math	12	24	2	241.5	0.2615	Mann Whitney

Because the p-value for each test was greater than the established alpha value of .0125, the independent t-test and the Mann Whitney U test results yielded no statistical difference in the sample of scores for the associated control and experimental groups in research question three.

In each of the four parts of research questions one, two, and three, the calculated p-value was greater than the established alpha value of .0125. Therefore, statistical analyses suggest that there was no significant difference between the scale scores of the control and experimental groups for each part of the first three research questions. Table 4.8 summarizes the hypothesis testing statistics for questions one, two, and three.

Table 4.8
Summary of Statistical Test Information

Summary of Statistical Test Information	p-value	Statistical Difference	Test
Total Sample			
2011 ELA	0.3146	No	Mann-Whitney
2011 Math	0.1724	No	Mann-Whitney
2012 ELA	0.3722	No	Mann-Whitney
2012 Math	0.097	No	Mann-Whitney
Male Sample			
2011 ELA	0.4653	No	Independent t-test
2011 Math	0.3254	No	Mann-Whitney
2012 ELA	0.6295	No	Mann-Whitney
2012 Math	0.134	No	Mann-Whitney
Female Sample			
2011 ELA	0.3744	No	Mann-Whitney
2011 Math	0.2723	No	Mann-Whitney
2012 ELA	0.1836	No	Mann-Whitney
2012 Math	0.2615	No	Mann-Whitney

4.6 Research Question Four Results

The goal of the fourth research question was to examine the relationship between the level of participation in an academically focused after school program and the associated HSAP scale score. The fourth research question has four parts to consider: 2011 English Language Arts, 2011 mathematics, 2012 English Language Arts, and 2012 mathematics. Descriptive statistics for each part of question four are given in figures 4.9.

Table 4.9
Question four HSAP scale score descriptive statistics

Scale Scores	n	Mean	Variance	Std. Dev.	Sk.	Ku.
2011 ELA	60	209.6	293.43	17.13	-0.07	-0.67
2011 Math	46	207.674	200.80	14.17	1.18	1.55
2012 ELA	43	207.977	178.50	13.36	-0.76	-0.39
2012 Math	31	206.22	129.58	11.38	-0.55	-0.22

Pearson Product Moment correlation was appropriate in order to determine if there is a correlation between the level of participation and the HSAP scale score. First, the assumptions of a Pearson Product correlation were examined. A Pearson Product correlation assumes that the data is normally distributed and there is a linear relationship between the considered variables. No part of this research question met the required assumption for the Pearson Product correlation. Because the data does not meet the assumptions, the researcher used the nonparametric counterpart to the Pearson Product correlation; the Spearman Rank correlation. The Spearman Rank correlation does not have any assumptions about normality or linear relationship. The results for each part of research question four are given in tables 4.10.

Table 4.10
Spearman r results correlation of level of participation and HSAP scale score

	N	df	t	r	p-value
2011 ELA	60	58	1.32	0.1703	0.192021
2011 Math	46	44	0.99	0.1478	0.327587
2012 ELA	43	41	0.53	0.0824	0.598971
2012 Math	31	29	1.00	0.1829	0.325582

The results of the Spearman Correlation do not demonstrate a significant correlation for any associated data sets.

4.7 Summary

One objective of the study was to determine if participation in an academically focused after school program would improve academic achievement in ELA and mathematics. No evidence was found to support the assertion. A second objective of the study was to investigate the relationship between the level of participation in an after school program and scale score on a standardized test. Again, no evidence was found to support a correlation between attendance and HSAP scale score.

Chapter five, the final chapter, will discuss the conclusions of each research question, discuss related research in relation to this study and then present recommendations for further study.

CHAPTER FIVE

CONCLUSION

5.1 Introduction

Chapter five is divided into four parts: (1) summary of the study, (2) a discussion of findings from chapter four, (3) a discussion of the results as related to current research and (4) recommendations for further research. The first part of chapter Five, the summary of the study, consists of a general overview of the study, the purpose of the study, and a discussion of the significance of the study. The second part of chapter five, reviews and discusses the results. The third part of chapter five discusses this study in relation to current research. The study concludes with a discussion of the study as it relates to future research.

5.2 Summary of the Study

After school programs have exploded in quantity and variety in the past twenty years (Hess and Finn, 2007). The funding mechanism for an after school program drives the goals and curriculum of the particular program (Zhang and Byrd, 2006). The curriculum for an after school program may include, physical activity, academic enrichment, nutrition, music, art, sports, science, recreation, or mentoring (Chung, 2005). Although after school programs can exist for a variety of reasons, most operate with academic achievement as a goal (Zhang and Byrd, 2006).

This study investigated if participation in an academically focused after school program was linked to improved academic achievement as measured by a standardized test. Additionally, this study sought to determine if the level of participation in an after school program was correlated to the scale score on the HSAP exam. The research questions for the study are given below:

All Students

1. Is there a statistical difference between the mean scores on the HSAP test of students who participate in an academically focused after school program and the mean scores of the bottom fifty percent of all HSAP test takers in Spartanburg County, South Carolina in both English Language Arts and Mathematics?

Male Students

2. Is there a statistical difference between the mean scores on the HSAP test of male students who participate in an academically focused after school program and the mean scores of the bottom fifty percent of all male HSAP test takers in Spartanburg County, South Carolina in both English Language Arts and Mathematics?

Female Students

3. Is there a statistical difference between the mean scores on the HSAP test of female students who participate in an academically focused after school program and the mean scores of the bottom fifty percent of all female HSAP test takers in Spartanburg County, South Carolina in both English Language Arts and Mathematics?

Correlation

4. Is there a correlation between the level of student participation in an academically focused after school program and the scale scores on the HSAP for either the English Language Arts or the Mathematics component of the HSAP test?

The purpose of this study was to expand the body of knowledge relating to academic achievement and after school programs. Another purpose of this study was to determine if the efficacy of an academically focused after school program to create improved academic achievement is associated with subject matter (ELA or math) or gender.

We are in the age of accountability. It is an age where educators must justify, with empirical data, the investment of each minute of instruction. They must report on the effectiveness of how each dollar is spent. Educators must strive to provide every opportunity for improved academic achievement. To that end, many school districts have invested capital in after school programs in hopes of gaining improved academic achievement for students. It is in view of the current educational climate that this study finds significance. This study sought to analyze the academic achievement of students participating in an after school program as compared to students that do not participate in an after school program. Additionally, this study sought to determine if there was a correlation between the participation level in an after school program and the scale score on a standardized test. This study is significant because informs educators when deciding to invest or not to invest in after school programs. This study is

significant because it assists educators when designing curriculum for after school programs. Moreover, the study helps educators understand what results could be expected if an after school program is utilized.

Finally, this study is significant because of the high stakes nature of tests on the secondary level. State exit exams, SAT, ACT, and End of Course/Grade tests are just a few examples of high stakes tests given during the secondary years. If participation in an after school program were linked to improved academic achievement on standardized tests, then students would have greater opportunity for post secondary education and a higher percentage of students would graduate from high school. The following section presents the results of each research question and an analysis of those findings.

5.3 Research Question One Discussion

There were no significant differences between the control and experimental groups for any part of research question one. In the year 2011, participants in the ELA academically focused after school program did not demonstrate a significant difference in scale score when compared to similar 2011 non participants, $U=2595.5$, $p=.3146$. In the year 2011, participants in the mathematics academically focused after school program did not show a significant difference in scale score when compared to similar 2011 non participants, $U=1803.5$, $p=.1724$. In the year 2012, participants in the ELA academically focused after school program did not exhibit a significant difference in scale score when compared to similar 2012 non participants, $U=1421.5$,

$p=.3722$. In the year 2012, participants in the mathematics academically focused after school program did not display a significant difference in scale score when compared to similar 2012 non participants, $U=1120$, $p=.097$.

The research found no significant difference between the control and experimental groups for each case in research question one. Even though no part of research question one was statistically significant, in every case the experimental group had a higher mean than the control group. In the first research question, the mean difference for both mathematics parts were over five scale score points. In ELA, the mean difference was 1.62 and 2.39 for the years 2011 and 2012 respectively. Furthermore, it is noteworthy that neither ELA nor mathematics had significant results in any year. There was no evidence to support the assertion that after school programs are more effective in improving academic achievement for either ELA or mathematics.

5.4 Research Question Two Discussion

There were no significant differences between the control and experiment groups for any part of research question two. In the year 2011, participants in the ELA academically focused after school program did not demonstrate a significant difference in scale score when compared to similar 2011 non participants, $t(50).08764$, $p=.4653$. In the year 2011, participants in the mathematics academically focused after school program did not show a significant difference in scale score when compared to similar 2011 non participants, $U=501.5$, $p=.3254$. In the year 2012, participants in the ELA

academically focused after school program did not exhibit a significant difference in scale score when compared to similar 2012 non participants, $U=426.5$, $p=.6295$. In the year 2012, participants in the mathematics academically focused after school program did not display a significant difference in scale score when compared to similar 2012 non participants, $U=326$, $p=.134$.

The research found no significant difference between the control and experimental groups for each case in research question two. Even though no part of research question two was statistically significant, in every case the experimental group had a higher mean than the control group. In the second research question, the mean difference for HSAP scale score for the 2011 and 2012 mathematics cases was 4.31 and 6.71 respectively. In ELA the mean difference was over .40 for 2011 and .56 for 2012. Additionally, it is worthwhile to note that neither male ELA nor male mathematics had significant results for any data set. There was no evidence to support the assertion that after school programs are more effective in improving scholastic achievement for males in ELA or mathematics.

5.5 Research Question Three Discussion

There were no significant differences between the control and experiment groups for any part of research question three. In the year 2011, participants in the ELA academically focused after school program did not demonstrate a significant difference in scale score when compared to similar 2011 non participants, $U=641.5$, $p=.3744$. In the year 2011, participants in the Mathematics

academically focused after school program did not show a significant difference in scale score when compared to similar 2011 non participants, $U=389.5$, $p=.2723$. In the year 2012, participants in the ELA academically focused after school program did not exhibit a significant difference in scale score when compared to similar 2012 non participants, $U=297.5$, $p=.1836$. In the year 2012, participants in the mathematics academically focused after school program did not display a significant difference in scale score when compared to similar 2012 non participants, $U=241.5$, $p=.2615$. Moreover, it is noteworthy that neither female ELA nor female mathematics had significant results for 2011 or 2012. There is no evidence to support the assertion that after school programs are more effective in improving female academic achievement in either ELA or mathematics.

The research found no significant difference between the control and experimental groups for each case in research question three. Even though no part of research question three was statistically significant, in every case the experimental group had a higher mean than the control group. In the third research question, the mean difference for HSAP scale score for the 2011 and 2012 mathematics cases were 5.9 and 4.25 respectively. In ELA the mean difference was over 2.82 and 3.9 for the years 2011 and 2012 respectively.

5.6 Research Question Four Discussion

There was no significant correlation between the scale score on the HSAP and the number of after school program sessions attended. In the year 2011, attendance in the ELA academically focused after school program did not demonstrate a statistically significant correlation with the associated scale scores, $r(58) = .170$, $p = .192$. In the year 2011, attendance in the mathematics academically focused after school program did not demonstrate a statistically significant correlation with the associated HSAP scale scores, $r(44) = .148$, $p = .237$. In the year 2012, attendance in the ELA academically focused after school program did not demonstrate a statistically significant correlation with the associated scale scores, $r(42) = .084$, $p = .599$. In the year 2012, attendance in the mathematics academically focused after school program did not demonstrate a statistically significant correlation with the associated HSAP scale scores, $r(29) = .183$, $p = .326$.

No significant correlation was observed between the scale score on the HSAP and the level of participation in the after school program.

5.7 Findings Related to Research

The literature review examined the after school programs from a historical perspective, a curricular perspective, discussion of hallmarks of effective after school programs, and a discussion of time on task as related to after school programs. From this review of literature it was shown that there is limited research on academically focused after school programs and after school

programs in the secondary setting. Moreover, it was demonstrated that empirical data on academically focused after school programs is needed.

After school programs are very popular educational and social remedies with educators and community leaders. The popularity is due to many factors, but there are two factors that are most prominent. First, after school programs keep students productively engaged in the hours directly after school. In theory, after school programs provide supervision, safety, and positive outlets for youngsters in the hours after school. The second factor is academic achievement. Most after school programs have academic achievement as a goal. The method that an after school program uses in order to encourage academic achievement is varied widely.

While some studies show positive academic achievement is linked to participation in an after school program, this study does not support that assertion. Additionally, no evidence was found to support the idea that after school programs are more effective with respect to content or gender. Moreover, this study did not find a correlation between standardized test scores and student attendance in an academically focused after school program.

This research did not show a significant difference in the control and experimental groups, nor did it find a correlation between the scale score and participation. Although no significant difference was found, the mean for the experimental group was greater than the mean for the control group for every part of research questions one, two, and three. In mathematics, the difference

between the means of the control and experimental groups range from 6.71 to 4.25. In English Language Arts, the difference between the means of the control and experimental groups range from 2.82 to 0.4. Even though these results are not statistically significant, they are compelling for the school administrator. In the age of accountability a five point scale score improvement may not be statistically significant, but it could be practically significant. This information is critical when a school leader is considering program evaluation or program implementation and must determine if the fiscal and personnel outlay is worth the benefit of the program.

Varro (2009) and Elder (2009) both conducted research on after school programs as related to academic achievement. Elder (2009) studied fourth graders and did not find statistically significant empirical data to link after school programs with improved academic achievement. Elder (2009) also found that students that participated in the after school program experienced other positive outcomes: improved school attendance, greater participation in class, and improved homework completion. Likewise, Varro (2009) sought to determine if participation in an after school program could be linked to improved academic achievement for elementary school students. Varro (2009) did not find significant data to support the assertion. Moreover, Varro (2009) did not find a link between participation in an after school program and improved discipline referrals or school attendance when compared to students who did not participate in an after school program.

This research, like Varro (2009), Elder, (2009) and others show a mixture of results regarding after school programs. There is not a clear mandate for implementation of a particular curriculum or program in after school programs. Nor is there a clear and consistent set of skills or behaviors that after school programs are effective in addressing. Rather, there are a set of highly contextualized success and failures that show limited promise for a variety of applications. In other words, after school programs can be effective on a contextual basis. An after school programs should be evaluated with respect to the specific context.

5.8 Recommendations for Further Research

This study contributes to the field of after school programs by expanding the research to include consideration of academically focused after school programs as well as after school programs in the secondary setting. This research has several implications for further study.

Future research should include a longitudinal study that tracks the academic progress of students that participate in an after school program during the three year following participating in the after school program. The study should examine if participation in an after school program has any long term benefits? Additionally, the study should examine if the benefits are associated with a particular discipline. Although this study did not link the effectiveness of an after school program to content area, a review of literature suggests that after school programs have a greater ability to impact mathematics when compared to ELA.

Another recommendation for further study involves investigating participants in an after school program versus non participants through an analysis of covariance. The researcher should control for differences between the participants and non participants prior to the implementation of the after school program. The most important difference to control for would be differences in the content associated with the culminating evaluation.

The final recommendation for continued research is a qualitative study that explores the perception of the participants regarding the efficacy of an academically focused after school program to improved academic achievement. The participant's perceptions would be enlightening when designing future curricula for after school programs. Moreover, the information garnered would inform educational leaders in how best to implement new models of after school programs.

5.9 Conclusion

After school programs have become a popular solution to academic and community problems. Educators and community leaders have high expectations for the monetary commitment of an after school program. After school programs are not successful in addressing a broad spectrum of problems, rather they have shown contextualized efficacy in addressing a focused problem.

While this study did not find a significant difference in a standardized test score between students that participated in an academically focused after school program and those students that did not, participants did show a higher mean

score in every disaggregate group this research considered. Although this difference is not statistically significant, from the perspective of a practitioner, it could be very meaningful. More research is needed to determine if the after school programs are effective in promoting academic achievement in a sustained and meaningful way.

Because this study did not demonstrate that participation in an after school program has a positive impact on academic achievement, some may conclude that an after school programs should be abandoned. This conclusion would be premature. As indicated in Chapter Two, after school programs have a variety of purposes and are very successful under certain circumstances. Education of a student requires flexibility and innovation. After school programs are one tool educators use in order to educate the whole child. Therefore, educators and researchers should seek a greater understanding of the benefits and limitations of after school programs.

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