

**A STUDY OF MIDDLE SCHOOL STUDENT READING ACHIEVEMENT BEFORE AND  
AFTER PARTICIPATION IN AN AFTER-SCHOOL PROGRAM**

**Verlina Heady**



A Study of Middle School Student Reading Achievement Before and After Participation  
in an After-school Program

A Field Study Report

Presented to

The College of Graduate Studies

Austin Peay State University

In Partial Fulfillment

Of the Requirements for the Degree

Educational Specialist

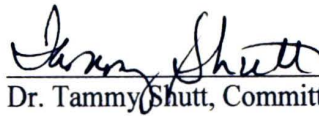
Verlina Heady

May 2013

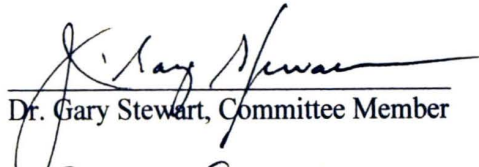
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We are submitting a Field Study written by Verlina Heady entitled “A Study of Middle School Student Reading Achievement Before and After Participation in an Afterschool Program.” We have examined the final copy of this Field Study for form and content. We recommend that it be accepted in partial fulfillment of the requirements for the degree of Educational Specialist.



Dr. Tammy Shutt, Committee Chair

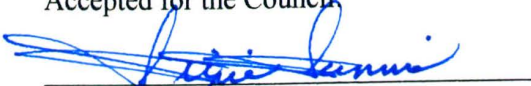


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## Dedication

This field study is dedicated to the memory of my mother, Barbara Nelson. Her determination and pride taught me the meaning of perseverance. Without her encouragement, I would not have journeyed this far in the educational process. I would also like to thank my husband Benny Heady for offering unconditional support that helped me reach this goal.

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## Acknowledgements

I would like to express my gratitude to my chair, Dr. Tammy Shutt, for her expertise that assisted me through this process. Her patience, support, and commitment to learning offered encouragement throughout this learning experience. I would also like to thank Dr. Gary Stewart for his invaluable guidance and patience that has helped me build a foundation to become a successful educational leader.

VERLINA HEADY. A Study of Middle School Student Reading Achievement Before and After Participation in an After-school Program (under direction of Dr. Tammy Shutt.)

### Abstract

The purpose of the study was to examine the relationship between after-school program participation and reading achievement by analyzing students' scores before and after participation in programs. In the study, TCAP reading NCE scores were used to measure literacy achievement prior to program attendance in 2010-2011 and after participation was complete in 2011-2012. The study tested three null hypotheses including overall performance, gender, and differences between grade levels. Paired repeated measures *t* tests and Analysis of Variance (ANOVA) were used with JMP statistical software to determine statistical significance at the .05 level.

Results indicated that there was no statistically significant difference between students reading achievement scores before program participation in 2010-2011 verses after participation was complete in 2011-2012. Further analysis based on gender did not indicate a statistically significant difference, but a statistical significance was across grade levels.



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## **Chapter I**

### **Introduction**

Education can be seen as a fundamental component of our country. Because learning prepares individuals for the future, having the opportunity to attend school is important for all children. However, some learners struggle to maintain appropriate academic achievement, behavior, and motivation (Vandell, Reisner, & Pierce, 2007). With the implementation of the No Child Left Behind Act, it is essential that practitioners find suitable ways to help all students meet achievement goals. To remedy such concerns, educational interventions have been created throughout school districts. Although these tools vary across settings, the after-school program serves as a common example that can be found within schools and surrounding communities across the United States (Sanders, 2011).

According to research, several components explain the significance of after-school programs in the academic community. The first primary goal stems from meeting students' needs after the regular school day has been completed. As early as the mid-19th century, concerns regarding unsupervised children and teens caused the development of the first after-school programs (Halpern, 2002). Because of working parents, these children were often left alone and began to develop unhealthy habits. After-school programs provided a safe haven for such children to complete homework and develop positive friendships (Halpern, 2002; Sanders, 2011). Today, these programs still exist with a primary task of providing students with meaningful activities when parents and caregivers are unavailable.

Besides providing supervision, after-school programs have also been credited for helping students improve behaviorally and socially. Those students that would have been



left to their own devices learn positive examples from adults in an after-school setting. Researchers (Vandell et al., 2007; Fredrick, 2011) also pointed out that those students with behavior issues within schools gain positive experiences in after-school settings. Programs can provide one-on-one assistance for students to learn coping mechanisms and appropriate responses. In essence, after-school programs can be used to extend services for students outside the core academic subject areas. This aspect is important so that at-risk behaviors among teens are reduced (Hirsch, 2011).

While behavioral and social components are essential for all students, after-school programs in the 21st century have evolved to include additional elements with an increased emphasis placed on achievement. Thus, the importance of academics in after-school programs has grown over the last decade. Numerous programs have been developed with a primary focus of increasing students' achievement. Researchers contend that such programs reduce achievement gaps and improve learning among students (Anderson-Butcher, 2010; Hirsch, 2011). Educational leaders and program developers have also argued that programs can extend services provided during the school day and offer different perspectives for meeting students' learning needs (Gardner, Roth, & Brooks-Gunn, 2009; Neuman, 2010). As schools face federal mandates regarding achievement and academic growth, after-school programs will continue to be in high demand to help educational practitioners meet the needs of struggling students.

### **Statement of the problem**

Although after-school programs have been an essential component in our society across decades, evidence regarding the effectiveness in increasing student achievement measures is questionable. Multiple researchers (Vandell et al., 2007; Lauver, 2012;

Sheldon, Arbretton, Hopkins, & Grossman, 2010) have measured positive growth outcomes on student test scores following placement in after-school programs. However, others have revealed minimal effects when increasing achievement is the primary focus (National Center for Education Evaluation and Regional Assistance, 2009; Sanders, 2011). Such trends have caused questions regarding the efficiency of after-school programs to emerge. Many have begun to speculate about how effective after-school programs are for improving learning gaps and student test scores.

Because of the wide-variety of programs that focus on this issue, funding has also become a major concern (Yohalem & Wilson-Ahlstrom, 2010). This is especially true in school districts with growing populations and dwindling resources. As Sheldon et al. (2010) proposed, after-school programs are invaluable to the educational community. However, others contended that benefits are minimal in relation to the high costs of program development and implementation (Gardner et al., 2009).

These concerns lead to multiple questions regarding after-school programs. How effective are programs as an educational intervention? Can these programs be used to improve test scores and reduce achievement gaps? Answers to these questions are essential as the academic community moves into the future. With increased costs for programs, positive evidence regarding student achievement is necessary. Such results can help verify that after-school programs do serve as an integral component in helping struggling students reach educational goals and grow academically.

### **Purpose of the Study**

Because recent studies show varying results regarding the impact after-school program participation have on student achievement measures, practitioners in the

educational field need appropriate ways to evaluate the effectiveness of current programs. What impact do programs have on student learning? Are after-school programs helping students sufficiently in regards to funding and costs? As schools move to equalize educational opportunities, answers to such questions will become essential to help all students. Researchers have shown positive student growth with after-school program implementation (Vandell et al., 2007; Lauver, 2012; Sheldon et al., 2010). If programs do have a positive influence, educators need ways to duplicate such results. With NCLB mandates, all schools will continue to need appropriate methods to help students meet learning goals. Thus, the purpose of the study was to determine if student participation in after-school programs positively impact reading achievement.

### **Significance of the study**

Understanding how after-school programs impact student achievement is significant for the entire academic community. These programs can be found across school districts and states and represent a common educational intervention for many students (Halpern, 2002). With the staffing, development, and funding involved, practitioners need solid evidence regarding the efficiency of such programs. Just as teachers are evaluated for effectiveness, after-school programs need assessments as well. This information can be used to strengthen future programs and tailor specific components to meet students' needs.

Besides assisting educators, evaluation of after-school programs is also significant for parents and students. Allowing parents to become involved in the process strengthens schools' relationships with stakeholders (Hirsch, 2011). Programs provide parents the opportunity to interact with teachers and become involved in the educational process. In

addition, this positive trend can carry over to students as they realize the benefits of program participation (Gardner, et al., 2009; Anderson-Butcher, 2010). In essence, the process of evaluating after-school programs can be used to strengthen teacher, student, and parent relationships.

### **Research Questions**

1. Does after-school program participation have an impact on students' reading TCAP achievement?
2. Does after-school program participation impact male and female students' TCAP reading achievement differently?
3. Does after-school program participation impact students' TCAP reading achievement differently across grade levels?

### **Hypotheses**

1. There is no statistically significant difference between students' TCAP reading scores before and after participation in the after-school program.
2. There is no statistically significant difference between male and female students' TCAP reading growth after participation in the after-school program.
3. There is no statistically significant difference between 6<sup>th</sup>, 7<sup>th</sup>, and 8<sup>th</sup> grade students' TCAP reading growth after participation in the after-school program.



## **Limitations**

1. Because of the limited number of students that participate in the program, the sample size was a limitation. Since participation in the after-school program is voluntary, the number of students that attend the program varies each school year.
2. The results of the study can only be generalized to populations that are similar as well. However, finding a similar population may be difficult because of the small sample size available.
3. The time frame of the study was another limitation in that data used was from one year of participation. Because program participation varies yearly, following students for more than one year is difficult.

## **Assumptions**

1. One assumption included student performance on the TCAP assessment. In order for the study results to be considered valid, an assumption exists that students performed to the best of their ability on the day the test was administered.
2. Student attendance in the after-school program was a second assumption. Program requirements requested that students have only three absences from the program during the school year. Since the program operated three days each week from September until April, students with a high rate of attendance had suitable exposure to tutoring and intervention services.
3. An assumption existed that all administrators of the TCAP assessment were highly qualified and followed assessment procedures appropriately.

## Definition of Terms

1. TCAP: Tennessee Comprehensive Assessment Program achievement test given yearly to students
2. After-school Program: programs that use the school facilities and operate after regular school day ends
3. School-based after-school program: programs that are organized by school leaders and operate in the school building after the regular school day ends
4. Community-based after-school programs: programs that are organized by community members and operate after the regular school day ends
5. City-wide after-school programs: programs that combine a network of community-based programs in urban areas and operate once the regular school day ends (Holleman, Sundius, & Burns, 2010)
6. Ethnicity: ethnic groups include African-American, Hispanic, American Native/Alaskan or Asian/Pacific Islander. Parents indicate student ethnicity upon enrollment to school.
7. Majority: Any student belonging to the ethnic group Caucasian.
8. Minority: Any student not belonging to the ethnic group Caucasian.
9. NCE Score: normal curve equivalent or standardized score on a test
10. Gain Score: a growth measurement computed from subtracting a pre-test score from the post-test score.

## Chapter II

### Review of Literature

#### After-school Program Definitions

One of the primary questions that many educators face is the issue of providing extra support for students. With large class sizes and strenuous schedules, giving extra attention to learners can sometimes become a challenge. Increasing accountability measures require schools across the United States to have appropriate methods for meeting this goal. After-school programs have become an essential part of the education system that can help address academic, behavioral, and motivational needs (Vander et al., 2007). Understanding the components of these programs can assist practitioners across the education field.

Defining the after-school programs is a complex task in that multiple program types exist across school districts and states (Apsler, 2009). For instance, Gardner et al., (2009) defined programs as those that operate consistently, offer multiple activities, and assist school age children. Neuman (2010) supported these ideals and added that programs enhance the normal school day by offering homework assistance and tutoring. Other researchers pointed out that programs focus on different areas as well. While some emphasize only academics, others include various components such as social skills and leadership development (Dietal, 2009; Holleman et al., 2010; Yohalem & Wilson-Ahlstrom, 2010).

Besides varying definitions, multiple researchers revealed that after-school programs also contain characteristics that differ from the traditional school setting. Unlike typical state mandated standards- based curriculums, these programs often focus

heavily on components that interest children and recognize their preferences (Little, Wimer, & Weiss, 2007). Programs can also be school or community- based, meaning that multiple locations can be used with differing formats that operate outside the school arena (Gardner et al., 2009). According to Neuman (2010), some programs contain variations in instruction delivery as well. In these settings, learners experience mainly problem-based approaches focusing on offering choices and encouraging teamwork. Such variations are inherent since after-school programs must keep students engaged once the normal school day has ended. However, both traditional school-settings and after-school programs have a common goal to support students and enhance their learning experiences (Hartry, Fitzgerald, & Porter, 2008).

### **After-school Program History**

Reviewing the history of after-school programs explains how varying definitions and multiple types of programs have developed today. According to Neuman (2010), one of the first systems that resembled the after-school program was the apprenticeship of the 1800s. These programs instructed children through chores, mentoring, and early job training. Because many children did not attend formal schools, parents primarily supported their children with developing into adults that could support and benefit society.

By the early 19<sup>th</sup> century, the creation of compulsory school laws and a diminished child workforce soon changed this perspective. For instance, Halpern (2002) revealed that nearly 80% of children attended school by the 1930s, and less than 50% were child laborers. Religious groups, unions, and community organizations had worked to end the use of children in the workforce due to dangerous work environments and



mistreatment (Mahoney, Parente, & Zigler, 2009). This situation caused an increased amount of free time for children once the school day was completed. With growing towns and communities, many children gathered in the streets creating concerns regarding safety (Durlack, Mahoney, Bohner, & Parente, 2010). Questions then arose regarding how children and teens should spend these leisurely hours.

To remedy such concerns, the first after-school programs were created. These early programs were located in homes, churches, or stores with a main goal of providing a safe, nurturing environment for children. Because play was considered an important part of development, this was a primary feature in many cases (Halpern, 2002). Many believed that structured-play was more sufficient in development rather than leaving children on their own. In essence, after-school programs during this time provided an area for children to socialize while maintaining security. Often called boys' clubs, programs allowed children's basic needs to be met while offering adult supervision (Halpern, 2002; Durlack et al., 2010; Hirsch, 2011; Sanders, 2011).

As the population began to increase, changes began to emerge across after-school programs as well. Early boys' clubs saw increases in numbers that required new buildings to be built and programs to be expanded. As many as 300 children could be served in these areas, and activities were available for both genders. With large numbers, pressures began to emerge with keeping children occupied with appropriate activities and lessons (Apsler, 2009). As Sanders (2011) discussed, male activities were more hands-on and often included carpentry, masonry, electricity, photography, and repairing. Females participated in sewing, weaving, cleaning, or learning etiquette. Although often taught separately, activities for both genders included lessons such as health, hygiene, culture,

and cooking. Space was also available for libraries, studios, gyms, or auditoriums for teaching and learning.

While boys' clubs were large and served hundreds, settlement houses were on a smaller scale and more private. One example included New York's Governor's House that served an estimated fifty students during the 1930s. Such programs contained features found in a normal home with activities planned in dining rooms or dens. The idea was that a more selective process could be used with smaller numbers, which increased rapport with children and families (Halpern, 2002). Like boys' clubs, the idea was to provide structured activities for children to foster positive maturity and development (Mahoney et al., 2009).

Although most early after-school programs contained a common goal to provide safe environments for children, many issues still influenced the success of these programs as years progressed. According to Sanders (2011), one major concern stemmed from keeping children and teens engaged in activities. As children became uninterested, behavior problems also increased. Lesson completion became unimportant, as students were more concerned with socializing and horse-playing.

Halpern (2002) supported this viewpoint and added that staffing concerns in programs created challenges as well. Because workers were mostly volunteers, developing specific procedures for handling issues was a challenge. Workers that were paid taught specific skills and did not offer full time support. These problems caused the question of program quality to emerge, and developers became divided on design and structure. Questions regarding the use of individual or group work with students also

arose. While groups encouraged teamwork, individual tasks promoted responsibility and dependability.

Besides challenges regarding structure, economic and social contexts influenced early programs as well. For instance, after-school programs for African-American students were poorly financed, staffed, and often short-lived (Halpern, 2002). The Great-Depression of the 1930s also severely impacted programs. As parents lost employment and resources became scarce, needs for children increased. However, budget restraints caused workers to go without pay and activities to diminish. With these increased strains, older teens began to overrun program organizers in many cases. By the 1950s, some felt programs were too stringent to meet children's needs (Mahoney et al., 2009).

Regardless of such challenges, after-school programs continued throughout the United States. During this time, new issues emerged that encouraged the development of programs to help students once the normal school day ended. WWII brought concerns when the percentage of working mothers began to increase, and this trend had nearly doubled by the 1970s. For instance, while only an estimated 38% of mothers worked in the 1950s, this number had reached 70% by the 1980s. Coined "latchkey," children in families with working parents were often left to their own devices once the normal school day ended (Durlack et al., 2010; Sanders, 2011).

According to Mahoney et al. (2009), working parents caused an increase in "self-care" for children. While some argued that the trend fostered responsibility and independence, others pointed out that children needed examples for appropriate learning to take place. Similar to early concerns, neighborhood crime increased, especially during after-school hours. At the same time, a growing movement involving childhood



development and supervision was taking place. Just as early program developers believed, the idea was that children needed structured activities and security in order to mature appropriately (Anderson-Butcher, 2010).

Such trends caused an increase in interest regarding after-school program creation (Durlack et al., 2010). For instance, the Congressional Caucus of 1983 revealed that children needed age-appropriate examples in order to learn responsibility. Leaving young teens alone was regarded as irresponsible parenting and hazardous. These notions opposed earlier viewpoints that supported self-care to promote dependence in children. Media portrayal of teens experimenting with drugs, sex, and other risky behaviors also fueled concerns involving unsupervised children and development (Mahoney et al., 2009).

While such issues virtually influenced all children, low-income families were especially at-risk. Neighborhoods and schools serving these students often lacked resources needed to develop after-school programs. Services that were available were often not geared to fit students' needs. This left single parent and low-income children without community support. Consequently, the numbers of "latchkey" students continued to increase (Durlack et al., 2010; Sanders, 2011).

With mounting apprehensions surrounding security and children, political support involving after-school programs evolved during the 1990s. The Child Care Development Fund, provided resources for programs geared toward low-income students and families (Sheldon et al., 2010). Created in 1994, President Clinton's 21<sup>st</sup> Century Community Learning Center after-school initiative was a second legislative component offering funding that still exists today. Finally, the Bush administration's No Child Left Behind



Act of 2001 further supported after-school program development with a goal of increasing student learning (Apsler, 2009; Nelson-Royes & Reglin, 2011).

### **Types of After-school Programs**

How have such trends influenced current after-school program development? In the 21<sup>st</sup> century, school, community, and city-wide programs have been created to serve students in all age groups. According to Durlack et al. (2010), these after-school activities had a variety of goals for students. Some focus on academic learning, while others seek to improve social development among students. With increased accountability stemming from the No Child Left Behind legislation, many school-based programs focus on improving student learning as a primary goal (The Wallace Foundation, 2011).

Availability of programs vary as well with some offered only during the school year and others opening during the summer months. Most programs are open to all students, and may focus on specific talents to foster development (Durlack et al., 2010). Regardless of differences, all programs have a common agenda of providing assistance to both children and teens.

As Neuman (2010) discussed, school-based programs are one of the most common programs found throughout communities today. These programs vary in scope and purpose with some focusing on academics and others fostering students' individual talents. Research also points out that these programs are one of the most capable at meeting the needs of low-income students. Students can be identified and assisted through tutoring services and remediation training (Sanders, 2011). School-based programs can essentially reach more students because those needing assistance are present throughout the traditional school day.

Examples of school-based programs can be found across all states and cities. For instance, the After-School Matters Program of Chicago, Illinois is recognized as one of top school-based programs within the United States. Using a science and technology theme, the program includes project-based learning and helps high school students acquire career skills that will prepare them for the workforce (Hirsch, 2011). Neuman (2010) described a second successful program in San Francisco, California called the After-School-Enrichment Program. Student participants are provided with homework assistance, after-school enrichment, and extracurricular opportunities such as drama, sports, and dance. One of the most widespread school-based programs includes the 21<sup>st</sup> Community Learning Centers. These programs offer assistance to all school age children with a focus on academics, especially reading and math achievement (After-school Alliance, 2012).

Although school-based programs are common across the U.S., the community-based programs of today derive from some of the earliest after-school systems in America. Historically, such programs were created in response to growing concerns about how students spent time outside of school. In essence, community-based systems offer students another option for after-school programming outside the school setting (Sanders, 2011). Similar to school-based after-school programs, community-based systems provide a wide-variety of options for students. Academic supports as well as extracurricular activities are available for students. Many communities include such programs to reach those students that do not participate in school-based resources (Durlack et al., 2010).

Examples of community-based programs are numerous and can be found across small towns and urban areas. New York City's Department of Youth and Community Development program is one example of community-based program that has been successful at helping youth for over ten years. This system offers eight different programs to assist children of all ages including young immigrants (Little et al., 2007). Another common organization found across states includes the Boys & Girls Clubs of America. Rather than academics, these community-based after-school organizations focus on supplementing students' learning through sports, dance, field trips, hobbies, and cultural immersion activities. Other common community-based programs that can be found in multiple towns and cities include the YMCA/YWCA, Boy/Girl Scouts, and 4-H Clubs (Hirsch, 2011).

In response to a growing number of community-based programs, many metropolitan areas have begun creating city-wide after-school systems over the last decade. Because cities are vast areas with large populations, most often community-based programs in these areas are scattered. While all have a common goal to help children and families, programs run in isolation and are disconnected. To alleviate this issue, city-wide systems have been created in many areas with the goal of connecting hundreds of community-based programs in one cohesive system. The idea is that such programs can better serve students and families (The Wallace Foundation, 2011).

Examples of city-wide systems can be found throughout urban areas in the U.S. For instance, The Wallace Foundation report (2011) discussed a system called Providence After-School Alliance, which serves cities throughout Rhode Island. Holleman et al. (2010) revealed a second system called the Making the Most of the Out



of School Time (MOST) that can be found in cities such as New York, Boston, Chicago, and Seattle. Other organizations work to expand the use of city-wide systems. For instance, The National League of Cities After-school Policy Advisors Network is a primary example, which works to create city-wide systems in metropolitan areas such as Denver, Spokane, and Nashville (The Wallace Foundation, 2011).

Although school, community, and city-wide are recognized as the three main types of after-school programs, other programs are geared toward specific goals. This is mainly in response to those populations that researchers believe may have been overlooked in earlier programs (Sheldon et al., 2010). For example, programs that focus on assisting low-income students are prevalent throughout school districts and communities. The goal is to help students academically, socially, and promote extracurricular components (Holleman et al., 2010). Other programs have been developed for gifted students as well. Such systems allow these students to focus on their academic strengths and talents (Sanders, 2011).

### **After-school Program Funding**

A wide variety of program types require multiple resources for funding across the United States. Historically, program developers primarily offered financial support for after-school programs. Churches, community agencies, and private groups gave donations for programs in an effort to support the communities' youth. These so-called "War Chests" helped an estimated 300,000 children participate in programs. In other cases, workers for programs were volunteers and required no pay. College students also supported after-school programs in efforts to provide community service and receive training (Halpern, 2002).



As the nation became concerned about youth's out of school time and delinquency, federal funding began to increase for programs. For instance, the Child Care Development and Block Grant and the 21<sup>st</sup> Century Community Learning Centers became the first form of federal funding for programs in the 1990s (National Center for Education Evaluation and Regional Assistance, 2009; Sheldon et al., 2010; Hirsch, 2011). By the year 2002, funding from the federal government had increased to about 450 million (Apsler, 2009). Today, an estimated 1.2 billion in federal funding is allocated for the use of after-school programs across the United States (After-School Alliance, 2012).

Besides government funds, states provide financial support for after-school programs as well. Most states offer grants for schools and community agencies to supplement federal funding for programs (Dietal, 2009). To gather support, states often use a variety of resources such as tax or lottery funds (Sanders, 2011). Similar to government contributions, states' funding has reached millions of dollars as well. States such as Georgia, Iowa, Massachusetts, Missouri, and Minnesota spent a combined total of \$20 million for after-school programs in 2008 (Gardner et al., 2009). States with larger populations also spend an increased amount on programs. For instance, California spent an estimated \$500 million on programs in 2009 (Dietal, 2009).

Despite the large amounts of funding available, many after-school programs still face challenges with financial support. Mahoney et al. (2009) discussed this issue and contended that funding levels are not high enough to meet the program needs. In addition, as states continue to apply for federal funding, the amount of available funds continues to decrease. The After-school Alliance (2012) examined such trends and reported that only 38% of states received federal 21<sup>st</sup> Century Learning Center grants in 2004. According to

the report, only 15% of school-aged children currently participate in programs across the nation. However, an estimated 18.5 million more would be involved if needed programs were available.

### **Reasons for After-school Programs**

Regardless of financial challenges, after-school programs continue to remain a top priority across school districts and states. One primary reason stems from concerns regarding out-of-school time for children and teens. Fredrick (2011) shed light on this issue and revealed that 50% of children's day is spent away from the traditional school setting. Supporting this view, the After-school Alliance (2012) found that an estimated 15 million children across the U.S. are left to their own devices once the school day is complete. In many cases, both parents work outside the home, which leaves a gap in the time children arrive from school and parents return from work (The Wallace Foundation, 2011).

Results from multiple studies have been found to support viewpoints that children have large amount of idle time after the school day ends. For example, research conducted by Brandeis University of Massachusetts revealed that children spend up to 25 hours a weeks unsupervised when both parents work outside the home (Little et al., 2007). In a study focusing on how students spend time, Shann (2001) found that less than half of children complete homework or study after school. Most watched television, played video games, or played sports. While 73% of students return home after the school day ends, only an estimated 19% of these children are supervised.

According to researchers, idle time for children has a negative impact on both students and families. The Wallace Foundation (2011) contended that in many cases

unsupervised time leads to risky behaviors such as drugs or sex experimentation. Other researchers such as Hirsch, Mekina, and Stawicki (2010) supported this idea and pointed out that children left alone are more likely to participate in criminal activities. Because peak hours for crime are between 3 and 6 PM, most researchers argue that students need appropriate activities and supervision during this time (Mahoney, Levine, & Hinga, 2010; After-school Alliance, 2012).

While concerns regarding how students spend time outside of school are important, specific school related issues also explain the need for after-school programs. As multiple researchers have revealed, at-risk students represent one of the most prevalent groups that can benefit from after-school program participation (Hartry, 2008; Anderson-Butcher, 2010; Miller & Gentry, 2010). However, this distinction represents a wide range of students across school districts. For instance, students with learning difficulties, lower socioeconomic status, social problems, or different ethnic backgrounds might all be identified as at-risk (Hirsh, 2011). By analyzing specific groups, researchers can gain a better understanding of why after-school programs are needed for these students.

Students with learning difficulties bring unique challenges to the educational setting that require extra academic assistance. School districts need supplemental programs to address this concern, and after-school initiatives are one avenue that can offer remediation and support for students (Fredrick, 2011). For instance, Anderson-Butcher (2010) discussed the results of one study that surveyed teachers, parents, and students regarding the effectiveness of 21 after-school programs in Ohio. Results indicated that over 60% of all participants felt that program was successful in supporting



students with learning difficulties and 74% of students improved academically. The Hartry (2008) Read 180 After-school Program study serves as another example with results indicating that the program was successful at increasing students interest in reading, independent reading skills, and overall achievement in reading. The success of such programs indicates that after-school initiatives can be used to assist students with various learning difficulties.

Besides assisting struggling learners, students from a lower a socioeconomic background often benefit from after-school program attendance because they may not have access to other enrichment opportunities (Weiss, Little, Boufard, Deschens, & Malone, 2009). As Gardner et al. (2009) purported, programs can also play a key role in narrowing achievement gaps between socioeconomic groups. With NCLB legislation to consider, school leaders anticipate that after-school programs can help lower gaps and increase achievement for underperforming students (Hartry et al., 2008; Gardner et al., 2009; Miller & Gentry, 2010; Nelson-Royes & Reglin, 2011; Dodd & Bowen, 2011). Examples of this idea can be seen from 21<sup>st</sup> Century Community Learning Centers after-school program evaluations with students increasing an average of 20 percentiles on achievement tests (After-school Alliance, 2012). Since such programs allow time for homework and tutoring assistance, students can increase academic focus and understanding (Weiss et al., 2009). These activities help students extend learning and increase achievement.

While addressing achievement is essential, after-school programs can also assist with other difficulties often found within schools. For example, Fredrick (2011) argued that after-school programs improve behavior, social, and emotional awareness for



students. The small group setting and one-on-one assistance offered after-school help students learn ways to cope with emotional difficulties. Because programs reinforce school rules and procedures, negative behaviors and social responses can continue to be addressed once the school day is over. Evaluation of programs has found improvement in such areas as well with participants incurring less discipline infractions and improving peer relations (Hartry et al., 2008; Anderson-Buthcher, 2010). Other analyses have found that programs can help improve student self-esteem and self-confidence (Little et al., 2007).

Because discipline issues can negatively impact students' learning, after-school programs that can address these concerns are essential. However, another important component that highlights the need for programs includes the minority student population. With dropout rates significantly higher for Hispanic, African, and Native American students (Halpern, 2002; Afterschool Alliance, 2012), programs that can assist these groups are essential. Evidence suggests that participation in after-school programs do make a difference for minority students. For instance, analysis of dropout rates for students that participated after-school programs through elementary and middle school indicated a positive impact on graduation rates (Little, 2007; Lauver, 2012). Because programs work to support the academic community, students can be exposed to tutoring opportunities and supplemental learning activities that may not be available without after-school programs (Hirsch, 2011). In essence, after-school programs can help students beginning in the early grades and extend this benefit throughout students' school careers.

## **After-school Program Benefits**

Because of benefits to educators, parents, and students, after-school programs have important implications for families, schools, and communities. Programs can provide youth with mentors, academic assistance, and appropriate social experiences (Vandell et al., 2007; Hirsh et al., 2010; Lauver, 2012). As Anderson-Butcher (2010) discussed, young people are more likely to improve learning when a positive rapport is built. Experiences in after-school programs can create these possibilities for students, which can strengthen the family structure as well. According to The Wallace Foundation (2011), programs especially benefit low-income families with 56% of parents seeking information regarding after-school initiatives. Because these systems are often structured differently than the traditional school day, students can also work on experiments or projects to promote teamwork through collaboration (Hirsch, 2011).

While benefits for students and families are numerous, after-school programs can promote positive outcomes for schools as well. Programs can have positive effects on teachers, staff, and students within schools. Practitioners and other staff working outside the normal school day in programs can build a solid working relationship. These examples have positive influences over youth in programs by promoting appropriate behaviors, encouragement, and academics (Vandell et al., 2007; Fredrick, 2011). After-school program can also benefit students within schools. Tutoring assistance, mentoring opportunities, and improved peer relationships have all been cited as positive results of after-school program participation (Hartry et al., 2008; Weiss et al., 2009).

Besides positive influences for schools, after-school programs positively support communities as well. When unsupervised youth participate in risky behaviors such as

drugs or crime, entire communities can be impacted. However, after-school initiatives can remedy these situations by offering youth positive alternatives (The Wallace Foundation, 2011). Parents in communities offer their support as well with over 50% contributing to after-school program activities. According to (Hirsch, 2011), community-based programs also positively impact “socio-emotional” development, especially among low-income children and families. This idea stems from the notion that workers from youths’ neighborhoods can relate to similar situations. These individuals can teach positive coping skills and techniques that would be unavailable if programs did not exist.

Multiple research studies provide evidence to support ideas regarding after-school program benefits for families, schools, and communities. For instance, analyses of after-school programs in Ohio revealed improvements with family rapport, peer relationships, and teamwork (Anderson-Butcher, 2010). After-school programs in Chicago serve as a second example with increases in attendance rates and academic performance (The Wallace Foundation, 2011). Because students with lower-socioeconomic status bring unique challenges, programs to assist these students are also essential. One such study analyzed the effects of Project HOPE with high-performing low-income students. Students reported an 85% positive rating for the program and a 92% increase in perceived social support (Miller & Gentry, 2010).

Such evidence supports the notion that after-school programs are needed throughout U.S. schools and communities. As Hartry et al. (2008) and Anderson-Butcher (2010) summarized, programs can help students improve social skills and academic learning. Both school-based and community-based programs increase neighborhood cohesiveness by building relationships among children, families, and program



developers. Benefits for schools exist as well with academic tutoring and assistance for struggling learners. Neuman (2010) best described the importance of programs and contended:

The stakes couldn't be higher. Thousands of children, many of them emotionally vulnerable, are on the precipice of developing either self-confidence or self-consciousness, either industry or inferiority. Those who succeed will do so because they have some kind of structure to help them move to the next level. High-quality after-school programs provide one of the scaffolds for changing the odds for these children. (p. 36)

Neuman's statement reveals the challenge left for schools, communities, and government leaders. Children need high-quality programming in order for programs to be successful. Only then can after-school systems help students grow academically, emotionally, and socially.

### **After-school Program Evaluation**

How can program developers ensure that quality programming is available for students and families across the United States? With an estimated 93% of parents supporting programs, it is important that evidence exists that shows how after-school initiatives are beneficial (Shann, 2001). For the last decade, numerous researchers have attempted to evaluate program efficiency to answer such questions. This trend is in direct response to the NCLB legislation of 2001 (Dodd & Bowen, 2011; Nelson-Royes & Reglin, 2011). Just as educators are held accountable through student achievement and growth measures, many researchers believe after-school programs should show similar positive results (Apsler, 2009; Fredrick, 2011).



Besides accountability concerns, the millions of dollars spent on programs each year represent another reason for evaluations. If programs are not positively impacting students, families, and communities, then questions arise about how money should be spent. In addition, with an increased demand for after-school programs, more funds will be needed in the future (After-School Alliance, 2012). These issues have caused an increase in evaluation studies aimed at identifying specific ways after-school programs influence students, parents, communities, and educators.

However, research reveals mixed conclusions with some analyses showing encouraging results and others have minimal or no impact. One positive example involved a two-year Vandell et al., (2007) study of 35 elementary and middle schools. The investigation examined a total of 2,914 students and level of after-school program participation. Results revealed significant gains in math scores compared to those not participating in the after-school program. In addition, students that consistently attended after-school activities produced improvements in social and behavioral components compared to those that did not participate.

Similarly, Arcaira, Vile, and Reisner, (2010) reviewed the results of the Citizen Schools longitudinal study that provided after-school activities for middle school students. Groups of students participated in group investigations, leadership training, and academic enrichment. Homework assistance was provided as well as tutoring for reading and mathematics. By high school, former Citizen School participants out-performed those that had not participated in the program in math achievement tests. Students also had lower drop-out rates and reported higher overall academic success.

In addition, Lauver (2012) summarized the results of another encouraging example that included 19,000 students involved in Los Angeles's LA's Best program. A total of 189 schools participate in the program and provide homework support for students. Academic assistance in reading and mathematics is incorporated as well. Evaluations of the program indicated positive influences over students' commitment to learning and graduation outlook. Other studies that reviewed dropout rates for former LA's Best students reported encouraging results as well. Those that participated in the program during elementary school for at least one year had reductions in dropout rates. Moreover, rates were further reduced the more years that students were exposed to the program (Little et al., 2007; Lauver, 2012).

Besides the LA's Best program, the Communities Organizing Resources to Advance Learning (CORAL) report involving 23 after-school programs also found positive impacts on student learning. Oral reading, vocabulary activities, book discussions, and research-based reading strategies were implemented during the program. Similar to other programs, students also spent time interacting socially or participating in cross-curricular activities. After a two-year period, researchers found significant gains in students' reading achievement levels as well as an improved outlook on academics and peer relations (Sheldon et al., 2010).

Such examples demonstrate how after-school programs can be an essential part of the academic community. Programs can positively impacted student behavior, attendance, and peer interactions (Apsler, 2009; Nelson-Royes & Reglin, 2011). With appropriate personnel and activities, students can be assisted in a variety of areas

including learning and social contexts. These positive results can serve as examples to help program developers as after-school programs move to the 21<sup>st</sup> century.

Despite such encouraging conclusions, analyses of some programs reveal minimal impact. For example, the Success for All Foundation reported no significant influence on 1,828 students' reading scores across 25 after-school centers (National Center for Education Evaluation and Regional Assistance, 2009). The program used a standards-based curriculum with a focus on cooperative learning and multiple assessments to monitor students. The program lasted for approximately 70 days and offered students homework assistance as well. After one year, results revealed no substantial impact on student reading growth when compared to nonparticipants or across different subgroups.

Similarly, the Sanders (2011) study that examined the impact of before-school and after-school program participation reported no substantial impact on students' math and reading TCAP scores. In the study, participant scores were compared to students that did not attend any type of program. Both programs offered homework assistance as well as structured activities to tutor students in reading and math. Although students attended programs regularly, no significant impact was found with either program type. Scores were also compared across genders, grade level, and ethnic groups with no significant differences reported.

In addition, a comparable study involving New York's After-School Corporation revealed minimal results. Students were given homework assistance as well as academic enrichment activities. A tutoring focus on reading and math was also incorporated. While the program did report gains in math for students, no significant impact for reading was



reported at the end of the first year. After three years, gains for math continued, but reading scores continued to have marginal growth (Little et al., 2007).

While studies focusing on academic growth are important, discrepancies have also been found in other areas involving after-school program impact. For instance, researchers analyzing perceived program quality and communication have found mixed results with parent perception and student outcomes (Gardner et al., 2009; Dodd & Bowen, 2011). Other researchers have pointed out the difficulty with program implementation that hinders overall effectiveness and student results (Hartry et al., 2008). Because programs serve students and parents, such issues should be addressed to improve program quality and development.

How can such conclusions be explained? Several researchers point out specific reasons for such occurrences. According to Mahoney et al. (2010), staff competency may clarify why some studies results show minimal conclusions. Without proper training to implement tasks, student participants will not achieve desired outcomes. Weiss et al. (2009) supported this view and added that programs goals may also be an issue. If providing secure, nurturing and appropriate social opportunities is stressed, then academics outcomes will be less encouraging. Multiple researchers (Sanders, 2011; Vandell et al., 2007) also point out that program implementation may be a concern as well. If instructors spend varying amounts of time on interventions, group students differently, or use variations in lessons, specific targeted outcomes regarding results may not occur.

Besides program structure and implementation, other researchers point out issues with studies involving after-school program evaluation. Apsler (2009) revealed that the



methodology in the studies themselves might be flawed. Other researchers contended that problems with attendance and attrition explain why some programs have a minimal impact on achievement and growth (Dietal, 2009, National Center for Education Evaluation and Regional Assistance, 2009). In essence, testing outcomes of programs is in itself an overwhelming task because groups are invited to attend and random assignment is difficult.

### **Improvement of After-school Programs**

Although many studies have shown significant outcomes, questions remain about how to improve those programs that reveal minimal results. Researchers (Hartry et al., 2008; Weiss et al., 2009; Sheldon et al., 2010) contend that programs need structure if they are to be successful. While after-school programs vary from the normal school day, student participants still need organization with set schedules. When students know what to expect on a daily basis, outcomes for students can be improved. In a study that used the highly structured Read 180 program after-school, Hartry et al. (2008) found that program directors were able to successfully implement all aspects of the program including audio readings and group assignments. Students perceived positive experiences from the program as well. As Dietal (2009) reported, such results show that evidence-based programs can be successful in the after-school setting when specific skills are targeted.

Just as classroom teachers require preparation, many researchers argue that after-school program workers need specific training as well. Mahoney et al. (2010) and The Wallace Foundation (2011) supported this claim and argued that workers with prior teaching experience produce successful results. Workers with advanced degrees are also

essential when significant academic improvements are expected. Even when behavior or social outcomes are targeted, workers with knowledge in these areas produce the best outcomes (Hirsch et al., 2010).

Research exists that support ideas that worker preparation enhances programs. In a study involving university training and after-school programs, Mahoney et al. (2010) reported that 94% of workers felt their academic abilities had improved, and 92% believed their knowledge about youth had increased. Examples of training for workers involved workshops, professional meetings, or online training sessions. Researchers point out that such training programs will be extended in the future as after-school evaluation techniques evolve and efforts to reduce employee turnover increase (Hirsch et al., 2010; Sheldon et al., 2010).

While multiple researchers support the importance of workers' preparedness, student attendance and participation are also essential. The Harvard Family Research Project found that up to 70% of after-school evaluation results had variations in attendance reporting (Dietal, 2009; Little et al., 2007). However, if students are not present to participate in after-school instruction, program impact will continue to be reduced. Others point out that engagement is a fundamental component with a focus on specific skills and not simply homework completion (National Center for Education Evaluation and Regional Assistance, 2009). Multiple researchers also summarized the importance of "duration, intensity, and breadth" related to student participation (Dietal, 2009; Anderson-Butcher, 2010). In this view, evaluation results of programs depend on the length of time students participate, how involved they become, and specific topics covered during the program.

In addition to student participation and attendance, other researchers point out several different components that can be used to increase quality. For instance, Little et al. (2007) argued that after-school programs needed to be more closely aligned with school curriculums for academic improvements to be obtained. However, completing this task is a delicate process because one aspect that makes programs successful is the differences found from the normal school day (Gardner et al., 2009; Neuman, 2010). Others argued that recognizing programs as an official means to support schools would increase positive outcomes and future reforms should include after-school programs as well (Weiss et al., 2009; Dodd & Bowen, 2011). Finally, Yohalem and Wilson-Ahlstrom (2010) contended that if specific systems designed to evaluate after-school programs such as the Youth Program Quality Assessment Program or the Program Observation Tool were implemented, then different results would be obtained.

### **Future Considerations**

The wide variety of recommendations for improvement creates several important implications for practitioners. Mahoney et al., 2009 discussed this situation and purported that programs need growth, maintenance, and the ability to meet societal needs. At the same time, care should be taken to keep expectations for programs realistic with the resources that are available. For instance, Holleman et al., 2010 pointed out that reviews of literature discovered numerous expectations for programs such as increasing student achievement scores, reducing crime, and decreasing teen pregnancy rates and drug use.

The increasing pressure to meet these needs reveal another important consideration for after-school programs in the 21<sup>st</sup> Century. Unlike earlier programs that formed the foundation for the after-school system that exists today, the use of play is



disappearing. Viewed as an important component of childhood development, some believe a focus on achievement scores has reduced this “rite of passage” for children (Halpern, 2002).

Another important component for future success of programs relates to funding concerns. With recent economic pressures, resources for after-school programs have become strained. Despite this situation, the needs for these supplemental programs continue to increase (Yohalem & Wilson-Ahlstrom, 2010; After-School Alliance, 2012). Without support and funding, many communities may begin to see a decrease in programs that are available. Halpern, 2002 best summarized this situation and argued:

After-school programs can work as a developmental resource and support for children only to the extent that they are allowed to work... and they will only be able to fulfill some of their potential if they themselves are adequately nurtured, supported, and protected. (p. 206)

Halpern’s statement points out the need for increased attention regarding the structure, implementation, and future growth for after-school programs. In essence, programs cannot be expected to provide continual support for students and families, if little attention is geared towards the programs themselves.

## **Conclusion**

After-school programs can be seen as one of the fundamental components that offer support for children, families, schools, and communities across the United States. As early as the 19<sup>th</sup> century, individuals recognized the importance of these programs (Halpern, 2002; Sanders, 2011). Once problems began to emerge in small towns and large cities involving supervision and crime, legislation and funding for programs



emerged. Today, as accountability measures increase for the nation's educational system, after-school systems will continue to be used as intervention tools that can help students improve. Thus, these multifaceted entities have become an integral part of the nation and will continue to grow with society in the future.

## Chapter III

### Methodology

#### Introduction

Throughout school districts, one main goal of after-school programs in school settings is assisting students educationally (Hirsch et al., 2010). With the emphasis on students' academic growth, an increased number of programs are geared toward improving test scores. Because of varying results with this process, it is essential that districts review currently existing programs for effectiveness. While multiple studies (Vandell et al., 2007; Lauver, 2012; Sheldon et al., 2010) have reported positive gains on student test scores resulting from after-school program participation, others have argued that programs have minimal impact on increasing achievement measures (National Center for Education Evaluation and Regional Assistance, 2009; Sanders, 2011). This study will add to the current knowledge regarding the impact of after-school program participation on students' achievement measures. Specific trends with program influence across gender and grade level will be reviewed as well.

#### Research Design

An ex post facto research design was used for the study. The independent variable was after-school program participation. Student TCAP reading achievement was the dependent variable. The study examined the impact of after-school program participation on students' reading achievement. Independent variables such as gender and grade level were examined as well. The study used *t* tests, analysis of variance (ANOVA), and Mann-Whitney U tests at the .05 level to determine statistical significance. Data were entered into the JMP statistical software package for all hypotheses.

## **Participants**

The study took place in a middle school with a population of 1,169 6<sup>th</sup>, 7<sup>th</sup>, and 8<sup>th</sup> grade students. The sample consisted of 44 students that participated in the after-school program during the 2011-2012 school year. The sample can be generalized to the school's population because each grade level is represented in the sample. Caucasian, Hispanic, Asian, and African American students were included in the sample. All students in the sample participated in the TCAP assessment as well.

## **Instrument**

The TCAP is a criterion-referenced state mandated test completed in grades 3-8. The assessment is a timed, multiple-choice exam with results reported to parents, administrators, and teachers. Each year the test is customized to assess academic skills outlined in the Tennessee State Curriculum standards. Students complete the test in reading, math, science, and social studies each school year. The test is used to determine student content mastery and academic growth in Tennessee. Results of the test are used to track student, school, and educator progress regarding achievement and No Child Left Behind requirements (State of Tennessee Department of Education, 2010).

## **Procedure**

Before the study began, approval was granted from the school district's Director of Curriculum and Instruction, the school principal, and the Institutional Review Board at Austin Peay State University. The study used archived TCAP data and an ex post facto design, so no participants were directly contacted. Written consent to obtain data was granted prior to any collection procedures. Only reading NCE scores from 2010-2012 school years were used during the study.



The supervisor of data collected data and removed any identifying characteristics. Students were coded based on grade level, gender, and ethnicity. Reading NCE scores were compared from the 2010-2011 and 2011-2012 school years for each student. In order to measure growth, gain scores for each student were computed as well. Reading scores from 2010-2011 served as the pre-test and scores received after program participation in 2011-2012 served as the post-test. An Excel spreadsheet was used to collect information, and all data was destroyed upon the completion of the study. Data was entered into the JMP Statistical Discovery (SAS) software package and analyzed in order to answer the research questions.

### **Data Analysis Plan**

The purpose of the study was to examine the relationship between after-school program participation and literacy growth by analyzing students' scores before and after participation in programs. In the study, TCAP reading NCE scores were used to measure literacy achievement prior to program attendance in 2010-2011 and after participation was complete in 2011-2012. To measure growth, gain scores were computed for each student as well. Reading TCAP scores in 2010-2011 served as the pre-test and scores received after program participation in 2011-2012 served as the post-test. The study also analyzed differences between genders and grade levels. Paired *t* tests, analysis of variance (ANOVA), and Mann-Whitney U tests were used in the study at the .05 level of significance.

A dependent paired, repeated measures *t* test was used to analyze null hypothesis one. The test determined whether a significant difference existed between students' scores before and after program participation. Students' TCAP reading NCE scores

prior to program attendance in 2010-2011 were compared to scores obtained after program participation in 2011-2012. The test was used to determine whether after-school program participation significantly impacted student literacy achievement.

Because assumptions for equal variances were not satisfied, the second null hypothesis used the Mann-Whitney U analysis to determine whether a significant difference existed between gender and literacy growth. The test compared TCAP reading gain scores for males and females after program participation in 2011-2012. The test was used to investigate whether after-school program participation influenced male and female literacy growth differently.

An one-way ANOVA was used for the third null hypothesis to determine whether a significant difference existed between 6<sup>th</sup>, 7<sup>th</sup>, and 8<sup>th</sup> grade literacy gain scores. TCAP reading gain scores after program participation in 2011-2012 were compared across each grade level. If significance was found, a post hoc test Tukey-Kramer test was used for further analysis. The test was used to determine whether after-school program participation influenced literacy growth differently across grade levels.

Chapter IV

Results and Analysis of Data

Introduction

This study examined an after-school program for one middle school in Clarksville Montgomery County. The purpose of this study was to determine if a significant relationship existed between after-school program participation and reading achievement. The study used TCAP reading normal curve equivalent (NCE) scores to measure literacy for the 2010-2011 and 2011-2012 school years. A total of 51 students participated in the after-school program, but seven participants were excluded from the study due to testing differences such as TCAP Alt or Portfolio assessment. Table 1 summarizes the number of study participants for each grade level.

Table 1

*After-school Program Study Participants 2011-2012*

Grade Level	Number of Participants
Sixth Grade	24
Seventh Grade	10
Eighth Grade	10

Using the JMP statistical software program, TCAP reading NCE scores prior to after-school program participation in 2010-2011 were compared to TCAP reading NCE scores in 2011-2012 after participation in the after-school program was completed. In order to measure growth, literacy gain scores were computed for each student as well. TCAP reading scores from 2010-2011 served as the pre-test and scores received after



program participation in 2011-2012 served as the post-test. Using descriptive statistics, three different hypotheses were researched. Gender was analyzed for the entire group. Analyses for performance based on grade level were included as well. Hypotheses with two variables used the paired repeated measures *t* test. An Analysis of Variance (ANOVA) was used for the hypothesis with three variables. A post-hoc Tukey-Kramer test was used for further analysis if ANOVA results indicated a statistical difference. Because the assumption for equal variances was not satisfied, one hypothesis was analyzed using the Mann-Whitney U Test.

### Presentation and Analysis of Data

#### Research Question One

Does after-school program participation have an impact on students' reading TCAP achievement? Using descriptive statistics, a paired repeated measures *t* test was used to compare students' TCAP reading achievement before and after participation in the after-school program. Table 2 summarizes the comparison of TCAP reading NCE scores prior to participation in 2010-2011 and post participation in 2011-2012. Because of the sample size, 6<sup>th</sup>, 7<sup>th</sup>, and 8<sup>th</sup> grades were combined in the analysis.

Table 2

*Paired t test comparing TCAP reading scores in 2010-2011 and 2011-2012*

School Year	n	M	df	<i>t</i>	<i>p</i>
2010-2011	44	36.091	43	-1.03	.301
2011-2012	44	33.591	43		
MD -2.5					

*Note:  $p < .05$ , two tailed; MD=Mean Difference*

## Hypothesis One

The null hypothesis stated there would be no statistically significant difference between students' TCAP reading scores before and after participation in the after-school program. The  $t$ -value of -1.03 and  $p$ -value of .301 for the paired repeated measures  $t$  test indicated there was no statistically significant difference between the scores. Therefore, the null hypothesis was retained.

## Research Question Two

Does afterschool program participation impact male and female students' TCAP reading achievement differently? The second research question analyzed gender and afterschool program participation for literacy growth. Since assumptions for equal variances were not satisfied, a Mann-Whitney U Test was used to compare male and female students' literacy gain scores after participation in the after-school program. Table 3 summarizes the comparison of students' gain scores post participation in 2011-2012. Because of the sample size, 6<sup>th</sup>, 7<sup>th</sup>, and 8<sup>th</sup> grades were combined in the analysis.

Table 3

*Mann-Whitney U Test comparing male and female gain scores in 2011-2012*

School Year/Variables	n	Score Sum	M	Z	P
2011-2012 Males	29	684	23.586	-.768	.4424
2011-2012 Females	15	306	20.4		

*Note:  $p < .05$ , two-tailed*

## Hypothesis Two

The null hypothesis stated there would be no statistically significant difference between male and female students' TCAP reading growth scores after participation in the after-school program. The Z score result of  $-.768$  and the  $p$ -value of  $.4424$  revealed no significant difference between male and female growth in 2011-2012 post after-school program participation. Therefore, the null hypothesis was retained.

## Research Question Three

Does after-school program participation impact students' reading achievement differently across grade levels? The third research question analyzed students' grade level and after-school program participation. A one-way ANOVA was utilized to compare students' TCAP reading gain scores for each grade after participation in the after-school program. Based on ANOVA results, a post-hoc Tukey-Kramer test was used to identify which means were statistically significant. Table 4 summarizes the comparison of TCAP reading gain scores for each grade level post participation in 2011-2012. Table 5 summarizes the ordered differences report for the Tukey-Kramer analysis.

Table 4

*One-way ANOVA comparing TCAP reading gain scores by grade level in 2011-2012*

Grade level	N	M (SD)	df	$f$	$p$
6 <sup>th</sup> 2011-2012	24	-2.542(3.12)	2	3.4388	.0416*
7 <sup>th</sup> 2011-2012	10	-11.400(4.83)	2		
8 <sup>th</sup> 2011-2012	10	6.500(4.83)	2		

Note: \* $p < .05$ , two-tailed; SD=standard error



Table 5

*Tukey-Kramer ordered differences report comparing mean gain scores by grade level*

Comparison	Difference	SD Difference	<i>p</i>
7 <sup>th</sup> -8 <sup>th</sup>	17.900	6.83	.00320*
6 <sup>th</sup> -8 <sup>th</sup>	9.04	5.74	.2683
6 <sup>th</sup> -7 <sup>th</sup>	8.858	5.74	.2823

Note: \*  $p < .05$ , two-tailed; SD=standard error

### Hypothesis Three

The null hypothesis stated that there is no statistically significant difference between 6th, 7th, and 8th grade students' TCAP reading growth after participation in the after-school program. The one-way ANOVA  $p$ -value result of .0416 indicated a statistical difference at the .05 level with relation to grade level. Based on these results, statistical evidence exists that suggests one growth mean is statistically different from another. The Tukey-Kramer results comparing mean gain scores across grades revealed a significant difference between 7<sup>th</sup> and 8<sup>th</sup> grade gain scores. Therefore, the null hypothesis was rejected.

## Chapter V

### Summary, Findings, Conclusions, Recommendations

#### Summary

The purpose of the study was to examine the relationship between after-school program participation and reading achievement by analyzing students' scores and growth after participation in programs. In the study, TCAP reading NCE scores were used to measure literacy achievement prior to program attendance in 2010-2011 and after participation was complete in 2011-2012. The study also analyzed differences between genders and grade levels. Additional findings regarding ethnicity were examined as well.

After-school programs have been an important component in our society since the 19<sup>th</sup> century (Halpern, 2002). Programs have evolved from a focus on providing supervision to an educational support system for students (Sanders, 2011). Because of NCLB requirements, recent studies have been concerned with evaluating the effectiveness of programs' ability to positively impact student performance and growth. Multiple researchers (Little et al, 2007; Lauver, 2012; & Sheldon et al., 2010) have reported positive outcomes regarding after-school program participation and achievement. However, other studies revealed minimal results in this area with students making insignificant achievement gains after participating in programs (National Center for Educational Evaluation and Regional Assistance, 2009; Sanders, 2011). Such results continue to raise concerns regarding after-school program development, management, and effectiveness.

Because all educators are concerned with meeting NCLB requirements, districts need avenues to help reach this goal. After-school programs should serve as one component that can assist schools with meeting this challenge. Similar to districts across the U.S., after-school programs can be found in multiple schools in Clarksville Montgomery County. Examining how such programs impact student learning can assist the district in the future with after-school program evaluation, management, and structure.

This study was conducted in one middle school in Clarksville Montgomery County and examined the performance of 44 participants in the after-school program. During the 2010-2011 school year, students did not participate in the program, but attended sessions after school during the 2011-2012 school year. The study tested three null hypotheses including overall performance, gender, and differences between grade levels. Paired repeated measures *t* tests, Analysis of Variance (ANOVA), and the Mann-Whitney U were used with JMP statistical software to determine statistical significance at the .05 level.

## **Findings**

The goal of this study was to determine if after-school program participation had a significant impact on student literacy achievement and growth. Hypothesis one compared students' TCAP reading NCE scores prior to participation in 2010-2011 to those earned post participation in 2011-2012. Because of the sample size, all 44 students were included in the analysis. Results indicated that there was not a statistically significant difference between scores before and after participation in the after-school



program. The null hypothesis was retained indicating that no significant change occurred in students' literacy scores after participation in the after-school program.

Hypothesis two compared male and female students' TCAP reading gain scores post participation in 2011-2012. All students were included in the analysis due to the sample size. Because assumptions for equal variances were not satisfied, a Mann-Whitney U Test was used to compare gain scores based on gender. Results indicated no statistically significant difference between male and female growth post participation in the after-school program. The null hypothesis was retained indicating that there was no statistical difference in male and female literacy growth after participation in the afterschool-program.

Hypothesis three compared TCAP reading gain scores across grade levels post participation in 2011-2012. One-way ANOVA results indicated there was a statistically significant difference between grade levels. In 2011-2012, both 6<sup>th</sup> and 7<sup>th</sup> grade experienced decreases in average scores with 6<sup>th</sup> at 2.5 points and 7<sup>th</sup> grade at 11.4 points. However, the 8<sup>th</sup> grade experienced a 6.5 point gain in 2011-2012. Results of the Tukey-Kramer post hoc test revealed a significant difference between 7<sup>th</sup> and 8<sup>th</sup> grade gain scores. Thus, the null hypothesis was rejected indicating that a statistical difference existed between 6<sup>th</sup>, 7<sup>th</sup>, and 8<sup>th</sup> grade students' TCAP reading growth after participation in the after-school program.

## **Conclusions**

The purpose of the study was to examine the relationship between after-school program participation and reading achievement by analyzing students' scores before and after participation in programs. In the study, TCAP reading NCE scores were used to

measure literacy achievement prior to program attendance in 2010-2011 and after participation was complete in 2011-2012. In order to measure growth, gain scores were computed for each student as well. TCAP reading NCE scores for 2010-2011 served as the pre-test and scores received after participation in the after-school program in 2011-2012 served as the post-test. The study also analyzed differences between genders and grade levels. Based on the findings of study, the following conclusions were presented:

1. There was no statistically significant change found in student literacy mean scores before and after participation in the after-school program. For the purposes of this study, it can be concluded that after-school program participation did not cause a statistical change in student literacy performance.
2. There was no statistically significant difference found in student literacy growth in regards to gender. Based on this study, neither gender benefited more than the other from participating in the after-school program.
3. There was a statistically significant difference found in student literacy growth in regards to grade level. Results indicated a statistical difference in gain scores between the 7<sup>th</sup> and 8<sup>th</sup> grades. This suggests that after-school program participation impacted literacy growth differently across grade levels, and the 8<sup>th</sup> grade tended to benefit the most from participation in the after-school program.

## **Recommendations**

Based on study results, the following recommendations are made:

1. This study revealed no statistical change in literacy achievement after participation in the after-school program. Clarksville Montgomery County

could use these results to find ways to enhance current programs' support of literacy.

2. Results did reveal a statistical change in growth at the 8<sup>th</sup> grade level. Studies found that in many cases those implementing after-school programs spend different amounts of time on interventions, group students differently, or use variations in lesson presentation. This causes differences in outcomes regarding targeted results (Sanders, 2011; Vandell et al., 2007). Further analysis could be conducted to determine how specific strategies used with 8<sup>th</sup> grade students could be extended across grade levels to produce similar literacy growth.

### **Future Research**

1. Expanding the study to include more participants would be beneficial in determining how after-school participation influences multiple schools. This study could be replicated to include all middle schools within the district with after-school programs. This would provide a broader perspective for district personnel in determining how after-school program participation influences literacy achievement.
2. The study could be broadened to include elementary and high schools as well as other forms of literacy measurements. This study was limited to one school and literacy assessment. Analyzing other intervention methods within the district would be feasible in assisting personnel with identifying approaches that most benefit student growth.



## References

- Arcaira, E., Vile, J. D., & Reisner E. R. (2010). *Citizen schools: Achieving high school graduation: Citizen schools' youth outcomes in boston* (Research Report). Retrieved from: [www.policystudies.com/studies/?download=79&id=39](http://www.policystudies.com/studies/?download=79&id=39)
- After-school Alliance. (2012). *21<sup>st</sup> century community learning centers* (Research Report). Retrieved from After-school Alliance website: <http://www.afterschoolalliance.org/researchFactSheets.cfm>
- Anderson-Butcher, D. (2010). The promise of after-school programs for promoting school connectedness. *Prevention Researcher*, 17(3), 11-14.
- Apsler, R. (2009). After-school programs for adolescents: A review of evaluation research. *Adolescence*, 44(173), 1-19.
- Dietal, R. (2009). After-school programs: Finding the right dose. *Phi Delta Kappan*, 91(3), 62-64.
- Dodd, A. T. & Bowen, L. M. (2011). 21<sup>st</sup> century community learning centers-improving the academic performance of at-risk students: A bronx tale. *Journal of Health & Human Services*, 34(1), 10-41.
- Durlack, J., Mahoney, J. L., Bohner, A. M., & Parente, M. E. (2010). Developing and improving after-school programs to enhance youth's personal growth and adjustment: A special issue of acjp. *American Journal of Community Psychology*, 45(3), 285-293.
- Fredrick, J. A. (2011). Engagement in school and out of school. *Theory Into Practice*, 50(4), 327-335.

Gardner, M., Roth, J. L., & Brooks-Gunn J. (2009). *Can after-school programs help level the playing field for disadvantaged youth?* Unpublished manuscript, Department of Education, Columbia University, New York, New York.

Halpern, R. (2002). A different kind of child development institution: The history of after-school programs for low-income children. *Teachers College Record*, 104(2), 178-211.

Hartry, A., Fitzgerald, R., & Porter, P. (2008). Implementing a structured reading program in an after-school setting: Problems and potential solutions. *Harvard Educational Review*, 78(1), 181-210.

Hirsch, B. J., Mekina, M. A., & Stawicki, J. (2010). More than attendance: The importance of after-school program quality. *American Journal of Community Psychology*, 45, 447-452.

Hirsch, B. J. (2011). Learning and development in after-school programs. *Phi Delta Kappan*, 92(5), 66-69.

Holleman, M. A., Sundius, M. J., & Bruns, E. J. (2010). Building opportunity: Developing city systems to expand and improve after school programs. *American Journal of Community Psychology*, 45, 405-416.

Lauver, S. (2012). Supporting student success through after-school and expanded learning programs. *District Administration*, 48(3), 40-43.

Little, P., Wimer, C., & Weiss, H. (2007). After-school programs in the 21<sup>st</sup> century: Their potential and what it takes to achieve it. Unpublished manuscript, Harvard Graduate School of Education, Cambridge, Massachusetts.

- Mahoney, J. L., Levine, M. D., & Hinga, B. (2010). The development of after-school program educators through university-community partnerships. *Applied Developmental Science, 14*(2), 89-105.
- Mahoney, J. L., Parente, M. E., & Zigler, E. F. (2009). After-school programs in america: Origins, growth, popularity, and politics, *Journal of Youth Development, 4*(3). Retrieved from [www.nsba.org](http://www.nsba.org)
- Miller, R. & Gentry, M. (2010). Developing talents among high-potential students from low-income families in an out-of-school enrichment program. *Journal of Advanced Academics, 21*(4), 594-627.
- National Center for Education Evaluation and Regional Assistance. (2009, February). *After-school Reading* (Issues Brief 4056). Washington, DC: Author.
- Nelson-Royes, A. & Reglin, G. L. (2011). After-school-tutoring for reading achievement and urban middle school students. *Reading Improvement, 48*(3), 105-117.
- Neuman, S. B. (2010). Empowered-after school. *Educational Leadership, 67*(7), 30-36.
- Sanders, J. C. (2011). *A study of the effectiveness of after-school and before-school programs with low-performing middle school students* (Unpublished doctoral dissertation). Union University, Hendersonville, Tennessee.
- Shann, M. (2001). Students' use of time outside of school: A case for after-school programs for urban middle school youth. *The Urban Review, 33*(4), 339-359.
- Sheldon, J., Arbretton, A., Hopkins, L., & Grossman, J. B. (2010). Investing success: Key strategies for building quality in after-school programs. *American Journal of Community Psychology, 45*, 394-404.



- Tennessee Department of Education, (2010). *Guide to Test Report Interpretation*. Office of Assessment Evaluation and Research. Retrieved from [http://www.state.tn.us/education/assessment/doc/ACHEdu\\_Guide\\_test\\_interp.pdf](http://www.state.tn.us/education/assessment/doc/ACHEdu_Guide_test_interp.pdf).
- The Wallace Foundation. (2011). *Think outside the clock: Planners link after-school programs to classroom curriculum* (Research Report). Retrieved from The Wallace Foundation website: <http://www.wallacefoundation.org/knowledge-center/after-school/coordinating-after-school-resources/Pages/Think-Outside-the-Clock-Planners-Link-After-School-Programs-to-Classroom-Curriculum.aspx>
- Vandell, D. L., Reisner, E. R., & Pierce, K.M. (2007). *Outcomes linked to high-quality after-school programs: Longitudinal findings from the study of promising after-school programs*. Unpublished manuscript, Department of Education, University of California, Irvine, California.
- Weiss, H. B., Little, P. M., Boufard, S. M., Deschens, S. N., & Malone, H. J. (2009). Strengthen what happens outside school to improve what happens inside. *Phi Delta Kappan*, 90, 592-596.
- Yohalem, N., & Wilson- Ahlstrom, A. (2010). Inside the black box: Assessing and improving quality in youth programs. *American Journal of Community Psychology*, 45, 350-357.

## Appendices

**Appendix A:**  
**APSU IRB Approval Letter**



## Appendix A:

Date: February 19, 2013

RE: Study number 13-008

Dear Verlina Heady,

Thank you for your recent submission to the IRB. We appreciate your cooperation with the human research review process.

Congratulations! This is to confirm that your proposal has been approved and that your study is exempt from further review by the APIRB. Exemption from further review is granted per federal regulations **45 CFR 46.401(b), category 4:** Research involving the collection or study of existing data, documents, records, pathological specimens, or diagnostic specimens, if these sources are publicly available or if the information is recorded by the investigator in such a manner that subjects cannot be identified, directly or through identifiers linked to the participants.

You may conduct your study as described in your application, effective immediately. A closed study report to IRB is required by February 19, 2014 or before.

Please note that any changes to the study must be promptly reported and approved. Some changes may be approved by expedited review; others require full board review. If you have any questions or require further information, you can contact me by phone (931-221-6106) or email ([shepherd@apsu.edu](mailto:shepherd@apsu.edu)).

Again, thank you for your cooperation with the APSU IRB and the human research review process. Best wishes for a successful study!

Sincerely,



Omie Shepherd, Chair  
Austin Peay Institutional Review Board

Cc: Dr. Tammy Shutt

**Appendix B:**  
**CMCSS Approval Letter**

**Appendix B:**

From: Sallie Armstrong

Sent: Thursday, November 08, 2012 9:55 AM

To: Verlina Heady

Cc: Leigh Ann Parr

Subject: RE: Field Study Letter

Ms. Heady,

You have permission to conduct research in CMCSS referred to in your message.