

The Effects of the *Shoot for the Goal* Contest on Reading Performance for Sixth Grade Middle
School Students

by

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Abstract

The purpose of this study was to investigate the effects of implementing the *Shoot for the Goal* contest on the reading performance of sixth grade students. This ten-week study used a quasi-experimental pretest/posttest research design with the students who participated in the contest serving as the treatment group and the students who did not participate in the contest serving as the control group. The measurement tool used in this study to indicate growth was the Anne Arundel County Public Schools (AACPS) Fall and Winter Reading and Language Arts Benchmark exams. The independent variable for this study was the *Shoot for the Goal* contest, and the dependent variable was the difference in the students' reading comprehension performance on the AACPS Reading and Language Arts Benchmark exam. A *t*-test for independent groups procedure was used. These results ($t = .597$, $df = 285$, $p = .551$) suggests that the difference in the amount of increase in performance among students who participated (i.e. 5 percentage points) versus those who did not participate (i.e. 4 percentage points) was not statistically significant. In addition, a *t*-test procedure was used to compare the pretest versus posttest performance of males versus females, and these results ($t = 2.309$, $df = 141$, $p = .022$) suggest that the overall mean difference in performance between males (7.5) and females (2.5) on the Fall Language Arts Benchmark versus Winter Benchmark exams was statistically significant. Further research is warranted to analyze the effectiveness of contests on the reading performance of middle school students.

CHAPTER I

INTRODUCTION

Today, many middle school students lack the literacy skills required to be successful in their classes and beyond. Current research shows that eighth graders performing at or above basic in reading have not changed significantly since 2009 (U.S. Department of Education, Institute of Educational Sciences [IES], 2011). With little progress and a staggering 66 % of America's eighth grade public school students not meeting the National Assessment of Education Progress standard of reading proficiency for their grade level (IES, 2011), educators have their work cut out for them. These statistics become even more critical to educators because of the strong link between low reading skills with high dropout rates. Students with below grade level reading ability are more likely to drop out of school.

Research shows poor reading skills affect society in that one-third of all juvenile offenders are reading below the fourth grade level and that many of our graduates today are not prepared to succeed at an introductory college writing level. The Council on Competitiveness, a non-profit organization whose goal is to increase United States economic competitiveness in the global world, determined that today's employers believe over half of current high school graduates are weak in literacy skills. Scoring among the lowest in the world, the U.S. must clearly focus on increasing literacy skills in order to prepare today's youth to compete in a global economy.

Advanced literacy in today's schools is defined as students being able to make sense of and effectively engage in reading, writing, listening, and speaking. For adolescents to become successful in the 21st century they will need advanced levels of literacy and to be able to read and

write more than at any other time in history. With growing concerns regarding the number of students not meeting high literacy standards, educators must look to build a student's comprehension, writing, and communication skills.

Effective teaching requires the implementation of various reading strategies such as scaffolding instruction, setting a purpose for the reading, making predictions, using think alouds, and incorporating graphic organizers. Language arts teachers need to inspire a love for reading and build what might be called "reading stamina" in our students. This can be accomplished through creating a high-interest classroom library, providing various opportunities for students to visit the media center, and devoting ample time to students interacting with peers to discuss and share what they are reading. Recognizing that students have varied reading abilities and attitudes towards reading, schools must provide creative strategies to help foster a love of reading, motivate students to read, and encourage students to engage in independent reading.

This researcher and teacher of middle school students believe that improving adolescents' reading skills is a challenge for many reasons. One of the biggest reasons is middle school students' overall attitude toward reading. Adolescents who struggle with literacy have naturally developed negative attitudes toward reading and writing. To combat this, it is important to support students, letting them know they can grow in their literacy by setting realistic goals and taking the time to practice. Research does show students who are unable to master literacy skills early on will begin to exhibit low self-esteem, a lack of motivation to learn, and decreased interest in school (Guthrie & Wigfield, 2000).

During the first faculty meeting of the year, the principal of the study school presented Maryland State Assessment (MSA) results from the 2011-2012 school year. The data showed

that overall, the girls scored higher on reading than the boys and that the achievement gap was significant. There were a total of 64 students scoring basic on the Reading MSA; 44 of those students were male. With 69% of the boys scoring basic, the focus of the 2012-2013 School Improvement Plan was increasing the academic achievement of boys through the implementation of boy friendly strategies. These results coincide with data from the U.S. Department of Education, Institute of Education Sciences [IES] (2011), which concluded that eighth grade girls on average scored more than ten points higher than boys.

Engaging students to read, especially male students, at the middle school level can be very challenging. This researcher has observed that over the last decade of teaching middle school, girls always seem more likely than boys to bring books to class to read when they finish assignments. It is usually the girls who engage in animated discussions about what they are reading and enjoy recommending a good book to their peers. While the male and female brains have basically the same makeup, they are wired very differently. Males tend to learn differently. Research-based, boy-friendly strategies that have been found to be very successful tend to provide opportunities for competition, choice, and collaboration. These strategies have been incorporated into a school-wide, sports-themed reading competition titled *Shoot for the Goal*. One of the goals of the *Shoot for the Goal* contest was to build reading stamina by encouraging and motivating students to read by allowing for choice and competition. This researcher was interested in knowing to what degree the school-wide *Shoot for the Goal* contest might increase the reading performance of sixth grade middle school males when compared to females.

Statement of the Problem

The purpose of this study was to measure the probable effects of the implementation of the *Shoot for the Goal* contest and its correlation to sixth grade middle school students' reading achievement. The second purpose of the study was to determine the probable effect of the *Shoot for the Goal* contest on the amount of growth in reading performance of sixth grade middle school males when compared to the performance of sixth grade middle school females on the AACPS Reading and Language Arts Benchmark exam.

Null Hypothesis

The purpose of this study was to investigate the following null hypothesis:

- 1) There will be no statistically significant difference in the scores of sixth grade-middle school students who participated in the *Shoot for the Goal* contest versus middle school students who did not participate in the *Shoot for the Goal* contest when the results are compared with their performance on the AACPS Fall and Winter Reading and Language Arts Benchmark assessments.
- 2) There will be no statistically significant difference in the scores of sixth grade male versus female-middle school students who participated in the *Shoot for the Goal* contest when the results are compared with their performance on the AACPS Fall and Winter Reading and Language Arts Benchmark assessments.

Operational Definitions

Reading Comprehension: For the purpose of this study, *reading comprehension* was defined as a student's score on the AACPS Reading and Language Arts Fall and Winter Benchmark (Anne Arundel County Public School, 2004) exams.

Growth: For the purpose of this study, *growth* was defined as the difference in students' scores on the sixth grade AACPS Fall Reading and Language Arts Benchmark exam compared to scores on the AACPS Winter Reading and Language Arts Benchmark exam.

CHAPTER II

REVIEW OF THE LITERATURE

The most important challenge of any educator is to ensure every student is able to read because future academic success depends on it. This literature review examines reading comprehension and the use of boy-friendly strategies in order to improve students' academic achievement. Section one defines and discusses the importance of reading comprehension. Section two presents characteristics of strong readers, while section three addresses the characteristics of struggling readers. Sections four and five examine gender differences in reading comprehension and gender differences in reading motivation, respectively. Section six explores brain-based reading strategies that motivate middle school boys to improve comprehension. Section seven focuses on research based strategies of competition and choice to increase males' reading achievement.

Definition of Reading Comprehension

Reading comprehension is the act of understanding what is read and is a purposeful, interactive process that happens before, during, and after an individual reads a particular piece of writing. Comprehension is a gradual, complex process of constructing meaning of text by interacting with it. In addition, comprehension involves student's prior knowledge, previous experiences, information from the text, and the position the reader takes in relation to the text (Pardo, 2004). Comprehension of text must go beyond just reading words; it involves the reader, who brings understanding and experience to the text that is then used to make meaning. To develop reading comprehension, readers use many different text comprehension strategies, such as monitoring themselves for understanding, answering and generating questions, and summarizing and being aware of and using a text's structure to aid comprehension. The reading

process is dependent on social interaction and also involves such emotional factors as motivation, ownership, purpose, and self-esteem. It is the integration of all these components that account for comprehension.

Being able to comprehend what you read is essential to life if you want to succeed in today's world. Reading comprehension is important because without it the reader is unable to gain information needed for further understanding. Reading comprehension is an essential component to functional literacy and without the ability to comprehend, students would not be able to grow academically and develop socially and emotionally.

Characteristics of Strong Readers

According to the RAND Reading Study Group (2002) commissioned by the United States Department of Education, proficient readers should be able to read various materials with ease and interest, read for varying purposes, read with comprehension even when the text is difficult to understand or intrinsically not interesting, acquire new knowledge and understand new information, apply textual information appropriately, and be able to reflect upon what is read.

Many strong readers apply before, during, and after reading strategies to help contribute to the overall understanding of what is being read. Skilled readers recognize reading is done with a purpose and involves the reader actively participating. They often make connections by using prior knowledge about their lives and the world around them to inform their understanding of the reading. In addition, skilled readers monitor their understanding and have strategies to improve their understanding when they have identified challenging text. Skilled readers know many vocabulary words and how to use the context, word parts, and roots to help them

understand new words. They also recognize most words automatically, read fluently, vary their reading rate, and “hear” the text as they read. Is it important to note, even skilled readers struggle with texts from time to time; however, they have the strategies to move independently when the text becomes difficult.

Characteristics of Struggling Readers

From 1997 to 2000, the National Reading Panel (National Institute of Child Health and Human Development, 2000) examined research regarding reading comprehension instruction and identified twelve components of comprehension instruction that would help readers construct meaning and ultimately, improve reading comprehension. These reading strategies help activate memory and semantic processing, promote reasoning and teach narrative structure. The twelve components of comprehension instruction include active listening, comprehension monitoring, prior knowledge, mental imagery, mnemonics, graphic organizers, vocabulary instruction, question answering generation, summarization and multiple-strategy instruction. Fortunately, the reading skills and strategies of strong readers can be learned by struggling readers to help them increase reading comprehension.

When comparing strong readers to struggling readers, there are clear differences between the two groups. Skilled and struggling readers approach reading activities differently. Struggling readers go into the reading activity lacking confidence, prior knowledge, and purpose. Current research finds that motivation, emotions, and psychopathology play a vital role in the achievement tendencies of students with comprehension difficulties (Sideridis, Mouzaki, Simos, & Protopapas, 2006). Many struggling readers have limited vocabulary and this hinders their ability to read phrases, making fluency difficult and causing many readers to lose attention. Another significant difference is that struggling readers fail to monitor their own comprehension

problems and don't implement reading strategies that could help them better understand the text. Lastly, the struggling readers do not reflect on what they read, and, because of this, often do not relate information to existing knowledge.

Gender Differences in Reading Comprehension

Research shows on average a significant gender gap in reading comprehension. The results of large-scale international reading assessments indicate girls exceed boys in their reading abilities (White, 2007). Not only do boys score below girls on reading assessments, according to White (2007), they also have a higher chance of receiving a failing score. The 2002 and 2003 National Assessment in Educational Progress (NAEP, as cited in White, 2007) showed that in eighth grade the average score for boys declined while girls' scores improved.

Gender Differences in Reading Motivation

Since students who are motivated spend more time reading, they have an easier time comprehending than those who do not spend as much time reading (Wang & Guthrie, 2004). Recently, many research studies (Anderson & Palmer, 2001; Pachtman & Wilson, 2006; Peralta-Nash & Dutch, 2000) have investigated students' reading motivation. Researchers have found that when they ask students what motivates them to read, the most influential factors are choice and collaboration with others (Edmunds & Bauserman, 2006; Pachtman & Wilson, 2006). Educators can increase students' motivation to read by providing many opportunities for them to read. Edmunds and Bauserman (2006) studied 831 students from Pre-K to fifth grade and found students enjoy sharing books with others and rated both formal and informal discussions with peers, teachers, and parents to be highly motivating.

Brain Research on Middle-School Males

Engaging students to read, especially male students, at the middle school level is challenging. Male and female brains are hardwired very differently for learning. In order to determine what strategies motivate boys to read, it is important to look at the male brain. The reticular activating system (RAS) is the part of the brain that regulates what we pay attention to. The RAS is like a Venetian blind, opening at varying degrees and allowing a certain amount of information in based on what is important to that particular brain (Jensen & Nickelsen, 2008). Increased levels of dopamine, movement and blood flow, energy from food, and stress levels that keep students in the flow of learning, all contribute to the opening of the RAS (Jensen & Nickelsen, 2008). Educators can facilitate opening the reticular activating system by providing choice, getting the students to buy in to a concept, increasing their level of engagement, modeling enthusiasm about the concept and relating the concept to their interests (Jensen & Nickelsen, 2008).

Motivational Strategy: Competition

Research shows that competition is a highly effective strategy to motivate male students. In the current study, the objective for the *Shoot for the Goal* contest is to increase the study school's male students' reading comprehension through motivation and competition. In *Teaching to the Minds of Boys*, King and Gurian (2006) suggest there are a number of neurologically and chemically-based reasons why boys are more naturally aggressive and competitive than girls. Because the dominant hormone in males is testosterone, which enhances sex drive and aggression, boys tend to be more impulsive, preferring action and competition (Jensen & Nickelsen, 2008). According to Cash (2011), it is important to provide boys with opportunities to participate in competition. Research shows that stress levels of competition enrich learning and tend to motivate boys (Jensen & Nickelsen, 2008). A boy-friendly strategy

to enhance learning is to provide physical activities, games, and competitions. This develops resiliency and gives boys opportunities to bond with each other through literacy (Cash, 2011).

“Competition can also encourage cooperation among team members” (Cook, 1997, p. 29).

Riley and Karnes (2012) reported that the use of competition provides extrinsic and intrinsic benefits for students suggesting, “Competitions can serve as a motivational sparkplug for students” (p.1). Cook (2007) explains that students in the upper grades find a more competitive format appealing and book competitions provide students who excel in reading a chance to gain the same type of recognition given to those who excel in athletics. Cook states, “It turns a solitary activity into a cooperative one” (p.29). Cook suggests that competitions often create the interest and enthusiasm to carry students beyond their identified reading levels. Reading competitions can contribute to widening students’ reading choices and promote enjoyment of demonstrating their knowledge of the books read.

Male students benefit from reading recognition, cooperative learning, interest and enthusiasm, increased reading levels, and student choice. Cook (1997) demonstrates these benefits with a well-known, successful reading competition entitled *Battle of the Books*. This competition was originally implemented in Chicago schools and was based on the old College Bowl game. According to Cook, the effectiveness of the competition became so popular that schools competed against each other in play-off battles.

Another study incorporating boy-friendly teaching strategies, including competition, was conducted at Douglass Elementary in Colorado. As a result of the competition, male students demonstrated a 24.4% increase in reading and writing scores (King & Gurian, 2006). After extensive research, it is apparent that competition, choice, and collaboration are successful boy-

friendly instructional strategies to motivate male students that can be instrumental in increasing academic achievement.

CHAPTER III

METHODS

This study was conducted to examine the probable effect of the *Shoot for the Goal* contest on the reading performance of sixth grade middle school students measured by the sixth grade Anne Arundel County Public Schools (AACPS) Winter Reading and Language Arts Benchmark exam. The second purpose of the study was to determine the probable effect of the contest on the amount of growth in reading performance of sixth grade middle school males when compared to the performance of sixth grade middle school females on the AACPS Reading and Language Arts Benchmark exam.

Design

The researcher employed a quasi-experimental research design in which the reading comprehension scores of a treatment group and control group were compared before and after the implementation of the *Shoot for the Goal* contest. The treatment group consisted of students who participated in the *Shoot for the Goal* contest, while the control group consisted of students who did not participate. The independent variable for this study was the *Shoot for the Goal* contest, and the dependent variable was the difference in the students' reading comprehension performance on the AACPS Winter Reading and Language Arts Benchmark exam. The study took place over a ten-week time period.

Subjects

The target population consisted of 287 students who attended a suburban, middle-class school that was identified as a 2001 Maryland Blue-Ribbon School. The school community was named by *Money* magazine as one of the "100 Best Places to Live" in the United States in both 2007 and 2011 for its great location, many amenities, and outstanding schools. In 2012, the

student mobility rate was 8.7% (i.e. 59 entrants and 40 withdrawals school wide), which was half of the countywide student mobility rate of 15.8%. The school community is considered to be affluent with an estimated median household income in 2007-2011 of \$103,814 compared with the estimated median household income in Maryland of \$72,419.

In 2012, a total of 1145 students were enrolled at the study school with 46% (526) female students and 54% (618) male students. The school's student to teacher ratio of 18:1 is higher than the MD state average of 13:1. Seventy percent of the students are Caucasian, with a minority enrollment consisting of 30%. Convenience sampling was used in the study since the sixth grade middle school students were selected based strictly on availability. For this study, 287 students were randomly selected, those who participated in the contest and those who did not. To get the true effect of the reading contest on student achievement, it was important to have two groups of nearly equal size (i.e. 144 students in each) for the treatment group and the control group. The sixth grade middle school students who both participated and didn't participate in the contest were evenly divided into 72 male students and 72 females students. In addition, the sample of students that participated in the reading contest had the following scores based on the Maryland State Assessment (Maryland Department of Education [MSDE], 2002): 13 basic, 26 proficient, 105 advanced. The sample of students that did not participate in the reading contest had the following scores based on the Maryland State Assessment: 9 basic, 26 proficient and 109 advanced.

Instrumentation

The instrument used for this quasi-experimental study was the AACPS Reading and Language Arts Benchmarks for Marking Period II in January and Marking Period III in March. The questions on the exam were originally purchased from an item bank of retired items owned

by the McGraw Hill Publishing Company (2002). The sixth grade benchmark exam has a total of fifteen questions measuring students' progress in reading comprehension. The benchmark exam identifies those students who are struggling, performance on individual items, and specific content standards. Students are asked to read a selected text and then answer nine selected response questions and one brief constructed response question. The brief constructed response questions are short essay questions which check students' comprehension of selected text. In addition, students are asked to respond to four vocabulary items that measure students' ability to determine the meaning of a word using context-clues, multiple meaning words, and suffixes. Students must score a 60% or above in order to score proficient or advanced on both 2013 AACPS Reading and Language Arts Fall and Winter Benchmark exams.

Table 1

Benchmark Cut Scores Reading/Language Arts 2012-2013

Grade	Benchmark – Fall		Benchmark - Winter	
	Proficient	Advanced	Proficient	Advanced
6	60	80	60	80
7	60	80	60	80
8	60	80	60	80

From a technical standpoint, the benchmark exam has respectable point-bi-serial coefficients, indicating that students with higher scores on overall tests are also getting the item right on the benchmark and that students with low scores on overall test are getting the items wrong on the benchmark. Although no research is available determining the reliability or validity of the assessment, there is a high correlation between students' performance on the benchmark with their performance on the Maryland State Assessment. Research was conducted by Anne Arundel County Public Schools to determine the correlation of predicting student performance on the benchmark to the Maryland State Assessment (MSDE, 2002). Anne Arundel County

Public Schools (2004) concluded there is an 89.6% accuracy rate in predicting the pass/fail rate of the students for the selected response questions.

Procedure

The ten-week *Shoot for the Goal* contest began on January 7, 2013 and ended on March 15, 2013. To get students motivated and excited, a pep rally was held where students enjoyed an interactive PowerPoint presentation on the value of reading and literacy. For example, students played a game called “Who Said It?” where quotes were read aloud of famous athletes who love to read and then the students had to decide who said the quote. Sixth grade students were given time and encouraged to choose a book that interested them. As students finished reading their book, they were directed to fill out a thinking map and a recommendation form. Every book over 250 pages counted as two books, and any over 500 pages counted as three books. Students received stickers for every book they read to be placed on posters next to their names as a way to monitor peers’ progress. Various incentives were given for students who participated in the contest such as weekly drawings for free ice cream, a free pizza party for the class with the highest percentage of participation, and gift cards for individual top readers.

A nonequivalent control group design was used as both the treatment group and control group was pretested, administered a treatment, and then posttested. Specifically, the AACPS Fall Reading and Language Arts Benchmark exam (pretest) was administered to both groups of sixth grade middle school students in January 2013. The AACPS Winter Reading and Language Arts Benchmark exam (posttest) was administered to both groups of sixth grade middle school students in March 2013. A score was calculated that showed the difference between each student's January and March benchmark results. An “average difference score” was then

calculated for the treatment group (students who participated in the contest) and the control group (students who did not participate in the contest).

CHAPTER IV

RESULTS

The primary focus of this study was twofold: 1) to measure the probable effects of the implementation of the *Shoot for the Goal* contest and its impact upon sixth grade middle school students' reading achievement and 2) to determine whether there was a significant difference in the reading comprehension achievement among sixth grade males versus females who participated in the *Shoot for the Goal* contest compared to those who did not participate. For purposes of this study, student achievement was based upon a comparison of students' Anne Arundel County Public School (AACPS) Fall Reading and Language Arts Benchmark assessment compared to their scores on the AACPS Winter Reading and Language Arts Benchmark assessment. This study used a quasi-experimental pretest/posttest research design with the students who participated in the reading contest serving as the treatment group and the students who did not participate in the reading contest serving as the control group. The independent variable in this study was the implementation of a ten-week reading contest. The dependent variable in this study was the reading achievement scores of the sixth grade male middle school participants on the AACPS Fall Reading and Language Benchmark Marking Period exam. Table 2 below reports on the range of participation in the *Shoot for the Goal* contest. For the purpose of this study, students who read one or more books during the contest were identified as participants, while those who were identified as not having read one book during this ten-week period were deemed nonparticipants. Given this definition, 143 students or 49.8% of the 287 students enrolled in grade participated in the program, while 144 students or 50.2% did not participate. It is important to note in Table 2 below that student participation in the *Shoot for the Goal* contest was divided into five categories of participation: those who read

between one and two books, those who read three or four books, those who read between five and seven books, those who read eight or nine books, and those students who read ten or more books.

Table 2

Student Participation in the Shoot for the Goal Contest

Categories of Student Participation	No Books Read	At Least One Book	One to Two Books	Three to Four Books	Five to Seven Books	Eight to Nine Books	Ten or More Books
Number of Students	144	143	79	28	16	4	16
Percent of Students	50.2%	49.8%	55.2	19.6%	11.2%	2.8%	11.2%

As indicated above, these results reported in Table 2 suggest that while 49.8% of the 6th graders participated in the *Shoot for the Goal* contest, 50.2% did not participate. Among those students who did participate, a further analysis of the data was conducted using the above-mentioned reading categories. Disaggregated by reading category, these results also suggests that of the 49.8% who did participate, the largest category of participants (i.e. 55.2%) read between one and two books during the contest, while the second largest category of students (i.e. 19.6%) read between three and four books. These two categories of students represented 74.8% of the sixth graders who participated in this study.

Test of Null Hypothesis #1

As previously indicated, the primary purpose for this study was to determine the impact of the *Shoot for the Goal* contest on students' performance on the AACPS Language Arts Benchmark exams. Thus the first null hypothesis to be investigated was as follows: There will be no statistically significant difference in the second marking period language arts benchmark scores of middle school students who participated in the *Shoot for the Goal* contest when their results are compared with their performance on the Anne Arundel County Reading and Language Arts Winter Benchmark exam.

The data reported in Table 3 below reports on the academic performance of students who participated in the *Shoot for the Goal* contest. These are disaggregated by reading category in order to determine whether participation in the *Shoot for the Goal* contest had an impact on students' performance on each of several countywide assessments, most notably the AACPS Fall Reading Language Arts Benchmark versus Winter Benchmark assessments.

Table 3

Average Student Performance on Countywide Assessments Among Students Who Participated Versus Those Who Did Not Participate in the Shoot for the Goal Contest

Categories of Student Participation	No Books Read	At Least One Book	One to Two Books	Three to Four Books	Five to Seven Books	Eight to Nine Books	Ten or More Books
Fall Benchmark (Pretest)	78.0	75.5	73.0	76.4	73.5	86.0	86.4
Winter Benchmark (Posttest)	82.0	80.5	78.0	82.9	79.7	91.3	87.2
Pretest vs. Posttest Difference	4.0	5.0	5.0	6.5	6.2	5.3	0.8
MSA (March, 2012)	442.3	437.2	432.0	438.1	433.9	447.5	460.3
Gates-McGinire (Stanines)	6.1	5.7	5.4	5.6	5.8	7.3	6.4

Sixth grade enrollment = 287

Any differences in student performance on these benchmark assessments have been highlighted. These results suggest that even among those students who did not participate in the contest, there was a four percentage point increase in their Fall Benchmark versus Winter Benchmark exams, and except for those students who read ten or more books, there was an increase in students' language arts pretest versus posttest performance within each of the four remaining categories of student reading participation. Of particular note is the performance of students who read between three and four books during the contest. There was a 6.5 percentage point increase in their performance, the highest increase within any of the five categories. On the other hand, those students who read ten or more books had the smallest increase (i.e. 0.8) among the five categories. In order to determine whether the differences in the above-mentioned

increases among students who participated versus those who did not participate in the *Shoot for the Goal* contest were statistically significant, a *t*-test for independent groups procedure was used. These results ($t = .597$, $df = 285$, $p = .551$) suggest that the difference in the amount of increase in performance among students who participated (i.e. 5 percentage points) versus those who did not participate (i.e. 4 percentage points) was not statistically significant. Thus, the null hypothesis that there would be no statistically significant differences in the AACPS Language Arts Benchmark pretest versus posttest scores of students who participated in the *Shoot for the Goal* contest when compared to those who did not participate was retained.

Test of Hypothesis #2

Another major purpose of this study was to determine whether the *Shoot for the Goal* contest would have a differential impact upon male versus female students' performance on the countywide benchmarks. Tested, too, was the second null hypothesis: Among both males and females who participated in the *Shoot for the Goal* contest, there will be no difference in the amount of growth in the performance of sixth grade males' on the AACPS Fall Reading and Language Arts Benchmark exam versus AACPS Winter Language Arts Benchmark exam when compared to the amount of growth in the performance of females on the AACPS Fall Reading and Language Arts Benchmark exam versus AACPS Winter Reading and Language Arts Benchmark exam.

An analysis of students' participation in the contest, disaggregated by gender, is reported in Table 4 below. These results suggest that exactly half of the participants were males and half were females. It also suggests that 85.9% of the male participants and 63.8% of the female participants read between one and four books during the *Shoot for the Goal* contest. Within the two largest categories of books read (i.e. students who read eight or nine books, or those who

read ten or more books) 20.9% of the students were female compared to 7% of the male participants.

Table 4

Student Participation in the Shoot for the Goal Contest Disaggregated by Gender

Gender	No Books Read		At Least One Book		One to Two Books		Three to Four Books		Five to Seven Books		Eight to Nine Books		Ten or More Books	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
Number of Students	72	72	71	72	47	32	14	14	5	11	1	3	4	12
Percent of Students	50.0	50.0	49.7	50.3	66.2	44.4	19.7	19.4	7.0	15.3	1.4	4.2	5.6	16.7

Table 5 below reports on the results from various countywide student achievement measures, disaggregated by gender within each reading category. A comparison of the pretest versus posttest performance of males versus females on the AACPS Reading and Language Arts Benchmark assessments suggests once again that there were increases among both males and females who did not participate in the *Shoot for the Goal* contest as well as those who did participate. Also, except for students who read ten or more books, there was improvement in all other reading categories. Finally, the results reported in Table 5 below suggest that the greatest increase (i.e. 7.5 percentage points) occurred among students who read eight or nine books. With the exception of one category (i.e. students who read between five and seven books), increases in student performance on the AACPS Language Arts and Reading Benchmarks were also greater among male students compared to females.

Table 5

Average Student Performance on Countywide Assessments Disaggregated by Gender

# of Books Read	No Books Read		At Least One Book Read		One to Two Books		Three to Four Books		Five to Seven Books		Eight to Nine Books		Ten or More Books	
Gender	M	F	M	F	M	F	M	F	M	F	M	F	M	F
Fall Benchmark (Pretest)	73.8	74.5	70.3	80.8	68.2	79.9	73.7	79.0	71.3	74.5	87.5	85.4	85.6	89.6
Winter Benchmark (Posttest)	78.8	81.0	77.7	83.3	75.6	81.4	82.5	83.2	77.0	80.9	95.0	90.0	85.6	88.8
Pretest versus Posttest Difference	5.0	6.5	7.5	2.5	7.4	1.5	8.8	4.2	5.7	6.5	7.5	4.6	0	-0.86
MSA (March, 2012)	433.3	438.8	433.6	440.4	431.7	432.4	437.2	439.1	428.8	436.2	434.0	452.0	455.8	464.6
Gates McGinitie	5.5	6.6	5.3	6.0	5.4	5.5	5.5	8.0	5.0	6.2	7.0	7.5	3.7	7.2

In order to determine whether the second null hypothesis should be retained, or rejected,

a *t*-test for independent groups procedure was used. The results ($t = 2.309$, $df = 141$, $p = .022$)

suggest that the overall mean difference in performance between males (7.5) and females (2.5)

on the AACPS Fall Reading and Language Arts versus Winter Benchmark exams was

statistically significant. Thus the null hypothesis was rejected.

CHAPTER V

DISCUSSION

One of the purposes of this study was to determine whether the sixth grade middle school students who participated in the *Shoot for the Goal* contest (i.e. treatment group) would experience a statistically significant improvement in their reading comprehension performance, as measured by their scores on the AACPS Winter and Fall Reading and Language Arts Benchmark exams. In addition, this study also examined the performance of sixth grade middle school males versus females who participated in the *Shoot for the Goal* contest in order to determine whether there was a statistically significant difference between the two groups in the amount of growth in their Fall versus Winter AACPS Reading and Language Benchmark exams. The following null hypotheses were investigated:

- 1) There will be no statistically significant difference in the scores of sixth grade-middle school students who participated in the *Shoot for the Goal* contest versus middle school students who did not participate in the *Shoot for the Goal* contest when the results are compared with their performance on the AACPS Fall and Winter Reading and Language Arts Benchmark assessments.
- 2) There will be no statistically significant difference in the scores of sixth grade male versus female-middle school students who participated in the *Shoot for the Goal* contest when the results are compared with their performance on the AACPS Fall and Winter Reading and Language Arts Benchmark assessments.

The results reported in Chapter IV indicate that there was very little difference in the reading comprehension performance of the treatment group compared to the control group between the Fall and Winter administration of the AACPS Reading and Language Arts

Benchmarks. These results also suggest that, except for those students who read ten or more books, there was an increase in students' language arts pretest versus posttest performance within each of the other four categories of student reading participation. Of particular note is the performance of students who read three or four books during the contest. There was a 6.5 percentage point increase in their performance, the highest increase within any of the five categories. On the other hand, as expected due to the effects of regression, those students who read the most (i.e. ten or more books) had the smallest increase (i.e. 0.8) among the five categories. Overall, these results do suggest that the null hypothesis which was investigated in this study should be retained. While there were differences in the AACPS Reading and Language Arts Benchmark Fall versus Winter scores of participants versus non-participants in the *Shoot for the Goal* contest, the differences were non-significant.

In order to investigate the second hypothesis in this study, an analysis was also conducted to determine whether or not the *Shoot for the Goal* contest had a differential effect when the number of books read was disaggregated by gender. The overall performance of males versus females within both the treatment and control groups indicated that there were non-significant increases for both males and females who did not participate in the *Shoot for the Goal* contest as well as for those who did participate. In addition, as was the case in the previous analysis, except for students who read ten or more books, there was improvement in all other reading categories. Most importantly, however, with the exception of students who read between five and seven books, increases in student performance on the AACPS Winter Language Arts and Reading Benchmarks were also significantly greater among male students compared to females. Finally, the results suggest that the greatest increase of 7.5% occurred among students who read eight or nine books. Thus these results suggests that the second null hypothesis, that there would

be no statistically significant difference in the performance of male versus females students' AACPS Reading and Language Arts Fall Benchmark versus Winter Benchmark scores, was rejected.

Implication of Results

Though the first hypothesis was retained, this study did indicate a 6.5 percentage point increase in those students who read five or six books, the highest increase within any of the five categories of reading participation. The second null hypothesis was rejected, thus indicating that, with the exception of one category, increases in student performance on the AACPS Winter Language Arts and Reading Benchmarks were greater among male students compared to females. Implementing the *Shoot for the Goal* contest provided opportunities for competition and choice, encouraging and motivating sixth graders to read with boy-friendly strategies that allowed for positive results in the overall reading performance of male sixth graders.

Threats to Validity

There were several factors that pose a threat to the internal validity of this study. Maturation is an internal threat to validity that may have affected the dependent variable. This study took place over a ten-week time period using a pretest/posttest design where the selection maturation interaction might have varied between the treatment and control groups. With participants maturing at different rates, the results could have been affected by the maturational changes within participants due merely to the passage of time. Given that the students were sixth graders, developmental changes that tend to occur in adolescence may have affected their general reading interest regardless of what reading intervention was implemented.

One limitation of this study that may be related to another threat to its internal validity is the instrumentation used. Students' gains were only analyzed using the AACPS Reading and

Language Arts Benchmark exams. Educators use more than one assessment to measure student growth. Secondly, the AACPS Fall and Winter Reading and Language Arts Benchmark exams used for the pretest and posttest were not completely equivalent in the types of skills measured by two different tests. Although similar, there was some variation in the language arts skills measured on the pretest and posttest. This lack of complete parallelism in what was measured did pose a significant threat to the internal validity of this quasi-experimental study. In addition, the AACPS Fall and Winter Reading and Language Arts Benchmark assessment also included a brief constructed response question, which is a short essay question that checks students' comprehension of selected text. However, students' written responses to these BCR questions could have potentially reflected some degree of scoring bias by individual teachers and low inter-rater reliability given that various teachers were rating students' responses. Using an identical test as both the pretest and posttest measure with only selected response questions might have eliminated this instrumentation threat that posed a problem of inter-rater reliability that may have resulted in an invalid assessment of students' performance.

In addition to considering the internal threats to validity, there were also various external threats to validity in this study. Reactive arrangements are an external threat to the generalizability of research results that involve programs like *Shoot for the Goal* contest. This program was partly promoted through participants' language arts teachers, and thus an experimental environment was created that could have differed from teacher to teacher. For example, teachers who promoted the contest by, encouraging reading throughout their classes were more likely to have a higher percentage of students participate, and read more books. On the other hand, the reactive effect known as compensatory rivalry might have influenced the results of the study as some students might have felt threatened or challenged by having to

participate in the competition. As previously indicated by Jensen and Nickelsen (2008), brain research shows that males tend to be motivated by competition and contests, while females are more likely to shut down, thus decreasing their performance from what would normally be expected.

Lastly, the reactive arrangement called the novelty effect poses an external threat to validity as some participants might have increased participation and motivation in the *Shoot for the Goal* contest simply because it is something new and different. To nullify such an external threat this researcher would recommend conducting the reading contest for a longer period of time to allow the novelty to wear off.

Comparison to Other Studies

Many studies have been conducted which examine the effect of reading programs to encourage and motivate reading with middle school students. The *Shoot for the Goal* contest motivated students by providing them interesting text and allowing them choice so that they could select topics that were more likely to engage them in the reading process. Ehrlich, Kurtz-Costes, and Loridant (1993) conducted a study that compared cognitive and motivational factors as predictors of reading comprehension abilities of strong and struggling readers. The study examined 220 seventh graders with the top 30% identified as good readers and the bottom 30% identified as poor readers. To measure motivational factors, subjects were given four categories in which to rank themselves as compared to their classmates to measure perceived competence, and the Intellectual Achievement Responsibility scale (cf. Kurtz & Weinert, 1989) to measure attributional beliefs. Results of this study found good readers viewed their academic skills in a more positive way and felt more responsible for their successes, and it is this perceived competence that predicted the comprehension abilities of good readers.

Recent research indicates that gender influences how students learn and how the brain develops. In order to effectively teach educators must be aware of gender differences and have knowledge of various gender-based teaching strategies. With females consistently outperforming males in reading comprehension, Logan and Johnson (2010) investigated gender differences in reading. Their review suggests student's attitudes toward reading, overall motivation, and reading frequency play a significant role in reading performance. Studies have determined that girls read more often than boys (cf. Coles & Hall, 2003) therefore, gender differences could contribute to the difference in reading performance. Logan and Johnson (2010) reviewed various studies suggesting that the importance of attentiveness while learning can affect reading ability. Additional research shows boys have lower attention spans than girls (Logan, Medford & Hughes, unpublished) and are less task oriented. Logan and Johnson concluded gender that difference in reading performance could be related to boys having poorer attention during reading lessons than girls.

Kwok (2009) conducted an action research project focusing on building reading stamina and motivation for boys. The study took place over a six month time period with a treatment group that consisted of two third grade boys who attended a public school in New York. Kwok organized his study into three cycles; students were taught specific reading strategies and given a reading log to monitor progress on a daily basis, a series of mini lessons focusing on stories that were "authentic" to the students was offered, and students were provided with opportunities to choose just the right books to suit their personal preferences. From observations and data collected, Kwok determined that, through the increasing of independent reading time, reading stamina and motivation increased resulting in improved reading achievement of the two third grade boys.

Implications for Further Study

The conclusions of many of the above-mentioned studies support increased reading which builds stamina and comprehension skills that contribute to the overall improvement of reading performance of middle school students. Research suggests that middle school males react positively to competitions as a motivational tool that creates interest and enthusiasm to increase reading.

Based on the results of this study, and this researcher's observation of the sixth grade students who participated in the *Shoot for the Goal* contest, one suggestion might be replicating this study over a longer period of time. Ten weeks doesn't necessary allow for a statistically significant improvement. With the extended time, students would be given additional opportunities to participate, as well as to build reading stamina which would help those struggling students become more successful readers.

This study was limited due to the fact that the 287 sixth grade students involved come from a rather homogenous community. Another suggestion would be to repeat the study with different grade levels and students with students who represent a broader range of achievement. In many ways, the *Shoot for the Goal* contest lends itself to the students who love to read rather than those students who struggle with comprehension and dislike reading. Conducting this study with a target population that included only basic students might be beneficial in determining the impact the contest has on the reading comprehension performance of the study schools' struggling readers.

Conclusion

The study was an attempt to determine the effectiveness of implementing the *Shoot for the Goal* contest on the reading performance of sixth grade middle school students. Of particular

note, the students who read three or four books had a 6.5 percentage point increase, the highest increase within any of the five categories. The study did show patterns of consistent improvement in students' scores; however, results showed no statistical difference. In addition, the study attempted to determine whether the contest would have a differential impact upon male versus female students' on Anne Arundel County Public Schools (AACPS) Reading and Language Arts Fall and Winter Benchmarks. The results disaggregated by gender determined that, with the exception of those students who read between seven and five books, increases in performance on the county AACPS Reading and Language Arts Fall and Winter Benchmarks were greater among males compared to females. The implementation of the *Shoot for the Goal* contest had an impact on reading performance resulting in an overall mean difference of 7.5 for males and 2.5 for females, thus making this component of the study statistically significant.

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