

THE IMPACT OF THE ACCELERATED READER PROGRAM ON
ELEMENTARY STUDENTS' READING TAKS SCORES IN AN URBAN
PREDOMINANTLY HISPANIC TITLE I SCHOOL

A Dissertation Presented to the
Faculty of the College of Education
University of Houston

In Partial Fulfillment
of the Requirements for the Degree

Doctor of Education

by

Hasiyet Keyim

May, 2011

THE IMPACT OF THE ACCELERATED READER PROGRAM ON
ELEMENTARY STUDENTS' READING TAKS SCORES IN AN URBAN
PREDOMINANTLY HISPANIC TITLE I SCHOOL

A Dissertation for the Degree
Doctor of Education

by

Hasiyet Keyim

Approved by Dissertation Committee:

Dr. Lilia Ruban, Chairperson

Dr. Weihua Fan, Committee Member

Dr. Laveria Hutchison, Committee Member

Dr. Allen Warner, Committee Member

Dr. Robert K. Wimpelberg,

Dean College of Education

May, 2011

ACKNOWLEDGMENT

The process of dissertation writing is highly challenging and a lot of people have contributed to its completion. I owe my gratitude to all those who have made this dissertation possible.

My heartfelt gratitude goes out to my advisor, Dr. Lilia Ruban, for her excellent guidance, caring, patience, and providing me with an excellent support for doing research. She is responsible for the successful completion of my dissertation. Her untiring effort, commitment, and encouragement helped me greatly in the understanding and writing of the dissertation.

I would never have been able to finish my dissertation without the guidance of my committee members. I would like to thank Dr. Hutchison, who let me experience the research of reading in the field and practical issues beyond the textbooks, patiently corrected my writing and supported my research. I would like thank Dr. Warner for guiding my research and helping me gaining a deeper understanding of education for the past several years. Special thanks go to Dr. Fan, who was willing to participate in my dissertation committee and provide me with valuable support.

I have to give a special mention for the support given by my principal Grace Devost. I am very grateful for the opportunity to work with her for the past ten plus years. She has been always there whenever I need help. Words are simply insufficient to express my gratitude towards her.

I would like to thank love of my life, my son, Mardon Wushouer, for his unwavering support throughout the years. He has been source of my strength

and motivation to make this seemingly unattainable dream come true. His love for mommy and understanding helped me overcome setbacks and completed this study. I would also like to thank my wonderful son Alim and daughter Pamila for loving, understanding, and supporting me throughout my journey.

Last but not least, I would like to give my special thanks to my husband, Hamit Sidik, whose love becomes the sources of energy at the time of frustration. His untiring encouragement helped me reach the finishing line of this fun yet very challenging journey.

I would also like to thank my family member, my mother, Sadat Rehman, for her love and sacrifice; my sister Saliman, Janet, and especially Zinat, who helps me whenever I need her.

THE IMPACT OF THE ACCELERATED READER PROGRAM ON
ELEMENTARY STUDENTS' READING TAKS SCORES IN AN URBAN
PREDOMINANTLY HISPANIC TITLE I SCHOOL

An Abstract
of A Dissertation Presented to the
Faculty of the College of Education
University of Houston

In Partial Fulfillment
of the Requirements for the Degree

Doctor of Education

by

Hasiyet Keyim

May, 2011

Keyim, Hasiyet. "The Impact of the Accelerated Reader Program on Elementary Students' Reading TAKS Scores in an Urban Predominantly Hispanic Title I School." Unpublished Doctor of Education Dissertation, University of Houston, May, 2011.

Abstract

Many students continue to struggle with acquiring the necessary skills to become successful readers. The most commonly used software for teaching reading is the Accelerated Reader (AR) program. The purpose of this study was to investigate the impact of the Accelerated Reader program on elementary students' reading TAKS scores in an urban predominantly Hispanic Title I school. Namely, the study investigated the relationship among the amount of time spent reading, amount of reading, average AR test scores, and students' reaching AR goal in the Accelerated Reader Program, and students' reading achievement, as measured by the state high stakes standardized test, Texas Assessment of Knowledge and Skills (TAKS) test. Archival data contained AR reading records and TAKS reading scores for 300 elementary students in an urban predominantly Hispanic Title I school during 2007-2008 and 2008-2009 school years was analyzed. A correlation design was utilized for this ex-post facto study to determine if a correlation exists between the reading achievement of the students, as measured by the Texas Assessment of Knowledge and Skill reading tests and the implementation of Accelerated Reader Program as measured by Engaged time in reading, AR points, AR average scores, and AR goal. The results showed there are low to moderate correlation between the Accelerated Reader program's major components AR Engaged Time, AR points, AR average correct, AR goal, and The TAKS reading test. Surprisingly, we found very

provocative results; 100% of the students who did not pass TAKS-Reading also did not reach their AR Goal; 100% of the students who reach their AR goals also passed TAKS reading tests. In addition, the researchers found limited empirical support for “Matthew effect” in reading, as evidenced by low to moderate correlations and small amount of variance explained. Importantly, there was significant variation in program implementation by teacher and grade level. Practical implications for elementary school reading instruction are discussed.

TABLE OF CONTENTS

Chapter Page
I. INTRODUCTION.....	1
Introduction.....	1
Statement of the Problem.....	4
Purpose of the Study and Research Questions.....	5
Theoretical Framework.....	6
Need for the Study and Significance of the Study	9
Definition of Terms	11
Overview of the Study.....	17
II. REVIEW OF THE LITERATURE.....	16
Reality of Students’ Reading Achievement in the USA.....	16
Achievement Gap.....	18
No Child Left Behind Act	20
Accelerated Reader Program.....	21
Accelerated Reader Program Engaged Time.....	22
Accelerated Reader Program AR Points.....	23
Accelerated Reader Program Average Percentage Correct Scores.....	24
Accelerated Reader Program Goal.....	25
Research Findings about the Accelerated Reader Program.....	26
Research Findings about the Accelerated Reader Program in Title I Schools.....	30
Summary.....	34
III. METHODOLOGY.....	36
Restatement of the Research Questions.....	37

Research Design.....	37
Accelerated Reader Program in ABC Elementary School.....	38
Participants.....	39
Instrumentation.....	40
Data Collection.....	41
Data Analysis.....	42
Limitations.....	43
IV. DATA COLLECTION AND ANALYSIS.....	45
Demographic Analysis.....	45
Descriptive Analysis.....	47
Correlational Analyses.....	51
Research Question 1.....	53
Research Question 2.....	53
Research Question 3.....	55
Research Question 4.....	55
V. RESULTS, CONCLUSIONS, AND RECOMMENDATIONS.....	60
Summary of Findings.....	62
Research Question 1.....	62
Research Question 2.....	64
Research Question 3.....	64
Research Question 4.....	66
Educational Implications.....	69
Future Studies.....	71
VI. REFERENCES.....	72

VII. Appendix

Appendix A: Human Subjects Approval Letter.....86
Appendix A: Approval Letter From School.....87

CHAPTER ONE

INTRODUCTION

Reading is important because it is a part of our everyday life. It is generally accepted that reading skills are an essential key to learning, and it spans all academic subjects. Reading is recognized as a skill basic for virtually all learning (Ahitaker, Gambrell, & Morrow, 2004). It is the foundation from which all subjects are built. A child must read with ease and understanding to take advantage of the learning opportunities in fourth grade and beyond (Armbruster, Lehr, & Osborn, 2003).

Learning to read is like learning to walk or talk. It is a process that cannot be rushed. Learning to read is a “milestone for children living in a literate society” (Whitehurst & Lonigan, 2003, p. 11). However, reading is much more complicated than recognizing letters and translating them into spoken words. A student must understand the information. Therefore, the main goal of instruction should be to help children learn to read “effortlessly, so they can ignore the reading process, and focus on the content” (Ashby & Rayner, 2006, p. 52). Teaching a child to read in a classroom setting requires patience, skill, knowledge, effective approaches, and strong instruction.

With the adoption of the No Child Left Behind Act (NCLB) of 2001, More than ever, reading comprehension is now increasingly important. There has been a push to improve the reading abilities of all students. The reading goal set forth within the NCLB act is for every student by the end of the third grade to be reading at or above grade level. By 2014, the goal of No Child Left

Behind is for every school in the country to have its children proficient in reading and math on the state exams (Texas Educational Agency (TEA), 2004).

NCLB requires states to disaggregate student achievement data by racial subgroups of students, including black and Hispanic students, so that performance gains for all children can be tracked. The law also contains a host of accountability measures that penalize schools that are unable to show achievement gains by all subgroups of students. The hope is that these strict accountability measures will spur across-the-board gains in achievement.

Most states have jumped on the standardized testing bandwagon, and the questions on these tests rely on students having reading comprehension skills to respond to the questions being asked (TEA, 2004). Principals and teachers are held accountable for the reading abilities of every student in the school. Annual report cards are presented to parents and public schools that do not make the grade must provide supplemental programs to students. Schools have five years to make progress or they must change completely how their schools are run. In order to meet the standards set by the NCLB Act, they must find a quick and effective solution to the problem.

With the advent of new laws encouraging reading achievement, and as a result of state tests that require students to comprehend their reading, new reading programs and strategies were created, implemented, and adopted in America's schools in an effort to minimize the number of struggling readers found in classrooms and as a means for improving the quality of education provided. More than ever, there is an important need to improve reading

comprehension of all students. With the need to improve reading education in the schools, computerized reading management programs were born. The most acclaimed is the Accelerated Reader Program (AR). Developed by Judith and Terrance Paul in 1986, the Accelerated Reader Program is a computer based, reading management and motivational system designed to complement existing classroom literacy programs for grades for K-12. Accelerated Reader assesses reading comprehension through a series of multiple choice questions. With this program, students are given a placement test (STAR test) to determine their reading level, and are then allowed to check out books in their school library that match their reading level. After reading the book on his or her own level, students take quizzes on the book. Students may earn points and ultimately prizes provided by the school or another source for an accumulation of points (Johnson & Howard, 2003).

Accelerated Reader Program becomes one of the most used programs after NCLB. One of the goals that the AR claims to do is that it “helps every student master standards”. With that claim and some researches to support it, Accelerated Reader Program, now managed by Renaissance Learning, Inc, has sold the AR programs to more than 75,000 k-12 schools nationwide, which is roughly 75% of all schools in the United States (Renaissance Learning, 2009).

This study focused on one aspect of the claims presented by Renaissance Learning. Specifically, does AR really help every student, especially Title One schools’ students, master readings standards as measured by the TAKS reading test?

Statement of the Problem

Most research for AR has been on readers in regular schools (Facemire, 2000; Holman, 1998; Johnson & Howard, 2003; Knox, 1996; Melton, et al., 2004; Morse, 1999; Nunnery, et al., 2006; Pavonetti, et al, 2000; Spradley, 1998). However, very little objective information can be found regarding the effectiveness of the Accelerated Reader program when used for minority students of low socioeconomic status in Title One schools.

ABC Elementary School is one of more than 75,000 schools nationwide using the Accelerated Reader program to increase students' reading levels (Renaissance Learning website, 2009). ABC Elementary School is an urban predominantly Hispanic Title I school, located in an urban setting in Houston Texas with 87% of its 643 students considered economically disadvantaged and 57.7% are Limited English Proficiency students. Like many schools in United States, the implementation of Accelerated Reader program began at ABC Elementary School after NCLB of 2001. Since little research exists regarding the AR program in the district, the impact of the AR program at ABC Elementary School needed to be evaluated by following the progress of the students from third grade to fifth grade. Such evaluation could help principals and decision makers of ABC Elementary School determine how to implement AR programs, and if they need to continue spending money on the AR program. Most importantly, might help other educators obtain an accurate assessment of the Accelerated Reader Program and make decisions whether schools should

invest in the Accelerated Reader program, or to continue with AR program to help improve students' reading achievement.

Purpose of the Study and Research Questions

The purpose of this study was to investigate the impact of the Accelerated Reader program on elementary students' reading TAKS scores in an urban, predominantly Hispanic Title I elementary school. The over-arching question for this study was whether the use of the Accelerated Reader program affects students' reading achievement. This research study was designed to determine whether the amount of time students spend on reading, amount of reading, average AR scores, and students' reaching their AR goal in the Accelerated Reader program have significant impact on students' reading achievement as measured by TAKS reading scores. This study explored the following research questions:

1. Is there a relationship between students' reading TAKS test scores and time spent in reading as measured by the AR Engaged Time system?
2. Is there a relationship between students' reading TAKS test scores and amount of reading as measured by the AR points system?
3. Is there a relationship between students' reading TAKS test scores and the average percent correct on AR tests?

4. Is there a relationship between students' reading TAKS test scores and an individual student's achieving the goal established for him/her by the AR system?

Theoretical Framework

According to Vygotsky's *Zone of Proximal Development (ZPD)*, at some point of students' reading development, the students need time for independent practice that is monitored by the teachers. However, research on the amount of time students spend on reading and reading achievement is scarce (McIntyre, 2003).

The term "Matthew effect" was first coined by sociologist Robert K. Merton to explain the phenomenon that "the rich get richer and the poor get poorer, and in education the term "Matthew effect" has been adopted by a psychologist Keith Stanovich, who has done extensive research on reading and language disabilities. Stanovich used the term to describe a phenomenon on how new readers acquire the skills to read: early success in acquiring reading skills usually leads to later successes in reading as the learner grows, while failing to learn to read before the third or fourth year of schooling may be indicative of life-long problems in learning new skills. This is because children, who fall behind in reading, read less, increasing the gap between them and their peers. Later, when students need to "read to learn" (where before they were learning to read) their reading difficulty creates difficulty in most other subjects.

In this way they fall further and further behind in school, dropping out at a much higher rate than their peers.

In the words of Keith Stanovich (as cited in Adams, 1990, pp. 59-60):

“Slow reading acquisition has cognitive, behavioral, and motivational consequences that slow the development of other cognitive skills and inhibit performance on many academic tasks. In short, as reading develops, other cognitive processes linked to it track the level of reading skill. Knowledge bases that are in reciprocal relationships with reading are also inhibited from further development. The longer this developmental sequence is allowed to continue, the more generalized the deficits will become, seeping into more and more areas of cognition and behavior.”

Or to put it more simply -- and sadly -- in the words of a tearful nine-year-old, already falling frustratingly behind his peers in reading progress, "Reading affects everything you do".

However, if “Matthew Effect” is true, thus “the more students read, the better reader they become” (Stanovich, 1986, p. 36). However, research on the amount of time students spend on reading, amount of reading and reading achievement is scarce (McIntyre, 2003).

Several studies investigated how much time students spend on reading during school day (Durkin, 1978; Duke, 2000a; 2000b Knapp, 1995 ;). In Duke’s study of 20 high and low socioeconomic status (SES) first-grade

classrooms, she found that “with written language” on the average students spent an average of 10.6 minutes per hour each day. However, she did not measure student achievement.

Several studies have measured time spent in reading in relation to students’ reading achievement. For example, in Taylor, Frye, and Maruyama’s (1990) study of 5th and 6th graders, the students were asked to record the time they spent reading at school and at home. On the average, students self-reported that they spent 30.8 minutes per day reading. The study found that the time spent in reading contributed significantly to students’ reading achievement. Few other studies of elementary students’ reading achievement show similar results (McIntyre, 2003). The National Reading Panel (2000) reported that empirical support for a positive relationship of the amount of time students spend in reading and their reading achievement is lacking.

One reason for the lack of empirical evidence showing the positive relationship between the time students spend reading and their reading achievement might be that it is difficult to measure reliably the actual, active reading that students do during the designated reading time, as self-reports lack such reliability (Fraenkel & Wallen, 2009). In other words, it is possible that students may report that they are reading for 30 minutes per day, whereas in reality they might have spent half of this time just looking at the books and not been actively engaged in reading the book.

This study investigated the impact of the Accelerated Reader program on third, fourth and fifth grade students’ reading TAKS scores in ABC

Elementary School, which is an urban, predominantly Hispanic Title I school. This study examined the engaged time in reading, amount of reading, average reading scores, and reaching AR goal which are the key indicators established by the Accelerated Reader program for ensuring the implementation of the AR's best practices, and the students' reading achievement as measured by the state standardized test.

Need for the Study and Significance of the Study

With the adoption of the No Child Left Behind Act of 2001, principals and educators are held accountable for the reading abilities of every student in the school. They must find a quick and effective solution to the problem of raising student achievement. The Accelerated Reader Program (Renaissance Learning, Inc.) appears to provide the solution the schools need, particularly in the area of improving students' reading comprehension achievement.

Renaissance Learning, Inc. claimed that AR program can make all of the students' reading problems disappear. Furthermore, Renaissance Learning, Inc. website (www.renlearn.com) contains a number of short reports, all of which claim success for AR, and all submitted by "independent researchers." As the result, more than 75,000 schools have purchased this program (Renaissance Learning Inc. www.relearn.com, retrieved on September 15, 2009). Most research for AR has been on readers in kindergarten through seventh grade (Facemire, 2000; Holman, 1998; Johnson & Howard, 2003; Knox, 1996; Melton et al., 2004; Morse, 1999; Nunnery, et al., 2006; Pavonetti et al, 2000;

Spradley, 1998). However, very little objective information can be found regarding the effectiveness of the Accelerated Reader program when used for minority students of low socioeconomic status. Even though ABC elementary school purchased AR program in 1999, school wide systematic implementation had been varied. Each classroom teacher implemented the program according to his or her preference. There was no consistency in the way the program was implemented. The concern expressed by the school administrator and classroom teachers of the effect of Accelerated Reader on achievement test scores prompted the interest for conducting this study. ABC Elementary School had invested thousands of dollars in purchasing the program. Results were desired by the school administrator or determine if further money and time should be invested in the program. Most importantly, it would behoove other educators to obtain an accurate assessment of the Accelerated Reader Program and make decisions whether schools should invest in the Accelerated Reader program. If the study's results provide evidence that there were marked gains in student achievement levels with utilization of the Accelerated Reader program, the study could have professional value, provide practical implications, and could also help clarify any ambiguous outlook on the program. The intention of this study was to determine if the use of Accelerated Reader in the classroom is a beneficial tool to promote literacy in young readers regardless of socioeconomic, ethnic, and cultural backgrounds. Since reading is the cornerstone for education at any level, a program that purports to enhance students' reading skills is worth scrutiny.

Definition of Terms

For the purposes of this study, the following terms are provided below.

Accelerated Reader (AR) --- AR is a computer software program created by Renaissance Learning, Inc. to help teachers manage and monitor students' reading. The program consists of three steps. First, the student simply picks a book at his or her level and reads it at his or her own pace. Second, when finished, the student takes a 5, 10, or 20 questions short quiz on the computer. Third, Accelerated Reader gives both student and teacher feedback based on the quiz results that the teacher then uses to direct ongoing reading practice.

AR Test-A--- a computerized test with 5, 10, or 20 multiple-choice questions, based on important events and information in the book. When a test is completed, the student is able to immediately see the percentage correct, and points received for that score. The student is also able to view the missed questions, and the correct answers for those questions.

Achievement Gap --- According to the No Child Left Behind Act (NCLB) of 2002, an achievement gap is the difference in achievement between disadvantaged and minority students on the one hand and their peers on the other hand (NCLB, 2005).

Adequate Yearly Progress (AYP) --- Adequate Yearly Progress is a measure of a school's ability to meet the *No Child Left Behind Act's* required benchmarks with specific performance standards (Tennessee Department of Education, 2006).

At-risk Student --- A student faces school failure or has the potential to leave school early due to low educational achievement (Taite, 1990). According to Fryier (1997), students are at risk of becoming dropouts because their learning needs are not met.

Grade Equivalent (GE) --- Grade Equivalent scores range from 0.0 to 12.9+. They represent how a student's test performance compares with that of other students nationally (Renaissance Learning, Inc.).

Normal Curve Equivalent (NCE) --- Normal Curve Equivalent scores are based on an equal interval scale. This means the difference between any two successive scores on the NCE scale has the same meaning throughout the scale. These scores range from 1 to 99. They are useful for making meaningful comparisons between different achievement tests and for statistical computations, such as determining an average score for a group of students (Renaissance Learning, Inc, 2011).

Percentile Rank (PR) --- The Percentile rank compares a student's test performance with that of other students in the state or nation in the same grade. It ranges from 1 to 99. This score indicates the percentage of other students nationally who obtained scores lower than the score of a particular student (Renaissance Learning, 2009).

Proficiency level --- An academic performance for each grade assessed. Students demonstrate competency over challenging subject matter (National Assessment of Educational Progress, 2004).

Scale Scores (SS) --- *Scale Scores* is calculated based on the difficulty of the questions and the number of correct responses. Scaled scores are useful for comparing students' performance over time and across grades (Texas Department of Education, 2004).

Students' Reading Achievement --- Texas Assessment of Knowledge and Skills (TAKS) reading test, is a standardized test used in Texas primary and secondary schools to assess students' attainment of reading skills required under Texas education standards. It is developed and scored by Pearson Educational Measurement with close supervision by the Texas Education Agency. TAKS reading test measures basic reading comprehension skills among other factors. TAKS was used in this study to measure the reading achievement of third, fourth and fifth grade Regular, At-risk, Limited English Proficiency (LEP), and low Socioeconomic Status (SES) students during the 2008-2009 school year.

Socioeconomic Status (SES) --- For the purposes of this study, students who are the on free- and reduced-price meals program are considered to have lower socioeconomic status than students who are not on the program.

No Child Left Behind Act (NCLB) --- The reauthorized Elementary and Secondary Education Act (ESEA), which is the main federal law affecting education from kindergarten through high school. NCLB is built on four principles: accountability for results, more choices for parents, greater local control and flexibility, and an emphasis on doing what works in schools based on scientific research.

TAKS (Texas Assessment of Knowledge and Skills) --- Beginning in the 2002-2003 school year, Texas began administering this state test to measure statewide curriculum.

TEKS (Texas Essential Knowledge and Skills) --- The Texas learning objectives allotted by the state standards for each content area and each grade level for what students should know and be able to do. The TAKS assesses the students' mastery of the TEKS.

NAEP--- National Assessment of Educational Progress, otherwise known as the Nation's Report Card. It assesses student achievement in grades 4, 8, and 12. It is the only nationally representative and continuing through grade 12 assessment of what American students know and can do in various subject areas (NAEP, 2007).

Zone of Proximal Development (ZPD) --- is a theoretical concept introduced by the Russian child development psychologist Lev Vygotsky (1978) that has been translated into the realm of guided independent book reading with the development of ZPD ranges. When students read within their individual ZPD ranges, the portion of the text they know helps them understand the unknown portion of the text (Paul, 1996). In independent, literature-based reading, a ZPD is the range of books that will challenge a student without causing frustration or loss of motivation. The Accelerated Reader Goal-Setting Chart includes suggested ZPD ranges educators can use when setting reading goals with students.

Overview of the Study

This research is organized into five chapters. Chapter One includes an introduction, brief background of the study, statement of the problem, definition of the terms, the purpose of the study and the research questions, and significance of the study. Chapter Two presents a review of the pertinent literature. Chapter Three details the research methodology. Information is provided about the research design, participants, instrumentation, a description of *Accelerated Reader* courseware, data collection, limitations of the study, and proposed data analysis. Chapter Four describes the results of this research study. In Chapter Five, the findings are summarized, interpreted, and conclusions are made. In addition, recommendations to improve practice and ideas for further research are provided.

CHAPTER TWO

REVIEW OF THE LITERATURE

This chapter presents an overview on previous research pertinent to impact of the Accelerated Reader Program on the students reading achievements. This chapter reviews the literature in the following areas: (a) reality of students' reading achievement in the USA (b) achievement gap (c) new accountability in reading and the NCLB Act; (d) Accelerated Reader Program (d); research on Accelerated Reader Program (e) research on Accelerated Program and Title One students.

Reality of Students' Reading Achievement in the USA

The demographics of the United States are rapidly changing, resulting in an increasingly diverse student population. Minorities, now roughly one-third of the U.S. population, are expected to become the majority in 2042. The Hispanic population is projected to nearly triple, its share of the nation's total population is projected to double, from 15 percent to 30 percent. Thus, nearly one in three U.S. residents would be Hispanics (US Census, 2008). According to Kindler (2002) the enrollment of English language learners in U.S. schools has increased approximately 100% in the past 10 years while the general school population has grown only 12%. Public school personnel must contend with the fact that a large number of students have limited English proficiency.

Ensuring that all students become effective reader is a primary goal of American public education. We want students to be able to select their reading materials, talk about what they're reading, write and communicate ideas with

confidence, and read textbooks and primary source materials with understanding. The evidence, however, suggests that this is not happening.

Evidence has been accumulating for a number of years that many of America's school children are not mastering essential reading skills. In 1996, the National Assessment of Educational Progress (NAEP), a national test that follows student learning, showed that 36 percent of nine-year-olds failed to reach the level of "partially developed skills and understanding" and seven percent could not accomplish simple reading tasks. Among 17-year-olds, only 29 percent were able to understand complex information and only six percent reached the highest level of understanding (1999 NRP Progress Report).

Nearly 40 percent of fourth graders on the most recent National Assessment of Educational Progress (NAEP, 2001) did not demonstrate understanding of the overall meaning of what they read, scoring in the "below basic" range, the lowest of four ranges (advanced, proficient, basic, below basic). The most recent *Nation's Report Card* (Donahue, Finnegan, Lutkus, Allen, & Campbell, 2000), in fact, heightens concern about equal educational opportunity for all children. From 1992 to 2000, while the highest performing fourth-grade students (at the 75th percentile and above) made steady gains in reading, the lowest performing students (at the 10th percentile and below) lost ground, demonstrating lower and lower performance on the fourth-grade NAEP reading assessment.

Overall, national longitudinal studies show that more than 17.5 percent of the nation's school children — about 10 million children — will encounter reading problems in the crucial first three years of their schooling.

Achievement Gap

American Federation of Teachers (1999) states that 95% of all children can be taught to read, however, those who don't learn to read well will follow a cyclic pattern of failure throughout life. This inability perpetuates racial, ethnic, and socioeconomic inequalities (Learning 1st Productions, 2005). Realizing that there is much at stake for the United States, President George W. Bush established the No Child Left Behind Act (NCLB) in 2002, which reauthorized the Elementary and Secondary Education Act (ESEA) of 1965. This act emphasized reading, with a goal of every child learning to read by third grade. No Child Left Behind Act (NCLB) of 2002, an achievement gap is the difference in achievement between disadvantaged and minority students on the one hand, and their peers on the other hand (NCLB, 2005). The 1994 NAEP results suggested that reading problems affect students in virtually every social, cultural, and ethnic group. According to the results, 29 percent of whites, 69 percent of African-Americans, 64 percent of Hispanics, 22 percent of Asian-Americans and 52 percent of American Indians read below basic levels in the fourth grade. And the same test showed that 32 percent of fourth graders who could not read basic material were sons and daughters of college graduates (Campbell, Jay et al., *NAEP 1994 Reading Report Card for the Nation and the*

States: Findings from the National Assessment of Educational Progress and Trial State Assessment).

Although the rhetoric behind standards reforms and accountability systems emphasizes higher academic achievement, of particular concern is the plight of children from low socioeconomic (SES) homes. Whitehurst (1998) found that many of these children attended and benefited from high quality early childhood programs, but then experienced a significant deceleration in their early reading performance when they entered first grade in a school primarily serving low-SES children. Moreover, gaps in reading achievement related to socio-economic differences continue to increase in the intermediate and higher grades (Chall, 1996; Snow, Barnes, Chandler, Goodman, & Hemphill, 1991). Trend data indicate that in American elementary schools, gaps in performance between whites and blacks and between whites and Hispanics have not changed since 1992. In 2000, NAEP fourth-grade reading scores for blacks, Hispanics, and American Indian students fell disproportionately below the 50th percentile, while the same scores for whites tended to fall above the 50th percentile (Phillips, 2001). It should be noted, however, that these results do *not* indicate that racial differences in any way explain achievement differences. In fact, differences in achievement related to race/ethnicity mask relationships between socioeconomic status and achievement. Of the fourth-grade students eligible for free/reduced-price lunch, 14 percent performed at or above proficiency in NAEP reading compared to 41 percent of students who were not eligible (Phillips, 2001).

The No Child Left Behind Act (NCLB)

The No Child Left Behind (NCLB) Act was signed into law by President George W. Bush on January 8, 2002 (NCLB, 2009). It is a historic reform bill, which is based on four specific elements:

1. Stronger accountability for achievement results by school systems;
2. More freedom and choices given to schools and districts;
3. Encouragement of proven education methods; and
4. More options available to parents.

The NCLB is designed to reduce the achievement gaps among students of various achievement levels, ethnicities, and SES levels. Annual report cards are presented to parents and public schools that do not make the grade and these schools must provide supplemental programs to students. Schools have five years to make progress or they must change completely how their schools are run (Four Pillars of NCLB, 2006).

NCLB requires states to disaggregate student achievement data by racial subgroups of students, including black and Hispanic students, so that performance gains for all children can be tracked. The law also contains a host of accountability measures that penalize schools that are unable to show achievement gains by all subgroups of students. The hope is that these strict accountability measures will spur across-the-board gains in achievement.

Accelerated Reader Program

Developed by Judith and Terrance Paul in 1986, the Accelerated Reader (AR) Program is a computer-based, reading management and motivational system designed to complement existing classroom literacy programs for grades K-12 (Johnson, 2004). Now marketed by the Renaissance Learning, Inc. company, it is used by more than 75,000 k-12 schools across the country (Renaissance Learning, Inc., 2009). The program consists of a basic three-step formula: Students check out a book from a list of fiction or nonfiction titles that suit their assessed reading level, students read the book, and students take a quiz on the book on the computer to demonstrate mastery of the content (Renaissance Learning, Inc., 2009).

An Accelerated Reader student selects a book, which is assigned a point value, from more than 100,000 titles on the Accelerated Reader list. The student chooses his or her own books and reads at his or her own pace and ability level, which is determined through a pre-assessment, the Standardized Test for Assessment of Reading (STAR). According to the Accelerated Reader company information, STAR is a computer-adaptive, norm-referenced reading test wherein students choose the best word to complete a sentence, and the software instantly delivers the next question, allowing students to complete the test in a few minutes. The test does not incorporate oral reading comprehension or teacher observations of reading behaviors. The STAR pre-assessment generates a Grade Equivalent score (Biggers, 2001), which is then used to provide a student's approximate reading range, or Zone of Proximal Development (ZPD;

Greer, 2003) which is the readability level for the student that is challenging and enjoyable and leads to maximum development. According to Vygotsky (1981), tasks within the ZPD promote maximum cognitive growth. Vygotsky claimed that children learn little if they perform tasks that are already easy for them. They learn the most if they have challenging tasks with an adult nearby to help them when needed. Books in the school library are color coded to designate different text readability levels. When in the library, students select color-coded books that conform to their zone. Thus, students are reading books at their appropriate skill level.

After reading a book, the student goes to the computer and takes a multiple-choice comprehension test on the book's content. The computer scores the test, awards points, and maintains a complete record. The monitoring of reading performance is very close and provides diagnostic information (e.g., analysis of scores, average percentage of correctly answered questions, difficulty of books, points earned); What the AR program does is to encourage students to read books independently and it then monitors how carefully they read the books. In some cases, students receive rewards such as pizza lunches or recognition buttons for accumulating points and reaching individual or group goals (Putman, 2005).

Accelerated Reader Program Engaged Time

In AR program, Engaged Reading Time is an estimate of the number of minutes per day that students were actively engaged in reading practice. Of note

that this is not the amount of time *scheduled* for reading. To calculate Engaged Time, AR program begins with the baseline data that show how many points students of varying abilities can be expected to earn per minute of reading practice. For example, a student with a grade-equivalent (GE) score of 2.0 on a STAR Reading test can be expected to earn 6.5 points by reading 30 minutes per day for six weeks. A student with a GE score of 4.0 can, of course, accomplish more—8.5 points (Renaissance Learning, 2009). To determine Engaged Time for each student, the AR program compares the points earned to expected points to estimate the amount of time the student has been actively engaged in reading practice. For example, let's say a student has a grade equivalent score of 6.5. According to AR, a student of his or her ability can earn 14 points by reading 30 minutes a day for six weeks. If this student has only earned 7.0 points, we therefore can estimate his or her Engaged Time to be 15 minutes per day (Renaissance Learning, 2009).

Accelerated Reader Program Points

In AR program, students read a book and take a test, and the system assigns a point value to each book based on the number of words in the book and its reading difficulty, using a formula based on well-known readability indices (Chall & Dale, 1995; Flesch 1968, 1974). The formula considers the number of syllables in words and sentence complexity (Renaissance Learning, 2009). Thus,

$$\text{AR Points} = \frac{(10 + \text{reading level}) \times \text{words in book}}{100000}$$

AR Average Percent Correct Scores

Research shows that high levels of success in academic tasks lead to improved educational outcomes, including large gains in reading achievement (Allington, 1984; Betts, 1946; Rosenshine & Stevens, 1984). In Accelerated Reader, level of success in reading practice is measured by percent correct on AR Reading Practice Quizzes. Validated by Topping and Sanders (2000), AR Best Practices recommend students average 85 percent correct or higher. Additional researchers confirmed the 85-percent-correct recommendation by analyzing the reading practice and achievement of more than 40,000 students (Borman & Dowling, 2004; Paul, 2003). Averages of 90% and higher were associated with even greater gains. Results showed that percent correct on AR Reading Practice Quizzes was more important to student reading achievement than amount of reading or book readability levels. At all achievement levels, students experienced greater normal curve equivalent (NCE) gains as percent correct increased.

Accelerated Reader Program Goal

Accelerated Reader Program (AR) goal is the number of points students are expected to earn based on Grade Equivalence and time spent reading. The Accelerated Reader Goal-Setting Chart helps educators make sure students

meet percent-correct goals by providing guidelines for book-level reading ranges (or ZPD ranges) within which students should select books to read and recommendations for the amount of reading students should do each day. For the data collected in this study, students AR goals set based on 45 minutes Daily Practice for thirty weeks. The following chart is the basis for setting the goal.

Grade-Equivalent Score	Suggested ZPD	60 Min. Daily Practice			30 Min. Daily Practice			20 Min. Daily Practice		
		Points per Week	Points per 6 Weeks	Points per 9 Weeks	Points per Week	Points per 6 Weeks	Points per 9 Weeks	Points per Week	Points per 6 Weeks	Points per 9 Weeks
1.0	1.0 – 2.0	1.7	10	15	0.9	5.0	7.5	0.6	3.3	5.0
1.5	1.5 – 2.5	1.9	11	17	1.0	5.5	8.5	0.6	3.7	5.7
2.0	2.0 – 3.0	2.1	13	19	1.1	6.5	9.5	0.7	4.3	6.3
2.5	2.3 – 3.3	2.3	14	21	1.2	7.0	10.5	0.8	4.7	7.0
3.0	2.6 – 3.6	2.5	15	23	1.3	7.5	11.5	0.8	5.0	7.7
3.5	2.8 – 4.0	2.7	16	24	1.4	8.0	12.0	0.9	5.3	8.0
4.0	3.0 – 4.5	2.8	17	25	1.4	8.5	12.5	0.9	5.7	8.3
4.5	3.2 – 5.0	3.2	19	29	1.6	9.5	14.5	1.0	6.3	9.7
5.0	3.4 – 5.4	3.5	21	32	1.8	10.5	16.0	1.2	7.0	10.7
5.5	3.7 – 5.7	3.9	23	35	2.0	11.5	17.5	1.3	7.7	11.7
6.0	4.0 – 6.1	4.2	25	39	2.1	12.5	19.5	1.4	8.3	13.0
6.5	4.2 – 6.5	4.6	28	41	2.3	14.0	20.5	1.5	9.3	13.7
7.0	4.3 – 7.0	4.9	29	44	2.5	14.5	22.0	1.6	9.7	14.7
7.5	4.4 – 7.5	5.3	32	48	2.7	16.0	24.0	1.8	10.7	16.0
8.0	4.5 – 8.0	5.6	34	50	2.8	17.0	25.0	1.9	11.3	16.7
9.0	4.6 – 9.0	6.3	38	57	3.2	19.0	28.5	2.1	12.7	19.0
10.0	4.7 – 10.0	6.9	41	62	3.5	20.0	31.0	2.3	13.7	20.7
11.0	4.8 – 11.0	7.6	46	68	3.8	23.0	34.0	2.5	15.3	22.7
12.0	4.9 – 12.0	8.3	50	75	4.2	25.0	37.5	2.8	16.7	25.0

* Renaissance Learning, 2009

**For the data collected in this study, students' AR goals set based on 45 minutes of Daily Practice

Research Findings about the AR Program

According to Renaissance Learning website, as of March 2011, there were over 165 scientific research studies that supported AR (Renaissance Learning, 2011), of these studies, 30 were experimental and quasi-experimental; 67 were correlation and case studies; 15 were product foundation papers; and 10 were reliability and validity assessment research. According to Renaissance Learning, 130 of the studies were considered independent and 29 were internal research. Although the research may support the effectiveness of the program, some experts in the field of literacy and children's literature are skeptical about the effectiveness of AR. One criticism is that fewer than 25 of the 165 studies have been published in referred journals while others question some of AR long-term effects and as well as its motivational factors (Baumann, Hooton, & White, 1999; Brophy, 1999; Gamrell, Palmer, Codling, & Mazzoni, 1996; Krashen, 2002, 2003a; Guthrie, 1996; Guthrie & Davis, 2003; Labbo, 1999; Pavonetti, Brimmer and Cipiowski, 2003; Lamme, 2003; Worthy, 2002). One area that is missing from both sides of these studies is the voice of those stakeholders that are involved with AR on a daily basis.

Accelerated Reader was given high marks by the What Works Clearinghouse, rounding out consensus about AR's effectiveness among three key, federally funded groups: the What Works Clearinghouse, the Florida Center for Reading Research, and the National Center on Student Progress Monitoring (Renaissance Learning, 2009).

The 1992 National Reading Study and Theory of Reading Practice (Paul, 1992) used Accelerated Reader points and standardized test scores for 4,498 elementary and middle school students from 64 schools. The study found a significant correlation between AR points earned by the students in the program, and their standardized test readings scores.

Similar results were replicated by The National Study of Literature-Based Reading (Paul, 1993), which used even larger student sample of 10,124 students from 136 schools. The purpose of that study was to validate the theory of reading practice and indicate its important predictive ability for all students. The study confirmed the conclusions drawn in the 1992 study and several other studies that also found a positive connection between reading practice and reading ability (Greaney, 1980; Heynes, 1978; Krashen, 1993; Leinhart, 1985; Taylor, Frye & Maruyama, 1990). However, Topping and Paul found that there is a low amount of reading practice time in schools, and this practice amount lowers significantly after the sixth grade.

In support of the AR program, their study found that schools which had used the AR program for longer periods of time displayed higher rates of reading practice. The results of both studies led to the conclusion that schools should allocate more time for students' silent reading.

The Patterns or Reading Practice study (Paul, 1996) reported similar results in the study involving 6,149 Texas schools. Based on an analysis of pass rates on the Texas Assessment of Academic Skills (TAAS) reading test, the following results were obtained. Specifically, the schools which owned AR

performed statistically significantly better than non-AR schools on virtually all subjects tests, including reading, math, science, and social studies. AR-owning schools also showed significantly higher attendance rates than the control group. Additionally, gains in academic performance increased with the increase in the length of the time the school owned the AR Program. Analysis of AR's effectiveness in different metropolitan settings indicates that AR is by far the most influential reading program in urban schools and in low socioeconomic environments.

In a longitudinal study of Accelerated Reader and best classroom practices, Brem, Husman, and Duggan (2005) examined the long-term effect of on the reading performance and motivation of students at an urban, Title I elementary school. The researchers found that students participating in Accelerated Reader maintained a high level of mastery-oriented motivation (learning for learning's sake) toward reading while becoming less performance-oriented (working for the grade), that students tended to be performance oriented if they perceived their teachers to be, and that perceived mastery orientation of teachers was associated with both mastery- and performance-orientation in students.

To investigate the impact of Accelerated Reader Program on students' reading achievement, Nunnery, Ross, and McDonald (2006) randomly assigned 76 teachers from 11 urban elementary schools to use or not use Accelerated Reader. The students' STAR Early Literacy and STAR Reading results showed significant gains and moderate to large effect sizes in grades K-2 and small to

moderate effect sizes in grades 3–6. Eighty-three percent of the students in grades 3–6 were eligible for free or reduced-price lunch. Students with learning disabilities benefited most in classrooms with high-implementation of AR compared to those in low- or no-implementation classrooms.

The notion of positive effect of Accelerated Program is further affirmed by a recent study conducted by Topping, Samuels, and Paul (2007). The significance of this study lies in its examination of a much wider range of age group beyond early elementary school years, as opposed to the majority of research studies. Data from 45,670 students' in grades 1–12 at 139 schools from 24 states who read more than 3 million books were analyzed to investigate if reading achievement was related to the quality of practice (success in reading comprehension), as well as the quantity (engaged reading volume). The results showed a positive relationship with achievement gains at all levels of achievement. However, both high quantity and high quality in combination were necessary for high achievement gains, especially for older students. Both were weakly associated with students' initial reading achievement, but more strongly associated with the class in which the student was enrolled, possibly suggesting that the properties of teacher intervention in guiding independent reading were important. Implications for theory building, research, and practice were explored.

Research Findings about the AR Program in Title I Schools

Does AR work for all? Does reading practice make perfect? To investigate whether the model literacy programs such as AR targeted children who were poor readers relative to their grade in school, White and Reisner (2007) studied 47 local model literacy initiative programs. The measure of reading proficiency available for this study was the STAR Reading Assessment, a standardized test that children participating in the AR program complete two to three times per year. Results indicated that the proportion of participants reading at a level appropriate for their grade level or above increased. The average pre–post change in STAR reading scores was statistically significant.

Similar results were obtained in 2005 of Brem, Husman, & Duggan’s study of a K-6 urban, Title I elementary school; The result showed that students at an urban, Title I treatment school using Accelerated Reader with recommended best classroom practices achieved greater SAT-9 reading scores than students in a similar school that did not use AR program.

In a large scale study of Ross and Nunnery in 2005, 10,000 students in grades 3–8 participated in the study from 23 treatment schools and 18 control schools. More than 60% of the 10,000 students participating in this study were eligible for free or reduced-price lunch, the researchers found that the organizational climates reported by teachers at treatment schools were significantly more favorable than those reported by teachers at control schools.

Holmes, Brown, and Algozzine(2006) studied effect of the Accelerated Reader program in Central and Northern Georgia. 2,287 students

from 4 Title I schools elementary schools participated in the study. Of the 4 Title I schools, 2 were located in urban areas and 2 were located in rural areas. One school in each area was either a high or low implementer of Accelerated Reader. Results indicated that students in the 2 high implementing schools outperformed students in the 2 low-implementing comparison schools. Researcher observations confirmed that the 2 high-implementation schools engaged in Accelerated Reader best classroom practices more often than the 2 low-implementation schools. Teachers in all schools expressed positive attitudes towards Accelerated Reader.

In 2003, Samuels and Wu studied 67 students in grades 3 and 5 on the effects of immediate feedback on reading achievement. This study took place at a school where 64% of the students were eligible for free or reduced-price lunch. It compared students that completed book reports, which resulted in delayed feedback, and students that completed Accelerated Reader quizzes, which provided immediate feedback. The results revealed that students who used Accelerated Reader showed significantly higher gains on reading achievement compared to students who completed book reports and received only delayed feedback. In particular, students receiving immediate feedback through Accelerated Reader demonstrated twice the gain in reading comprehension of students not using Accelerated Reader.

Nancy Facemire (2000) questioned the effect of AR on the reading comprehension of third grade students in her nine weeks study. Two third grade classrooms were randomly selected within the school which was located in

West Virginia where 60% of the school's population was considered at-risk. 36 students participated in the study. The experimental group consisted of 15 students, and the control group contained 21 students. Facemire concluded there was a statistically significant gain in reading comprehension. She stated that the Accelerated Reader program had a positive effect on the reading comprehension of third grade students. The researcher did not go into detail about the socioeconomic status of the students that participated in the study. The school had 60% of its students at-risk, but that does not mean that any of the students used in the study were considered at-risk. Another consideration is the use of the STAR report to ascertain the growth in reading comprehension scores. This program is created to work with the AR program and may not be the most reliable tool to use within a scientifically based research study.

Contrarily, according to Stevenson and Camarata (2000), students who failed to meet a given goal seemed to be discouraged and were perceived to be poor readers. They said that AR "prevents children from choosing recently published books and sends the message that if something is not on the AR test list, it is not worth reading" (p. 8).

Krashen (2005) argued that there was a lack of experimental evidence supporting the use of the Accelerated Reader program due to many studies did not use comparison groups that had equal access to books and equal time set aside for recreational reading. Moreover, "those who excelled in the AR program were those who were already dedicated pleasure readers" (p. 49). However, Krashen did agree that Accelerated Reader had some advantages.

Trelease (2006) found that teachers did not like classroom discussions of books because the discussions might give away answers to questions on the AR tests. Other problems of AR program, according to Trelease were: Teachers have stopped reading children's books because the computer will ask the questions instead; Class discussions of books decreases because a discussion would give away test answers, and all that matters is the electronic scores.

Unfavorable results of AR program also found by Kambarian (2001), in a longitude three-year study, Kambarian investigated the effect of AR on at-risk students. Kambarian utilized two similar elementary schools in the metro-east area of St. Louis, Missouri. Alpha school, the experimental school, had an average at-risk percentage of 73% over the three-year period. On the other hand, the Beta school, the control school, had an average at-risk percentage of 48% same three year period. Alpha school utilized the district basal series. With the inclusion of the AR program since 1997, Alpha school also implemented sustained silent reading (SSR) and using rewards as a motivational tool to the AR program. Beta school, on the other hand, only used the basal reading series during reading time. They did not have the extra sustained silent reading time and did not use the AR program. The control group consisted of 31 at-risk students and 72 who were not considered at-risk from second grade through sixth grade sample population. The experimental group which is the one receiving the AR treatment consisted of 38 at-risk students. Terra Nova norm-referenced test was utilized in order to obtain the results for the study. Reading scores were analyzed and compared between the at-risk groups, as well as the

at-risk and non at-risk group students. The results obtained from the study were not statistically significant. Even though there was an increase in reading growth, the results are minimal and are not considered worthy of future consideration.

Most advocates of Accelerated Reader Program maintain that the program encourages students to read more and better books which, in turn, will lead to increases in overall reading achievement (Pavonetti, Brimmer, & Ciplewski, 2002-2003). This assertion about AR takes on added importance in supporting Matthew Effect in reading in light of findings reported by the National Reading Panel (2000) that there is no basis in scientifically based research that independent reading in school leads to increases in reading achievement.

Summary

Reading is important because it is a part of our everyday life. It is generally accepted that reading skills are an essential key to learning, and it spans all academic subjects. Reading is recognized as a skill basic for virtually all learning (Ahitaker, Gambrell, & Morrow, 2004). It is the foundation from which all subjects are built. As the students enter the school, heavy emphasis is placed on teaching students how to read. Students who are unable to read fluently and adequately are facing the challenges and difficulties as they move through elementary school. The students who cannot read adequately are more prone to meet academic failures and to repeat grades. They are more likely to become the candidates to drop out high school before, (Harris & Sipay, 1990).

Accelerated Reader aims to establish a purpose for reading. Depending on how the program is implemented in schools, the students are motivated by awarding prizes after points are accumulated. Although AR's purpose was to create lifelong readers, it is not implemented in its true fashion. If teachers use Accelerated Reader as feedback on the progress of students, that is very useful. It is not, however, a stand alone program (Chenoweth, 2001).

CHAPTER THREE

METHODOLOGY

The purpose of this study was to investigate the impact of the Accelerated Reader program on third grade, fourth grade and fifth grade elementary students' reading TAKS scores in ABC Elementary School, an urban predominantly Hispanic Title I school.

Research Design

A correlational ex-post facto research design was utilized for this research study (Fraenkel & Wallen, 2009) to determine whether a correlation exists between the reading achievement of third, fourth and fifth grade Title One school students (as measured by Texas Assessment of Knowledge and Skills [TAKS]) reading tests and the amount of time students spend on reading in the Accelerated Reader program (as measured by Engaged Time), amount of reading in Accelerated Reader program (as measured by AR points), AR average scores, and students' reaching their AR goal at the end of the academic year (i.e., after 30 weeks of instruction). The Accelerated Reader program measured the number of points earned by each of the students throughout the academic school year. The use of AR points served as the implementation of the Accelerated Reader program. This study was "ex-post facto" because the data already have been collected by the state and the school, and they were analyzed as archival data.

This chapter began with a restatement of the research questions. The details about the Accelerated Reader Program in ABC Elementary School, the

participants in this study, the research design, the measures, data analysis, and limitations were described in a more in-depth manner in the subsequent sections.

Restatement of the Research Questions

The purpose of this study was to investigate the impact of the Accelerated Reader program on elementary students' reading TAKS scores in an urban, predominantly Hispanic Title I elementary school. The over-arching question for this study was whether the use of the Accelerated Reader program affects students' reading achievement. This research study was designed to determine whether the amount of time students spend on reading, amount of reading, average AR scores, and students' reaching their AR goal in the Accelerated Reader program have significant impact on students' reading achievement as measured by TAKS reading scores. This study explored the following research questions:

1. Is there a relationship between students' reading TAKS test scores and time spent in reading as measured by the AR Engaged Time system?
2. Is there a relationship between students' reading TAKS test scores and amount of reading as measured by the AR points system?

3. Is there a relationship between students' reading TAKS test scores and the average percent correct on AR tests?
- 4 Is there a relationship between students' reading TAKS test scores and an individual student's achieving the goal established for him/her by the AR system?

Accelerated Reader Program in ABC Elementary School

ABC Elementary School is a public kindergarten through fifth grade school located in an urban area in southwest Texas with 87% of its 643 students considered economically disadvantaged, and 57.7% are Limited English Proficiency students. Of the 643 students, 1.87% are African Americans, 92.38% are Hispanics, 5.6% are white and .16% are Asian/Pacific Islanders. Among all students, 55.21% are in Bilingual program, 7.31% are in Gifted and Talented program and 9.18 % are eligible for resource services.

ABC Elementary School has used the Accelerated Program since 1998. Like most schools in the United States, the campus wide implementation of AR program started after passing of NCLB in 2001. ABC started Project Read program in 2006, in which teachers allocated 45 minutes per day for silent reading. Each classroom teacher implemented the program according to his or her preference. Some classes did Project Read the first thing in the morning, whereas others did Project Read before and after lunch. Some teachers focused on the AR points where as they are encouraging students to read more in order to earn more AR points; while others focused on students' AR average scores or

AR engaged times. There was no consistency in the way the program was implemented.

ABC Elementary School was selected for this study for several reasons. First, even though ABC Elementary School has purchased the Accelerated Reader Program since 1998, school wide systematic implementation had been varied. The concern expressed by the school administrator and classroom teachers of the effect of Accelerated Reader on achievement test scores prompted the interest for conducting this study. ABC had invested thousands of dollars in purchasing the program, and recently started school wide 45-minute Project Read program when students read independently or are read to. The results of the study were desired by the school administrator to determine if further money and time should be invested in the program.

Participants

The population for this study consisted of 394 students from ABC Elementary School. All students enrolled in the third, fourth and fifth grade during 2007-2008 and 2008-2009 school year participated in this study. All students enrolled in the third, fourth and fifth grade participated in the Accelerated Reader program. There were a total of 299 students enrolled in third, fourth, and fifth grade during 2008-2009 school year. There were 104 third graders 95 fourth graders and 100 fifth graders. Among those students, 149 were female and 150 male; the school student population for that year was broken down into the following sub-groups: regular students, $n = 101$ (33.74%),

at-risk students, $n = 251$ (84%), LEP students, $n = 198$ (66%), and low SES students, $n = 267$ (89%). There were a total of 290 students enrolled in third, fourth, and fifth grade during 2007-2008 school year. There were 95 third graders, 100 fourth graders, and 95 fifth graders.

Instrumentation

The Texas Assessment of Knowledge and Skills (TAKS) is a standardized test used in Texas primary and secondary schools to assess students' attainment of reading, writing, math, science, and social studies skills required under Texas education standards. It is developed and scored by Pearson Educational Measurement, with close supervision by the Texas Education Agency. Though created before the No Child Left Behind Act was passed, it complies with the law. TAKS reading test measures basic reading comprehension skills among other factors. TAKS was used in this study as the instrument to measure students' reading comprehension during the 2007-2008 and 2008-2009 school year.

The AR reading practice quiz is intended to determine if the child actually read the book. The questions match the chronology of the book itself, which reinforces the story structure. An AR quiz is valid because it relates directly to a specific book and tests knowledge of the facts in that literature. Analyses suggest that a student who reads the book will do well on the quiz. A student who does not read the book will perform at the same level as that expected by chance (Renaissance Learning, 2011).

Reliability for each quiz was evaluated for internal consistency by Cronbach's alpha coefficient. Quiz data was collected from 135 schools in 20 states for a total of 7,686,257 records for 82,822 students. From the actual 20,139 quizzes analyzed, 1.2% had negative alpha values. These were mostly short, 5-question quizzes and non-fiction ones. Reliability increased as the length of the quizzes increased (Renaissance Learning, 2011).

The validity study of AR quizzes showed that 97% of those who had read the book were able to pass the test with a 60% score or better; while 6% of students who had not read the book achieved 60%. This was "only slightly higher than the chance pass rates" and was not "statistically significant," according to Renaissance Learning (2011, p. 32).

Data Collection

Approval was obtained from the Institutional Review Board at the University of Houston before the data was collected (see Appendix A). Written permission was also obtained from the principal of ABC Elementary School and the school district's research department (see Appendix B). The archival data included the TAKS reading scale scores, baseline TAKS released reading test scores, students' Accelerated Reader records, including engaged time, points earned, percentage correct and status of students reaching their AR goal, and demographic information for all students for 2007-2008 and 2008-2009 school year. Information, such as names and identification numbers was coded to protect the identities of all students involved in this study. Correlational

analyses using SPSS 17.0 was conducted to examine the correlation between each independent variable (i.e. AR points, AR engaged time, AR average scores, and AR goal reached status) and the dependent variable (TAKS reading scores). Means and standard deviations were also examined.

Data Analysis

1. Is there a relationship between student's reading TAKS test scores and time spent in reading as measured by the AR Engaged Time system?

Student data from the Accelerated Reader end of year report was compared to the TAKS test report for Spring of 2007 and 2008 with a Pearson r test to determine if there was a significant relationship between TAKS scores and time spent in reading as measured by the AR Engaged Time system.

Individual student names remained confidential.

2. Is there a relationship between student's reading TAKS test scores and amount of reading as measured by the AR points system?

Student data from the Accelerated Reader end of year report was compared to the TAKS test report for Spring of 2007 and 2008 with a Pearson r test to determine if there was a significant relationship between TAKS scores and amount of reading as measured by the AR points system. Individual student names remained confidential.

3. Is there a relationship between student's TAKS reading scores and the average percent correct scores on AR tests?

Student data from the Accelerated Reader end of year report were compared to the TAKS test report for Spring of 2007 and 2008 with a Pearson r test to determine if there was a significant relationship between these scores and the average percent correct on AR tests. Individual student names remained confidential.

4. Is there a relationship between a student's reading TAKS test scores and individual students achieving the goal established for him/her by the AR system?

Student data from the Accelerated Reader end of year report was compared to the TAKS test report for Spring of 2007 and 2008 to determine if there was a relationship between TAKS passing and individual students achieving the goal established for him/her by the AR system at the beginning of the school year. Individual student names remained confidential.

Limitations

This study has several limitations. This study was conducted in a single school as a sample of convenience, which represents the largest limitation to the proposed study. Expanding the study to similar school environments would help increase the generalizability of the findings.

As a teacher, the researcher teaches at ABC Elementary School where this proposed study was conducted. The researcher has seen the attitudes of students and teachers regarding the Accelerated Reader program, experienced

the frustrations of inadequate and inconsistent implementation of AR, and witnessed the students' lack of interest in recreational reading. The researcher did, therefore, have her own opinion regarding the program, which could have resulted in the researcher's bias. However, since the data used in this study were archival, there were no opportunities for researcher bias to affect the results of the study. Furthermore, there was no room for participant bias, as students were not contacted or observed. Data collected were archival, the students were not aware of the study at all.

CHAPTER FOUR

RESULTS

The purpose of this study was to investigate the impact of the Accelerated Reader Program on elementary students' reading TAKS scores in an urban predominantly Hispanic Title I school. Namely, the study investigated the relationship between the amount of time spent reading, amount of reading, average AR test scores, students' reaching AR goal in the Accelerated Reader Program, and students' reading achievement, as measured by the state high stakes standardized test, Texas Assessment of Knowledge and Skills (TAKS) test. Only those students enrolled for the entire school year were included in the data analysis. The students were in third, fourth, and fifth grade at the same primary school located in an urban southwest Texas. ABC Elementary School is a public kindergarten through fifth grade school located in an urban area in southwest Texas. The study used quantitative data from two sources: Texas Assessment of Knowledge and Skills (TAKS) reading test and the Accelerated Reader (AR) software database. Statistical Package for the Social Sciences (SPSS) software was used for data analysis. In this chapter, the results of the data analysis are presented.

Demographic Analysis

SPSS 17.0 for Windows was used for the purpose of data analysis in this study. First, descriptive statistics were computed for demographic characteristics of participants for better understanding of the population being

studied. Table 1 presents information of students' grade levels, labels, ethnicity, gender, and socioeconomic status.

Table 1. Demographic Characteristics of Participants in 2008 ($N = 393$).

Characteristic	<i>n</i>	%
Grade Level in 2008		
Second	103	26.2
Third	96	24.4
Fourth	101	25.7
Fifth	93	23.7
Students' Labels		
Regular	140	35.6
LEP	253	64.4
At Risk	297	75.6
GT	46	11.7
Socio Economic Status		
No Free Meal	46	11.7
Reduced Meal	52	13.2
Free Meal	295	75.1
Gender		
Boys	201	51.1
Girls	192	48.9
Ethnicity		
Asian	1	.3
African American	6	1.8
Hispanic	370	94.1
White	16	4.1

Note. LEP: Limited English Proficiency. GT: gifted & talented students.

As seen from Table 1, 377 (96%) participants are minorities, of which 370 (94.1%) are Hispanic students. More than 88% are low socio economic status. More than three quarter of students are at-risk students, and 253 (64%) are LEP students. Among those students, there were 201 boys (51.1%) and 192 (48.9%) girls.

Descriptive Analysis

Descriptive statistics were computed for all the key indicators established by the Accelerated Reader Program, namely, Engaged Time in reading, amount of reading and students' reaching of the AR goal, and the TAKS scores, which measure the students' reading achievement. Table 2 presents the mean, median, mode, range, minimum, maximum and standard deviations for each variable.

Table 2. Descriptive Statistics for AR Engaged Time, AR Points Earned, and TAKS Reading Scores for All 3rd, 4th, and 5th Grade Students

	<i>M</i>	<i>SD</i>	<i>Min</i>	<i>Max</i>	<i>Range</i>
AR Engaged Time 2009	36.93	22.71	3.00	110.00	107.00
AR Points Earned 2009 **	53.57	35.41	3.60	176.90	173.30
AR Average Scores 2009***	80.94	11.11	50.00	98.60	48.60
TAKS Reading 2009****	2268.95	167.86	1975	2736.00	761.00
AR Engaged Time 2008*					
AR Points Earned 2008	42.25	31.78	0	151.00	151.00
TAKS Reading 2008	2281.18	149.04	1834.00	2616.00	782.00
AR Average Scores 2008	82.39	8.69	52.00	98.00	46.00

Note:

*AR Engaged time is a new indicator of Accelerated Reader program which started in 2009; therefore no data were available for 2008.

** AR Points earned by the number of books read, a picture book worth 0.5 points.

***AR Average Scores are the average scores of AR tests; it ranges from 0 to 100.

****TAKS Reading Test scores are the scale scores; they ranges from 1313 to 2736 where as 2100 is met standard score and 2400 is commended score.

The interpretation of the data based on Table 2 provided information about the variability of the participants' reading practices and their reading achievement, and thus in teachers' implementation levels of the AR Program.

AR Reading practice indicators such as AR Engaged Time ranged from an average of 107.00 minutes ($SD = 22.71$) with some students reading an average of only 3 minutes per day for the entire school year versus some other students reading 110 minutes per day. The AR Points scores are earned based on the calculation of how many books a student read and the number of the AR tests taken. The AR Points Earned, similarly, has a very large range. It ranged from an average of 53.57 points ($SD = 35.41$), when some students earned an average of only 3.6 AR points, versus some other students earned 176.90 AR points for the entire school year. If simply translating these AR points into the number of the books read, 3.6 AR points means that the student read 7 picture books and got 100% correct for the entire school year, whereas 176.90 AR points means that the student read more than 365 picture books for the entire school year.

Students' reading achievement, as measured by the Texas Assessment of Knowledge and Skills (TAKS) reading test scores used in this study is scale scores. The basic score on any test is the raw score, which is simply the number of questions correctly answered. Unlike raw scores, scale scores can be interpreted across different sets of test questions. Scale scores allow direct comparisons of student performance between specific sets of test questions from different test administrations. A scale score is a conversion of the raw score onto a scale that is common to all test forms for that assessment. The scale score takes into account the difficulty level of the specific set of questions on which it is based. It quantifies a student's performance relative to the passing standards or proficiency levels. To better understand the scale scores, The Texas

Assessment of Knowledge and Skills (TAKS) raw score conversion tables listed below in Table 3 shows the raw scores and the corresponding scale scores for 4th grade reading assessment during Spring 2008 and Spring 2009 (TEA, 2011).

Table 3. Texas Assessments of Knowledge and Skills Fourth Grade Reading Tests Raw Score Conversion Table for Spring 2008 and Spring 2009

Administration

Raw Score 2008	Scale Scores 2008	Raw Score 2009	Scale Scores 2009
0	1313	0	1311
1	1445	1	1442
2	1541	2	1538
3	1600	3	1596
4	1643	4	1640
5	1678	5	1675
6	1708	6	1705
7	1734	7	1731
8	1758	8	1755
9	1780	9	1777
10	1800	10	1797
11	1819	11	1816
12	1837	12	1835
13	1855	13	1852
14	1872	14	1869
15	1888	15	1885
16	1904	16	1901
17	1920	17	1916
18	1935	18	1932
19	1951	19	1947
20	1966	20	1962
21	1981	21	1977
22	1997	22	1993
23	2012	23	2008
24	2039	24	2024
25	2044	25	2040
26	2069	26	2056
27	2077	27	2073
28	2100 *	28	2100 *
29	2113	29	2108
30	2132	30	2128
31	2152	31	2148
32	2173	32	2170
33	2197	33	2194
34	2223	34	2220
35	2253	35	2250
36	2288	36	2285
37	2331	37	2329
38	2400 **	38	2400 **
39	2484	39	2483
40	2616	40	2616

* Met Standard level

** Commended Performance level

As shown in Table 3, in Spring 2008, 4th grade TAKS scale scores ranged from 1313 if a student got zero questions (0%) correct to 2616 if a student got 40 questions (100%) correct. In Spring 2009, TAKS scale scores ranged from 1311 if a student got none of the questions (0%) correct to 2616 if student got all 40 questions (100%) correct. Passing scores indicate that students met the TAKS standard for 4th grade students TAKS reading scores, which is 2100 with 28 out of 40 questions (70%) correct for both 2008 and 2009 school year. The scale score of 2400, with 38 out of 40 questions (95%), needed for both years to be performing at commended level in their reading TAKS tests. Scale scores differ among grade levels as well. For example, fifth grade reading TAKS test scale scores ranges from 1173 for a student who got none of the questions (0%) correct, to 2712 when students got all questions (100%) correct in Spring 2009. In this study, Table 2 showed that TAKS reading scale scores with mean of 2268.95 ranged from minimum score of 1975 to maximum score of 2736, with a standard deviation of 167.86. Similar wide range is shown in Table 2 of students' TAKS reading scores in Spring 2008, it had a mean of 2281.8, and it ranged from a minimum score of 1834 to a maximum score of 2616, with standard deviation of 149.04.

Correlational Analysis

To address the research questions posed for this study, Pearson correlation coefficients were calculated to examine how the independent variables (AR Engaged Time, AR Goal reached, AR Points Earned, and

students' reading level at beginning of the school year) were related to the dependent variables (TAKS reading scores). The correlations, means, and standard deviations of the variables are summarized in Table 3 and Table 4 for Spring 2008 and Spring 2009, respectively.

Table 3. Correlations, Means and Standard Deviations among AR Engaged Time, AR Goal, AR Points, and TAKS Reading Scores ($N = 263$) in 2009

Variable	AR Engaged Time	AR Percent Correct	AR Goal Reached	AR Points Earned	TAKS	<i>M</i>	<i>SD</i>
AR Engaged Time	--					38.75	27.38
AR Percent Correct	.48**	--					
AR Goal Reached	.52**	.49**	--				
AR Points Earned	.90**	.48**	.57**	--		53.57	35.41
TAKS	.39**	.48**	.72***	.42**	--	2268.95	167.86

** . Correlation is significant at the 0.01 level.

*** Phi coefficient of correlation (AR goal reached is a dichotomous variable).

As evident in Table 3, all relationships were positive, which means that an increase in the value of one variable is accompanied by a simultaneous increase in the value of another.

Table 4. Correlations, Means and Standard Deviations among AR Engaged Time, AR Goal, AR Points, and TAKS Reading Scores ($N = 252$) in 2008

Variable	AR Engaged Time*	AR Percent Correct	AR Goal Reached	AR Points Earned	M	SD
AR Engaged Time*	--					
AR Percent Correct	--	--			82.39	8.69
AR Goal Reached	--	.36**	--		.52	.500
AR Points Earned	--	.30**	.57**	--	42.25	31.78
TAKS	--	.42**	.73***	.33**	2281.18	149.04

* AR Engaged Time is a new component of AR in 2009, not available in 2008

** Correlation is significant at the 0.01 level.

*** Phi coefficient of correlation (AR goal reached is a dichotomous variable).

As evident in Table 3 and Table 4, all relationships were positive, which means that an increase in the value of one variable is accompanied by a simultaneous increase in the value of another.

Research Question 1

Is there a relationship between students' reading TAKS test scores and time spent in reading, as measured by the AR Engaged Time system?

The focus of this research question was to investigate the relationship between AR Engaged Time and students' reading achievement, as measured by the TAKS Reading test among 263 students (this includes the exact number of students 3rd, 4th, and 5th graders in 2009). A Pearson r test was used to determine if there was a significant relationship between the AR Engaged Time and the students' Spring 2009 TAKS reading scores. The data showed that AR Engaged

Time had a mean of 38.75 minutes per day for students with standard deviation of 27.38. There was a low to moderate positive correlation ($r = .39$, $p < .01$), and coefficient of determination r -squared = .15. In other words, on the average, the more time students spent on reading, the higher their TAKS reading score tends to be. However, the Engaged Time variable explains only 15% of the variance in the variation of TAKS-Reading. There was no AR Engaged Time data available to analyze in 2008 due to the fact that the AR Engaged Time component was added to the AR report by the Renaissance Learning, Inc. after 2008.

Research Question 2

Is there a relationship between students' reading TAKS test scores and amount of reading, as measured by the AR points system?

The second goal of this study was to investigate how the amount of reading was related to students' reading achievement. More specifically, it was of interest to assess the question of whether the more books students read the better readers they become. A Pearson r test was used to determine if there was a significant relationship between the AR points earned by students in the Spring 2008 and 2009, and the TAKS reading scores. As evident in Table 3, amount of reading (AR points) in 2009 and reading TAKS test score were positively correlated at a statistically significant level ($p < .01$) with the correlation coefficient of .33. Such a low to moderate correlation suggested that the AR points were moderately correlated with the TAKS reading scores (M

=53.37, $SD = 35.41$). However, the AR Points variable explains only 11% of the variance in the variation of the TAKS-Reading in 2009 with coefficient of determination r -squared = .11. As evident in Table 4, amount of reading (AR points) in 2008 and reading TAKS test scores were positively correlated at a statistically significant level ($p < .01$). The results showed that amount of reading (AR points) in 2008 was moderately correlated ($r = .42$, $p < 0.01$) with reading achievement, with a mean of 42.35 points ($SD = 31.78$). In other words, the more books students read, the higher their reading achievement scores tends to be.

Research Question 3

Is there a relationship between students' reading TAKS test scores and the average percent correct on AR tests?

The average percent correct on AR tests was compared to the TAKS reading scores with a Pearson r test to determine if there was a significant relationship between these two variables. The data showed a low to moderate correlation ($r = .42$, $p < 0.01$) with the coefficient of determination r -squared = .18 in 2008, and a low to moderate correlation ($r = .48$, $p < 0.01$), with coefficient of determination r -squared = .23 in 2009. In other words, on the average, the higher the average percent correct on AR tests, the higher their TAKS reading score tends to be. However, the average percent correct on AR tests variable explains only 18% of the variance in the variation of TAKS-

Reading in 2008 and 23% of the variance in the variation of TAKS-Reading in 2009, which represents in both cases a small multivariate effect size.

Research Question 4

Is there a relationship between the students' reading TAKS test scores and an individual student's achieving the goal established for him/her by the AR system?

Of equal importance was to investigate how much students should read in order to meet the TAKS standards. Matthew Effect clearly states that the more students read, the better readers they become. However, how much more reading is required for students to become "better readers"? The results from the correlational analysis showed that the AR goal reached was positively correlated with the students' reading achievement ($r = .73$) in 2008 and ($r = .72$) in 2009, which indicated the stronger degree of relation to reading achievement among four variable tested in this study. When we examined the data more closely over the period of two years, we found very provocative results.

Namely, 100% of the students who did not pass TAKS-Reading also did not reach their AR Goal. As shown in Table 4, for example, in 2008 out of more than 300 students, 17 students who did not pass TAKS reading (across the three grade levels) also did not reach their AR goal. Similarly, in 2009, out of more than 300 students, 34 who did not pass TAKS-Reading (across the three grade levels) also did not reach their AR goal. "Matthew Effect" states that the more

the student reads, the better reader he or she will become (Krashen, 2003; Pilgreen, 2000; Stanovich, 1986).

Table 5. Descriptive Statistics for Students who failed TAKS Test in two years (2008-2009).

Standardized Measures	<i>M</i>	<i>SD</i>
Reading Level 2008 (N=17)	1.87	.87
AR Points Earned 2008 (N=17)	17.40	9.61
AR Goal Reached 2008 (N=17)	.00	.00
Reading Level Test 2009 (N=34)	2.54	.96
AR Points Earned 2009 (N = 34)	27.46	18.49
AR Goal Reached 2009 (N=34)	.00	.00
AR Engaged Time 2009 (N=34)	20.29	12.94

In addition, in 2008, the average beginning reading level of the 17 students who failed TAKS was only 1.87 ($SD = .87$), as compared to the norm (4.00). In other words, these third graders could only read at the first grade eighth month level on average. In 2009, 34 fourth graders failed the TAKS reading test, and their average beginning reading level was only 2.54 ($SD = .96$). That means, they could only read at the second grade fifth month level on average. Both groups of students underperformed on the beginning tests. In addition, both of these groups of students did not reach the AR goals, which were interpreted as one reason for their failure on the TAKS reading test.

The students who failed TAKS test in 2008 and 2009 were poor readers by any standard. Matthew Effect state that better readers will read more,

therefore their reading level will improve (Stanovich, 1986). In contrast, poor readers may read less, and further fall behind in their reading levels.

Table 6. Descriptive Statistics of students who passed 2008 and 2009 TAKS with 1.31 beginning reading level

Standardized Measures	<i>M</i>	<i>SD</i>
Reading Level 2008 (<i>n</i> = 46)	1.31	.52
AR Points Earned 2008 (<i>n</i> = 46)	31.10	22.62
AR Goal Reached 2008 (<i>n</i> = 46)	.47	.50
Reading Level Test 2009 (<i>n</i> = 103)	1.86	.52
AR Points Earned 2009 (<i>n</i> = 103)	44.02	25.46
AR Goal Reached 2009 (<i>n</i> = 103)	.47	.50
AR Engaged Time 2009 (<i>n</i> = 103)	37.17	21.32

On the other hand, the study examined TAKS test passing rates for those students whose beginning reading level was 1.87 or less in 2008, and 2.54 or less in 2009. As shown in Table 6, in 2008, a total of 46 students passed TAKS finally, but interestingly, their average beginning reading level was only 1.31 (*SD* = .52), which was even lower than that of the 17 students who failed TAKS in the same year. In 2009, a total of 103 fourth graders passed TAKS, finally. In a similar fashion, their average beginning reading level was only 1.86 (*SD* = .56), which was also lower than that of the 34 who failed TAKS in the same year. However, despite their low performance at the outset, they caught up

eventually and passed TAKS in the end. One reason for this might be that both groups of students read extensively throughout the corresponding academic years, as evident in their AR points and engaged time scores. This finding suggests that students who strive to reach the designated AR goals are more likely to pass or even excel on TAKS.

Summary

The purpose of this study was to investigate the impact of the Accelerated Reader Program on the elementary students' reading TAKS scores in an urban, predominantly Hispanic Title I elementary school. This research study was designed to determine whether the amount of time students spend on reading, amount of reading, average AR scores, and students' reaching their AR goal in the Accelerated Reader Program have significant impact on students' reading achievement as measured by the TAKS reading scores. The study used quantitative data from two sources: Texas Assessment of Knowledge and Skills (TAKS) reading test scores and the Accelerated Reader (AR) software database. The correlational design was utilized to investigate if there was a relationship between AR Engaged Time and TAKS reading test scores; AR Points and TAKS reading test scores; AR Average scores and TAKS reading scores; and AR Goals and TAKS reading scores. Chapter Five presents a summation of the findings in this study, as well as implications for further research on Accelerated Reader.

CHAPTER FIVE

DISCUSSION AND CONCLUSIONS

Chapter Five presents a discussion of this study, with a review of the conclusions from the statistical data. In addition, there are implications for the Accelerated Reader program implementations as well as further research on Accelerated Reader program.

Reading is important because it is a part of our everyday life. It is generally accepted that reading skills are an essential key to learning, and it spans all academic subjects. Reading is recognized as a skill foundation for virtually all learning (Ahitaker, Gambrell, & Morrow, 2004). It is the foundation from which all subjects are built. Declines in reading progress have demonstrable social, economic, cultural, and civic implications. More and more Americans, especially young Americans, read less, and they read less well. Because of it, they have lower levels of academic achievement. Thus, poor reading skills correlate with lower levels of financial and job success (National Endowment for the Arts, 2007).

However, “Matthew Effect” has provided support for the phenomenon “the more students read, the better reader they become” (Stanovich, 1986, p. 36). Reading daily overwhelmingly correlates with better reading skills and higher academic achievement. With the advent of more reading programs and federal initiatives, such as No Child Left Behind, more than ever, reading is the major focus in elementary classrooms, more so than at any other academic level.

With the adoption of the No Child Left Behind Act of 2001, administrators and educators are held accountable for the reading abilities of every student in the school. They must find a quick and effective solution to the problem of raising student achievement. The Accelerated Reader Program (Renaissance Learning, Inc.) appears to provide the solution the schools need, particularly in the area of improving students' reading comprehension achievement. Renaissance Learning, Inc. claimed that AR program can make all of the students' reading problems disappear. As the result, more than 75,000 schools have purchased this program (Renaissance Learning, Inc. www.relearn.com, retrieved on September 15, 2009).

Most research for AR has been on readers in regular schools (Facemire, 2000; Holman, 1998; Johnson & Howard, 2003; Knox, 1996; Melton et al., 2004; Morse, 1999; Nunnery, et al., 2006; Pavonetti et al, 2000; Spradley, 1998). However, very little objective information can be found regarding the effectiveness of the Accelerated Reader Program when used for minority students of low socioeconomic status.

For this reason, and because of an increased emphasis in raising test scores, it was important to investigate the effectiveness of AR on Title I schools' students' reading achievement. The schools are now accountable for students' ability to read more than ever, with the increase in state and district testing.

Even though ABC Elementary School purchased the AR Program in 1999, just like in the rest of the country, school wide systematic

implementation had been varied. Each classroom teacher implemented the program according to his or her preference. There was no consistency in the way the program was implemented. One of the main reasons in the variation of how the program was implemented was the lack of empirical evidence of correlation between major components of AR and the students' reading comprehension. Therefore, the purpose of this study was to investigate the impact of the Accelerated Reader Program on the elementary students' reading TAKS scores in an urban, predominantly Hispanic Title I elementary school. This research study was designed to determine whether the amount of time students spend on reading, amount of reading, average AR scores, and students' reaching their AR goal in the Accelerated Reader Program have a correlation with the significant impact on students' reading achievement, as measured by their TAKS reading scores. The study used quantitative data from two sources: Texas Assessment of Knowledge and Skills (TAKS) reading test scores and the Accelerated Reader (AR) software database. The correlational design was utilized to investigate if there is a relationship between AR Engaged Time and TAKS reading test scores; AR Points and TAKS reading test scores; AR Average scores and TAKS reading scores; and AR Goals and TAKS reading scores.

Discussions of Findings

Research Question 1

Is there a relationship between students' reading TAKS test scores and time spent in reading, as measured by the AR Engaged Time system?

The data showed a low to moderate correlation between the two variables. In other words, on the average, the more time students spend on reading, the higher their TAKS reading score tends to be, and the Engaged Time variable explains some of the variance in the variation of TAKS-Reading. Thus, our study provides a partial support for the “Matthew effect” in reading (Stanovich, 1986), and also corroborates Marshall (2002) study’s findings in which she found positive benefits of independent reading time on the students’ reading achievement. It also supports the proposition that lack of sufficient time spent on reading is problematic for students whose language and literacy skills are weak (Nippold, Duthie, & Larsen, 2005). These results did agree with the findings of many researchers, including Pikulski and Chard (2005) who found “substantial correlational evidence” showing the relationship between reading comprehension and the amount of time students read (p. 517). In addition, it did substantiate Topping and Paul’s (1999) suggested correlation between the amount of reading practice and higher reading ability.

Our study did not support several other previous studies’ findings that there was no statistically significant relationship between the time spent in AR program and reading achievement of students (e.g., Camarata, 2002; Ceprano,

2002; Mathis, 1996). Overall, previous findings appear to be conflicting and inconclusive.

What teachers should keep in mind is that not only students should read for enjoyment or the AR points; they should also learn to read for comprehension (Guth & Heaney, 1998). After all, the purpose of reading is to comprehend what is read. This is something that the AR program alone cannot offer.

Research Question 2

Is there a relationship between students' reading TAKS test scores and amount of reading, as measured by the AR points system?

Allington (2006) stated that “higher achieving” students read three times as much per week in school as the “lower achieving” students (p. 36). The study found a direct positive correlation between the AR points and TAKS reading scores. In other words, the more books students read, the higher their reading achievement scores tend to be. Thus, this study once again provides a partial support for the “Matthew effect” in reading (Stanovich, 1986). Similar conclusion was also reached by Campbell and Flageolle (2002). In his study of Title I school students, Flageolle found a direct correlation between the average number of books read and the average change in grade equivalent reading levels. Contrary to this study, Sadusky and Brem (2002) found no evidence that the number of AR books read was directly related to gains on the SAT 9, which

would test a variety of reading skills. Additionally, Bulloch's (2005) dissertation showed that elementary school students in the AR group did not out-perform those in the control group on the STAR Reading Test.

Research Question 3

Is there a relationship between the students' reading TAKS test scores and the average percent correct on AR tests?

The ultimate goal in teaching a child to read is comprehension. Simply able to decoding the words or sounding out words without comprehension and understanding is not actually reading. Therefore, this study examined the relationship between comprehension, particularly, the average percentage correct on AR tests, and the students' scores on the TAKS Reading Test. The data showed a low to moderate positive correlation coefficient. In other words, on the average, the higher the average percent correct on AR tests, the higher their TAKS reading score tends to be. However, the average percent correct on AR tests variable explains only 18% of the variance in the variation of TAKS-Reading in 2008 and 23% of the variance in the variation of TAKS-Reading in 2009. The moderate associations may be attributed to the types of questions on AR tests. A validity study on AR quizzes showed that 97% of those who had read the book were able to pass the test with a 60% score or better; while 6% of students who had not read the book achieved 60% (Renaissance Learning, 2011). Most of the tests at the primary school level are 5 questions. It is not difficult for students to answer at least 3 of the questions correctly in order to get a passing grade of 60%. In addition, high test score averages could also be

attributed to the students' reading books below their appropriate ZPD. Students did not always adhere to their designated reading levels. The higher reading level of the book made it impossible for the student to pass the quiz. Thus, students choose books below their appropriate reading level, knowing they would be able to pass the quiz. The goal of independent reading is to read within the students' zone of proximal development (ZPD) in order to achieve optimal level. In addition, there were some students who were not computer-savvy; this may have also hindered their success when taking an AR quiz.

Research Question 4

Is there a relationship between the students' reading TAKS test scores and an individual student's achieving the goal established for him/her by the AR system?

Teachers share a common goal in trying to help students become lifelong learners who love to read. In order to achieve this, students must devote time to reading appropriate literature (Anderson, Hiebert, Scott, & Wilkinson, 1985; Lewis & Samuels, 2003; Samuels & Wu, 2004; Snow, Burns, & Griffin, 1998). However, simply setting aside time for reading is not sufficient; the time must be well spent. Teachers should ensure that students experience a high level of success in their reading practice. Key to ensuring success in reading is to personalize student practice, set goals for that practice, and provide a means to monitor progress toward those goals.

The Accelerated Reader Goal-Setting Chart (see APPENDIX C) was created to assist educators in establishing appropriate, individualized reading practice goals for each student for percent correct on AR Reading Practice Quizzes, quantity of AR points earned, and book-level ranges. However, few studies have empirically validated the goal setting chart as well as its impact on students' reading achievement.

Of equal importance in this study was to investigate how much students should read in order to meet the TAKS standards. Matthew Effect clearly states that the more students read, the better reader they become. However, how much more reading is required for students to become "better readers"? The results from the correlational analysis showed that AR goal reached was positively correlated with the students' reading achievement, which indicated the stronger degree of relation to the students' reading achievement among the variables tested in this study. When we examined the data more closely over the period of two years, we found very provocative results. Namely, 100% of the students who did not pass TAKS-Reading also did not reach their AR Goal; 100% of the students who reached their AR goals also passed their TAKS reading test. For example, in 2008 out of more than 300 students, 17 students who did not pass TAKS reading (across the three grade levels) also did not reach their AR goal. Similarly, in 2009, out of more than 300 students, 34 who did not pass TAKS-Reading (across the three grade levels) also did not reach their AR goal. This finding in the study is very significant due to the fact that reaching the AR goal has greatly impacted students' passing of the TAKS test. Not only should

teachers focus on the AR program, but also do so in a consistent manner so that the students reach their yearly goal.

Conclusion

Based on the study's findings, there were overall gains in students' reading achievement when the Accelerated Reader Program was implemented. AR program was effective for the third, fourth, and fifth grade students at the ABC Elementary School, an urban predominantly Hispanic Title I School. The results of this study demonstrated that it is possible with AR to significantly improve students' reading achievement. The review of the literature further supported the conclusion that the quantity and quality of reading are major variables that influence the students' reading achievement.

One of the major and very important finding of this study is how much students should read in order to achieve the met standard level in TAKS reading test. All the students who read and reached their AR goal at the end of the school year passed the TAKS test. This study suggests that students should at least read enough to reach their AR goal that was set by the AR Goal Setting Chart.

Another key finding with practical implications was that the most varied aspect of Accelerated Reader Program was its implementation. The data revealed that there was a wide range in the way the teachers had implemented the AR program in their classrooms, as measured by the AR Program's key program effectiveness indicators, namely, Engaged Time in reading, AR Points

AR average scores, and AR goal reached. The program allows competition between students, teams, classes or schools at the national level (Guth & Heaney, 1998). However, teacher implementation is as widespread as it is diverse in terms of classroom and campus application (Groce & Croce, 2005). Many schools take AR points as reading grades, and some may take AR percentage correct scores as reading grades. Rewards for students for their AR points earned varied; some schools may just reward students with AR stores while other rewards them with pizza party. According to a study done by Topping and Fisher (2003), more important than increased reading time to earn more AR points is the ability of teachers to closely monitor and manage the quality and quantity of individualize reading of all students for optimum effectiveness. It is important that teachers recognize their strengths and weaknesses in teaching reading, and that they do not simply follow a program because it exists and limits their need for providing reading instruction. The culprit may not be the commercial reading programs per se, but that teachers follow them submissively, unreflectively, and unresponsively, without fully understanding whether or not readers benefit from these programs (Margolis & McCabe, 2002).

In conclusion, administrators and educators must ask whether the Accelerated Reader Program and its results are worth the additional time, effort, and expense. The expenditures go far beyond purchasing the initial program. To implement the program seeking optimal results, every school must make recommendations based on the individual school's situation.

Educational Implications

Results of this study have important implications for education policy and classroom practice. To devise reading instruction that best accommodates the specific needs of Title I School students, it is imperative to first understand how the Accelerated Reader Program impacts this specific group of students. In this study, the participants were found to demonstrate a much higher level of reading achievement when they reached their AR goals at the end of the school year. Despite their beginning reading level when the AR program started at the beginning of the school year, 100% of students who reached their AR goals passed TAKS reading tests. In addition, the AR goal reached variable even surpassed the AR average percentage correct variable to explain greater variance in reading comprehension. As stated previously, all these can be attributed to the importance of amount of reading by the students. Because of the AR goal reached variable showed a stronger correlation to students' reading achievement, it would be of vital importance to capitalize on this component of the AR Program in order to optimize the AR Program's implementation. Therefore, concerted effort is recommended to help Title I school students (especially those with a low reading comprehension background) establish and reach a clear AR reading goal, as recommended by the AR Goal Setting Chart.

Attention should be paid to the fact that large variation exists with regards to how the AR program is implemented. The ultimate purpose of

reading program is more than just purchasing it and leaves up to individual teacher to implement it according their own preferences. Of greater importance is to understand how best to implement it based on the students' needs.

When the goal of reading is comprehension, being able to read fluently is critical. Comparatively, the AR average correct scores seem to provide a better alternative to explain the students' reading level as time progresses. The teachers need to adjust the students' reading ZPD so that students can gain maximum benefit from the program, so that students can read the books that are neither too easy nor too difficult. Therefore, the more students read the better reader they will become.

The following recommendations are based on the results of this study:

1. It is recommended that the ABC Elementary School continue to use the AR program to include at least of 45 minutes of reading time. This study found that all students who read and reached their AR goal passed TAKS reading tests in 2007-2008, and 2008-2009 school years.
2. It is recommended that the teachers continue to closely monitor the students' progress and to intervene when necessary in order to help all students to reach their AR goals.
3. It is recommended that the teachers consistently monitor the students' AR average scores in order to adjust students' reading ZPD.

Future Studies

This study was conducted in one single Title I elementary school, and replicating the study using a larger representative sample is recommended.

Results of the correlational analysis support the importance of the AR points, the AR Engaged Time, the AR Average Correct scores, and the AR Goals in the students' reading achievement. However, questions remain as to whether and how much valuable class time should be devoted to AR program. Additional experimental research is needed to examine if these students will have an advantage in their improving their reading comprehension through other methods of learning to read. Also, it is important to investigate if they will outperform those compared to the Accelerated Reader Program.

Another concern is that the present study only focuses on elementary Title I School students. The generalization of the results may be of concern. It would provide a better understanding of the dynamics of the AR Program if other student populations (e.g. regular students, students from affluent schools, etc) were included in the study. Comparing students with diverse linguistic, socio economic backgrounds will shed light on the differential impact of the Accelerated Reader Program on the students' reading achievement.

REFERENCES

- Abbott, J., & Ryan, T. (1999, November). Constructing knowledge, reconstructing schooling. *Educational Leadership*, 57.
- Adams, M. (1990). *Beginning to read: thinking and learning about print*. Cambridge, MA:Harvard University Press.
- Allington, R. (2002). What I've learned about effective reading instruction from a decade Of studying exemplary elementary classroom teachers. *Phi Delta Kappan*, 83, 740-747.
- Allington, R. (2006). *What really matters for struggling readers: Designing research-Based programs* (2nd ed.). New York: Pearson Education.
- Allington, R. C. (1977). If they don't read much, how they ever gonna get good? *The Reading Teacher*, 36, 556-561.
- Anderson, R., Hiebert, E., Scott, J., & Wilkinson, I. (1985). *Becoming a nation of readers: Thereport of the commission on reading*. Washington, DC: The National Institute of Education.
- Ashby, J., & Rayner, K. (2006). Literacy development: Insights from research on skilled reading. In D. Dickinson & S. Neuman (Eds.), *Handbook of early literacy research* (pp. 52-63). New York: Guilford Press.
- Bain, J., McNaught, C., Rice, M., & Trip, D. (2000) *Handbook for learning-centered Evaluation of computer-facilitated learning projects in higher education*. (R. Phillips, Ed.) Retrieved November 16, 2004, from <http://www.tlc.murdoch.edu.au/archive/cutsd99/handbook/handbook.html>.
- Barton, J., & Sawyer, D. (2003/2004, December/January). Our students are ready for this: Comprehension instruction in the elementary school. *The Reading Teacher*, 57, 334-347.
- Beck, I., & McKeown, M. (2001). Text talk: Capturing the benefits of read aloud experiences for young children. *The Reading Teacher*, 55, 10-35.
- Block, C. & Mangieri, J. (2002). Recreational reading: 20 years later. *The Reading Teacher*, 55(6), 572-580.
- Bond, D., & Dykstra, R. (1997). The cooperative reading program in first grade reading instruction. *Reading Research Quarterly*, 32, 345-427.

- Bransford, J., Brown, A., & Cocking, R. (Eds.). (1999). [Electronic version] *How people learn: Brain, mind, experience, and school*. Washington, DC: National Academy Press. Retrieved June 16, 2005, from <http://www.nap.edu/html/howpeople>.
- Bullock, J. (2005). *Effects of the Accelerated Reader on reading performance Of third, Fourth, and fifth grade students in one western Oregon elementary school*. Doctoral dissertation, University of Oregon, 2005. (UMI No. 3181085).
- Campbell, L., & Flageolle, P. (2002, November 30). *Accelerated Reader usage and Reading proficiency scores during second grade*. Paper presented to R. D. Head Elementary staff and administration, Lilburn, GA. Retrieved January 8, 2006 from <http://home.comcast.net/~campbellfamily5/arpp.ppt#1>.
- Center for the Improvement of Early Reading Achievement. (2002, November 15). *Improving the reading achievement of America's children: 10 research-based principles*. Retrieved November 14, 2010, from <http://www.ciera.org/library/instrsrc/principles>.
- Clay, M. (1993). *An observation survey of early literacy achievement*. Auckland, New Zealand: Heinemann Education.
- Coleman, J. (2007). Response to Intervention: What does it really mean? *Northern Ohio Special Education Regional Resource Center, 6*(2), 7.
- Collins, C. (1980). Sustained silent reading periods: Effects on teachers' behaviors and students' achievement. *The Elementary School Journal, 81*, 110–114.
- Coles, G. (1998). No end to the reading wars. *Education Week*. Retrieved December 19, 2010, from <http://www.edweek.org/ew/vol-18/14coles.h18>.
- Cooper, J. (2000). *Literacy: Helping children construct meaning*. New York: Houghton Mifflin.
- Cowen, J. (2003). *A Balanced approach to beginning reading instruction*. Newark, DE: International Reading Association.
- Cunningham, A., & Stanovich, K. (1998). What reading does for the mind. *Journal of Direct Instruction, 1*(2), 137-149.

- Daley, R. (1996, May). *Strengthening public schools in America's cities: An agenda for action*. Retrieved April 22, 2010, from http://www.usmayors.org/USCM/this_week_with_mayors/documents/strengthening_public_schools.
- Davenport, P., & Anderson, G. (2002). *Closing the achievement gap: No excuses*. Houston, TX: American Productivity and Quality Center.
- Dickman, G. (2006). *RTI and reading: Response to intervention in a nutshell. Perspectives on Language and Literacy, Special Conference Edition*. International Dyslexia Association: Baltimore, MD.
- Diehl, H. (2005, September). Snapshots of our journey to thoughtful literacy. *The Reading Teacher, 59*, 56-69.
- Duke, N. (2001). *Developing reading comprehension grades k-2*. Ann Arbor, MI: Center for the Improvement of Early Reading Achievement.
- Duke, N. K. (2000a). 3.6 minutes per day: The scarcity of informational texts in first grade. *Reading Research Quarterly, 35*, 202–225.
- Duke, N. K. (2000b). For the rich it's richer: Print experiences and Environments offered to children in very low and very high-socioeconomic status first-grade classrooms. *American Educational Research Journal, 37*, 441–478.
- Durkin, D. (1978). What classroom observations reveal about reading comprehension instruction. *Reading Research Quarterly, 14*, 481–533.
- Duke, N., & Pearson, D. (2002). Effective practices for developing reading comprehension. In A. Farstrup, J. Samuels (Ed.), *What research has to say about reading instruction* (pp. 205-242). Newark, DE: International Reading Association.
- DuVall, K. (2002). *Increasing student achievement through the use of a reading strategy: Accelerated Reader*. [Action research project]. Retrieved June 1, 2010, from http://chiron.valdosta.edu/are/abstracts_volno2/PDF%20article%20manuscript/devallk.pdf
- Dyson, A. H. (1984). Learning to write/learning to do school: Emergent writers' interpretations of school literacy tasks. *Research in the Teaching of English, 18*, 233–264. *Literacy Teaching and Learning Volume 11, Number 1*

- Ehritaker, L., Gambrell, A. & Morrow, D.S. (1991). Development of the ability to read words. In R. Barr, M.
- Facemire, N. (2000). The effect of the Accelerated Reader on the reading comprehension Scores of third graders. Master's thesis, Salem-Teikyo University. (Electronic Data Resources Service, No. 442097)
- Flesch, R. (1955). *Why Johnny can't read*. New York: Harper and Row.
- Flora, S., & Flora, D. (1999). Effects of extrinsic reinforcement for reading during childhood on reported reading habits of college students. *The Psychological Record*, 49, 3-14.
- Flynt, E. S., & Cooter, R. B. (2004). *Flynt-Cooter Informal Reading Inventory*. Pearson Merrill-Prentice-Hall.
- Fountas, I. & Pinnell G. (1996). *Guided reading: Good first teaching for all children*. Portsmouth, NH: Heinemann.
- Freppon, P. A. (1991). Children's concepts of the nature and purpose of Reading in different instructional settings. *Journal of Reading Behavior*, 23, 139-163.
- Fuchs, D., & Fuchs, L. (2005). Responsiveness-to-intervention: A blueprint for practitioners, policymakers, and parents. *Teaching Exceptional Children*, 38(1), 57-61.
- Gall, M., Gall, J., & Borg, W. (2003). *Educational research* (7th ed.). New York: Pearson Education.
- Gambrell, L., Block, C., & Pressley, M. (2002). (Eds.), *Improving comprehension instruction: Rethinking research theory, and classroom practice*. San Francisco, CA: Jossey-Bass.
- Gay, L., & Airasian, P. (2003). *Educational research: Competencies for analysis and Application* (7th ed.). Upper Saddle River, NJ: Pearson Education.
- Good, R., & Kaminski, R. (2002). *DIBELS*. Retrieved July 1, 2006, from <http://www.dibels.org/dibels.html>.

- Goodman, G. (1999). *The Reading Renaissance/Accelerated Reader program-Pinal County School-to-Work evaluation report*. (ERIC Electronic Data Resources Service, ED 427299).
- Greaney, V. (1980). Factors related to amount and type of leisure time reading. *Reading Research Quarterly*, 15, 337-357.
- Griffith, L., & Rasinski, T. (2004, October). A focus on fluency: How one teacher Incorporated fluency with her reading curriculum. *The Reading Teacher*, 58, 126-137.
- Grigg, W., Daane, M., Jin, Y., & Campbell, J. (2003, June). *The Nation's report card: Reading 2003* (2003521). Retrieved February 20, 2010, from <http://nces.ed.gov/pubsearch/pubinfo.asp?pubid=2003521>.
- Guthrie, J. (2004). Teaching for literacy engagement. *Journal of Literacy Research*, 36(1), 1-28.
- Harrell, L. (2004). *The impact of Writers Workshop on reading achievement in kindergarten*. Unpublished doctoral dissertation, Argosy University: Sarasota, FL.
- Hart, B., & Risley, T. R. (1995). *Meaningful differences in the everyday experiences of young children*. New York: Paul H. Brooks Publishers.
- Heyne, B. (1978). *Summer learning the effect of schooling*. New York: Academic Press
- Hoffman, J. (2001). How do I create a literacy-rich text environment for children? In *Teaching every child to read* series. Ann Arbor, MI: Center for the Improvement of Early Reading Achievement.
- Homan, S. P., Klesius, J. P., Hite, C. (1993). Effects of repeated readings and nonrepetitive strategies on students' fluency and comprehension. *Journal of Educational Research*, 87, 94-99.
- Howard, C. (1999). *An evaluation of the Accelerated Reader Program in grades 3-5 on Reading vocabulary, comprehension, and attitude in an urban southeastern school district in Virginia*. Doctoral dissertation, Old Dominion University, 1999. (ERIC Document Reproduction Service No. ED465987).
- Institute for Academic Excellence. (1997). *Great ways to motivate students to read* [Brochure].Madison, WI.

- International Reading Association. (2000). *Making a difference means making it different: Honoring children's rights to excellent reading instruction*. Retrieved July 2, 2010, from http://www.reading.org/resources/issues/positions_rights.html.
- International Reading Association. (2005). IDEA legislation adds response to Intervention component. *Reading Today*, 22(6), 22.
- Jody, M., & Saccardi, M. (1998). *Using computers to teach literature: A teacher's guide* (2nd ed.). Urbana, IL: National Council of Teachers of English.
- Jones, A. & Coody, K. (2001). *Georgia school achieves national Title I Distinguished School Award with Renaissance*. Madison, WI: School Renaissance Institute.
- Juel, C. (1988). Learning to read and write: A longitudinal study of 54 children from first through fourth grades. *Journal of Educational Psychology*, 80(4), 437-447.
- Kambarian, V. (2001). *The role of reading instruction and the effect of a reading Management system on at-risk students*. Doctoral dissertation, Saint Louis University. (ERIC Document Reproduction Service No. ED461 835).
- Key, J. (1997). *Qualitative research*. Retrieved December 4, 2004, from <http://www.okstate.edu/ag/agedcm4h/academic/aged5980a/5980/newspage21.htm>.
- Kismaric, C. & Heiferman, M. (2004). *Growing up with Dick and Jane: Learning and living the American dream*. New York: Scott Foresman.
- Knapp, M. S. (1995). *Teaching for meaning in high-poverty classrooms*. New York: Teachers College Press.
- Kohn, A. (1999). *Punished by rewards: The trouble with gold stars, incentive plans, A's, praise, and other bribes*. New York: Houghton Mifflin.
- Koeller, D. (1998). *Using historical sources*. Retrieved October 9, 2003, from <http://campus.northpark.edu/history//Classes/Basics/UsingSources.html>.
- Krashen, S. (2002). Accelerated Reader: Does it work? If so, why? *School Libraries in Canada*, 22(2), 24-26, 44.

- Kuhn, M., & Stahl, S. (2003). Fluency: A review of developmental remedial practices. *The Journal of Educational Psychology, 95*, 1-19.
- Lareau, A. (2000). *Home advantage: Social class and parental intervention in education*. New York: Rowman and Littlefield.
- Leinhart, G. (1985). Instructional time: A winged chariot? In C. Fisher, & D. Berliner (Eds.), *Perspectives on instructional time*. New York: Longman.
- Marshall, J. C. (2002). *Are they really reading? Expanding SSR in the middle grades*. Stenhouse Publishers.
- Mason, J. M. (1984). Early reading from a developmental perspective. In P. D. Pearson, R. Barr, M. L. Kamil, & P. Mosenthal (Eds.), *Handbook of reading research, volume one*. New York: Longman.
- Mathis, D. (1996). The effect of the Accelerated Reader program on reading comprehension. Illinois. (ERIC Document Reproduction Service No. ED398555)
- McIntyre, E. (1992). Young children's reading behaviors in various classroom contexts. *Journal of Reading Behavior, 24*(3), 339–371.
- McIntyre, E. & Freppon, P. A. (2003). A comparison of children's Development of alphabetic knowledge in a skills-based and a whole language classroom. *Research in the Teaching of English, 3*91–417.
- McKeown, M., & Beck, I. (2003). Taking advantage of read-alouds to help children make sense of decontextualized language. In A. van Kleeck & E. Bauer (Eds.), *On reading books to children* (pp. 159-176). Mahwah, NJ: Erlbaum.
- McMaster, K., Fuchs, D., Fuchs, L., & Compton, D. (2005). Responding to nonresponders: An experimental field trial of identification and intervention methods. *Exceptional Children, 71*(4), 445-463.
- Melton, C., Smothers, B., Anderson, E., Fulton, R., Replogle, W., & Thomas, L. (2004). *A study of the effects of the Accelerated Reader program on fifth grade students' reading achievement growth*. Master's thesis. Mississippi College, 2004. (ERIC Document Reproduction Service No. EJ703706).
- Metametrics. (2004). *The Lexile framework for reading*. Retrieved September 6, 2006, From <http://www.lexile.com>.

- Minskoff, E. (2005). *Teaching reading to struggling learners*. Baltimore, MD: Paul H. Brookes Publishing Company.
- National Assessment of Educational Progress. (2003). *The nation's report card*. Retrieved April 22, 2010, from nces.ed.gov/nationsreportcard/reading/results2003.
- National Center to Improve the Tools of Educators (1996). *Learning to read is important*. Retrieved April 24, 2007, from www.umich.edu/~mserve/areads/consider/whyjoin.html.
- National Institute of Child Health & Human Development. (2000). *Report of the National Reading Panel: An evidence-based assessment of the scientific research literature on reading and its implications for reading instruction*. Bethesda, MD: NICHD Clearinghouse.
- Newsome, F. (2005). Supplemental instruction in early reading: Does it matter for struggling readers? *Journal of Educational Research, 99*(2), 99–107.
- No Child Left Behind Act of 2001. (2002, January 8). Pub. L. No. 107-110, 115 Stat. 1425. Retrieved December 30, 2008, from <http://www.ed.gov/nclb/choice/schools/privbenefits/benefitstops.pdf>
- O'Connor, R. (2000). Increasing the intensity of intervention in kindergarten and first grade. *Learning Disabilities Research, 15*(1), 43-54.
- Opitz, M., & Rasinski, T. (1998). *Good-bye round robin: 25 effective oral reading strategies*. Portsmouth, NH: Heinemann.
- Ormrod, J. (2004). *Human learning* (4th ed.). Upper Saddle River, NJ: Pearson Education.
- Palincsar, A., & Brown, A. (1984). Reciprocal teaching of comprehension-fostering and comprehension-monitoring activities. *Cognition and Instruction, 2*, 177-175.
- Pardo, L. (2004, November). What every teacher needs to know about comprehension. *The Reading Teacher, 58*, 272-279.
- Partnership for Reading, National Institute for Literacy, National Institute of Child Health and Human Development, & U.S. Department of Education (2001). *Put reading first*. Center for the Improvement of Early Reading. Jessup, MD: National Institute for Literacy.

- Paul, Terrance (1996). *Patterns of reading practice*. [Brochure] Madison, WI: Institute For Academic Excellence.
- Paul, T. D. (1993). *How to create world champion readers*. Madison, WI: Institute for Academic Excellence.
- Paul, T., Swanson, S., Zhang, W., & Hehenberger, L. (1997). *Learning Information System effects* Madison, WI: Advantage Learning Systems. (ERIC Document Reproduction Service No. ED 421 686).
- Paul, T., VanderZee, D., Rue, T., & Swanson, S. (1996). *Impact of the Accelerated Reader technology-based literacy program on overall academic achievement and school attendance*. University of Georgia and University of Maryland: National Reading Research Center (ERIC Document Reproduction Service No. ED 421 684).
- Pearson, P., & Gallagher, M. (1983). The instruction of reading comprehension. *Contemporary Educational Psychology*, 8.
- Perie, M., Grigg, W., & Donahue, P. (2005, October). *The Nation's report card: Reading 2005*. Retrieved February 22, 2010, from <http://nces.ed.gov/pubsearch/pubinfo.asp?pubid=2006451>.
- Pikulski, J., & Chard, D. (2005, March). Fluency: Bridge between decoding and reading comprehension. *The Reading Teacher*, 6, 510-519.
- Pinnell, G. & Fountas, I. (1998). *Word matters: Teaching phonics and spelling in the reading/writing classroom*. Portsmouth, NH: Heinemann.
- Popham, J. (1999). Why standardized tests don't measure educational quality. *Educational Leadership*, 56(6), 8-15.
- Popham, J. (2005/2006). The reauthorization rumble. *Educational Leadership*, 80(4), 83-84.
- Pavonetti, L. M., Brimmer, K. M., & Cipielewski, J. F. (2002-2003). *Accelerated reader: What are the lasting effects on the reading habits of middle school students exposed to Accelerated Reader in elementary grades?* *The Reading Teacher*, 46, 300-310.
- Pratt, M. (1999). *A Study of the computerized reading management program, Accelerated Reader, and its effect on reading among primary grade students*. Dissertation Abstracts International. (UMI No. 9933056).
- Pressley, M. (2002). *Reading instruction that works: The case for balanced reading* (2nd ed.). New York: Guilford Press.

- Rasinski, T. V. (1990). Effects of repeated reading and listening-while-reading on reading fluency. *Journal of Educational Research*, 83, 147–150.
- Raphael, T. (1984). Teaching learners about sources of information for Answering comprehension questions. *Journal of Reading*, 27, 303-311.
- Reitsma, P. (1988). Reading practice for beginners: Effects of guided reading, reading-while-listening, and independent reading with computer-based speech feedback. *Reading Research Quarterly*, 22, 219–235.
- Renaissance Learning. (2010). *Home Page*. Retrieved October 10, 2010, from www.renlearn.com.
- Renaissance Learning. (2003). *Guided independent reading: an examination of the Reading practice database and the scientific research supporting guided independent reading as implemented in Reading Renaissance*. [Brochure]. Wisconsin Rapids, WI: Renaissance Learning.
- Renaissance Learning. (2003). *Now you can target instruction and ensure success*. [Catalog]. Wisconsin Rapids, WI: Renaissance Learning.
- Renaissance Learning (2006). *Accelerated Reader: understanding reliability and validity*. [Brochure]. Wisconsin Rapids, WI: Renaissance Learning.
- Reutzel, D., & Mitchell, J. (2003). The best of times and the worst of times: Reading Instruction today. *Reading Teacher* 57(1), 6-10.
- Richardson, V. (2003). Constructivist pedagogy. *Teachers College Record*, 105, 1623–1640.
- Roosevelt, E. (1930/2007). Good citizenship: The purpose of education. [Electronic version]. *Pictorial Review* 4, 94-97. Retrieved April 22, 2010, from <http://newdeal.feri.org/er/er19.htm>.
- Routman, R. (1999). *Conversations: Strategies for teaching, learning, and evaluating*. Portsmouth, NH: Heinemann.
- Routman, R. (1994). *Invitations: Changes in teachers and learners, k-12*. Portsmouth, NH: Heinemann.
- Sadusky, L., & Brem, S. (2002 September 19). *The Integration of Renaissance programs into an urban Title I elementary school, and its effect on school-wide improvement*. Retrieved May 1, 2009, from <http://www.public.asu.edu/~sbrem/>.

- Sailors, M., Worthy, J., Assaf, L., & Mast, M. (2000). *Accelerated Reader: help or hindrance to improving reading attitudes and achievement*. Retrieved April 28, 2010, from <http://ccwf.cc.utexas.edu/~funlearn/secondreview/arproposal.html>.
- Samuels, J (2003, March 21). *Two well-controlled studies that meet the federal guidelines for evidence-guided educational decisions: Accelerated Reader vs. non-accelerated reader*. Retrieved June 12, 2009, from www.tc.umn.edu/~samue001.
- Samuels, J., & Farstrup, A. (1992). Teaching the disabled or below-average reader. In J. Chall & M. Curtis (Eds.), *What research has to say about reading instruction*. (2nd ed., pp. 253-276). Newark, DE: International Reading Association.
- Samuels, J., & Wu, Y. (2004). *How the amount of time spent on independent reading affects reading achievement: A response to the National Reading Panel*. Retrieved May 20, 2010, from www.tc.umn.edu/~samue001/web20pdf/manuscript%20277-04.pdf.
- Scarborough, H. (2001). Connecting early language and literacy to later reading (dis)abilities: Evidence, theory, and practice. In S. Neuman & D. Dickinson (Eds.), *Handbook of early literacy research* (pp. 97-110). New York: Guilford Press.
- Schreiber, P.A. (1980). On the acquisition of reading fluency. *Journal of Reading Behavior*, 12, 177–198. *Literacy Teaching and Learning Volume 11, Number 1*
- Schuder, T. (1993). The genesis of transactional strategies instruction in a reading program for at-risk students. *The Elementary School Journal*, 94, 183-200.
- Scholastic Education. (2005/2006). *Scholastic Reading Counts* [Catalog]. Jefferson City, MO.
- School Renaissance Institute (1999). *Idaho Implementation of Reading Renaissance: Summary of first year's results*. Madison, WI: School Renaissance Institute. (ERIC Document Reproduction Service No. ED 449472).
- School Renaissance Institute (2000). *Great ways to motivate students to read*. [Brochure]. Madison, WI.

- School Renaissance Institute (2001). *Early literacy survey: How renaissance supports Reading Excellence Act*. Retrieved November 3, 2005, from <http://research.renlearn.com/research/75.asp>.
- Sindelar, P. T., Monda, L. E., & O'Shea, L. J. (1990). Effects of repeated readings on instructional- and master-level readers. *Journal of Educational Research*, 83, 220–226
- Smith, D., Stenner, A., Horabin, I., & Smith, M. (1989). *The Lexile scale in theory and practice: Final report*. Washington, DC: MetaMetrics. (ERIC Document Reproduction Service No.ED307577).
- Snow, C., Burns, M. Susan, & Griffin, P. (1998). *Preventing reading difficulties in young children*. Washington, DC: National Academy of Sciences.
- Stahl, K. (2004, April). Proof, practice, and promise: Comprehension strategy instruction in the primary grades. *The Reading Teacher*, 57, 598-609.
- Stahl, S., & Kuhn, M. (2002). Making it sound like language: Developing fluency. *The Reading Teacher*, 55, 582-584.
- Stanovich, K.E. (1986). Matthew effects in reading: Some consequences of individual differences in the acquisition of literacy. *Reading Research Quarterly*, 21, 360–406.
- Steele, C. (2003). *The Effectiveness of the Accelerated Reader program on the reading level of second-grade students as measured by the Student Test for Assessment of Reading*. Doctoral dissertation, Mississippi State University, 2003. (UMI No. 3080207).
- Stothard, S., & Hulme, C. (1996). A comparison of reading comprehension and Decoding difficulties in children. In C. Cornoldi & J. Oakhill (Eds.), *Reading comprehension difficulties: Processes and interventions* (pp. 92-112). Mahwah, NJ: Lawrence Earlbaum Associates.
- Strickland, D. (1998). *Teaching phonics today: A primer for educators*. Newark, DE: International Reading Association.
- Taylor, B. M., Frye, B. J., & Maruyama, G. M. (1990). Time spent reading and reading growth. *American Educational Research Journal*, 27, 351–362.

- Topping, K., & Fisher, A. (2001). *Accelerated Reader: U.K. pilot, 1999-2000*. [Summary]. Scotland: Centre for Paired Learning, University of Dundee. (ERIC Document Reproduction Service No. ED 468 244).
- Topping, K., & Paul, T. (Jul-Sept, 1999). Computer-assisted assessment of practice at reading: a large-scale survey using Accelerated Reader data. *Reading and Writing Quarterly*, 15(3), 213-232.
- Torgeson, J. (2003, December). *Operationalizing the response to intervention model to Identify children with learning disabilities: Specific issues with older children*. Kansas City, MO:National Research Center on Learning Disabilities Responsiveness-to-Intervention Symposium.
- Toro, A. (2001). *A comparison of reading achievement in second grade students using The Accelerated Reader program and independent reading*. Knoxville, TN: Johnson Bible College. (ERIC Education Reproduction Service No. ED 455 510).
- To read or not to read? That is the question*. (2004). Retrieved November 27, 2010, from <http://cms.westport.k12.ct.us/cmslmc/mystuff/Libsci/FAU/aschoollibraries/assignments/fi...>
- Tyner, B. (2004). *Small-group reading instruction: a differentiated teaching model for Beginning and struggling readers*. Newark, DE: International Reading Association.
- U.S. Department of Education. (2002). Questions and answers on No Child Left Behind-Reading. Retrieved November 22, 2003, from <http://www.ed.gov/nclb/methods/reading/reading.html>. <http://www.ed.gov/nclb/methods/reading/reading.html>.
- United States Office of Technology Assessment (1993). Adult literacy and new technologies. In American Federation of Teachers, *Teaching reading is rocket science*. (p. 9).
- Vaughn, S., Linan-Thompson, S., & Hickman, P. (2003). Response to instruction as a means of identifying students with reading/learning disabilities. *Exceptional Children*, 69(4), 391-409.
- Vetcher, J. (2000, September 28). *South Bay Union School District, Imperial Beach, California:Informational report on Accelerated Reader* Imperial Beach, CA: South Bay Union School District. (ERIC Education Reproduction Service ED 455 493).

- Vogt, M., & Shearer, B. (2003). *Reading specialists in the real world: A sociocultural view*. New York: Pearson Education, Inc.
- Vollands, S., Topping, K., & Evans, R. (1999). Computerized self-assessment of reading comprehension with the Accelerated Reader. *Reading & Writing Research Quarterly*, 15(3), 197-211.
- Vygotsky, L.S. (1978). *Mind and society: The development of higher mental processes*. Cambridge, MA: Harvard University Press.
- Westry, C. (2004). A language perspective on executive functioning, metacognition, and self-regulation strategies. In C. Stone, E. Silliman, B. Ehren, & K. Apel (Eds.), *Handbook of language and literacy: Development and disorders* (pp. 398-428). New York: Guilford Press.
- Whitehurst, G., & Lonigan, C. (2003). Emergent literacy: Development from prereaders to readers. In S. Neuman & D. Dickinson (Eds.), *Handbook of early literacy research* (1st ed., pp. 11-29). New York: Guilford Press.
- Wren, S. (2003). *Developing research-based resources for the balanced reading teacher*. Retrieved June 20, 2010, from <http://www.balancedreading.com/fluency.html>.
- Yuill, N. & Oakhill, J. (1991). *Children's problems in text comprehension: An experimental investigation*. Cambridge University Press.

APPENDIX A
HUMAN SUBJECTS APPROVAL



U N I V E R S I T Y *of* H O U S T O N

COMMITTEES FOR THE PROTECTION OF HUMAN SUBJECTS

June 15, 2009

Ms. Hasiyet Keyim
Curriculum and Instruction

Dear Ms. Keyim:

Based upon your request for exempt status, an administrative review of your research proposal entitled 'The Impact of the Accelerated Reader Program on Third, fourth, and Fifth Grade At-risk, Bilingual, ESL and Low SES Students' Reading TAKS Scores in an Urban Predominantly Hispanic Title I School' on June 15, 2009, according to institutional guidelines.

The committee has determined that your project is **exempt under category 4**.

As long as you continue this project using procedures described in this project, you do not have to reapply to this Committee for review.* Any modification of this approved protocol will require review and approval by the Committee.

If you have any questions, please contact Alicia Vargas at (713) 743-9215.

Sincerely yours,

A handwritten signature in cursive script that reads 'Chris R. Smith'.

Christopher R. Smith, CHC
Director of Research Compliance

*Approvals for exempt protocols will be valid for 5 years beyond the approval date. Approval for this project will expire **June 1, 2014**. If the project is completed prior to this date, a final report should be filed to close the protocol. If the project will continue after this date, you will need to reapply for approval if you wish to avoid an interruption of your data collection.

Protocol Number: 09321-EX

Appendix B
APPROVAL LETTER

PYBURN ELEMENTARY

12302 Coulson St.
Houston, Texas 77015
Office (832) 386-3150
Fax (832) 386-3168

Grace Devost
Principal
Conrad Rivera
Assistant Principal

Martha Martinez
Principal Secretary
Rosalina Benavides
School Secretary

May 9th, 2009
CPHS
Department of Human Subjects Research
University of Houston

To Whom It May Concern:

After reviewing the proposed study, “The Impact of the Accelerated Reader program on third, fourth, and fifth grade At-risk, Bilingual, ESL and low SES students’ reading TAKS scores in an urban predominantly Hispanic Title I school”, presented by Ms. Hasiyet Keyim, a doctoral student at University of Houston, I have granted her permission for the study to be conducted at Pyburn Elementary School.

The purpose of the study is to determine if the Accelerated Reader Program have impact on the students’ reading achievement. The primary activity of the researcher will be using the TAKS scores and accelerated data that are available to conduct the study.

If you have any concerns about the permission being granted by this letter, please contact me at 832-386-3150.

Sincerely,

Grace Devost

Grace Devost, Principal
Pyburn Elementary
Galena Park Independent School District

