ANALYSIS OF THE PRINCIPAL'S PERCEPTIONS OF THE IMPLEMENTATION AND IMPACT OF THE ACCELERATED READER AND OTHER SELECTED READING STRATEGIES USED BY TEXAS GOLD PERFORMANCE ELEMENTARY SCHOOLS

A Dissertation

by

OLIVIA CAROL ELMORE

Submitted to the Office of Graduate Studies of
Texas A&M University
in partial fulfillment of the requirements for the degree of

DOCTOR OF PHILOSOPHY

May 2005

Major Subject: Educational Administration

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Approved as to style and content by:

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ABSTRACT

Analysis of the Principal's Perceptions of the Implementation and Impact of the Accelerated Reader and Other Selected Reading Strategies Used by Texas Gold Performance Elementary Schools. (May 2005)

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Knowledge of the implementation practices of successful elementary schools will be beneficial to other elementary principals who seek to improve student success in reading. This study examined perceptions of principals from elementary schools in Texas whose schools received the Gold Performance Acknowledgement (GPA) from the Texas Education Agency (TEA) for Continuous Improvement in Reading (CIR) on the Texas Assessment of Academic Skills (TAAS) in 2002. The study had two purposes: (1) to identify the principal's perception of the levels of implementation and impact of selected reading strategies used by selected elementary schools in Texas to improve student success in reading and (2) to determine the principal's perception of the extent to which Accelerated Reader (AR) and AR-like recommend practices were used in selected elementary schools in Texas.

The research design for this study was descriptive. Parameters, which are descriptive measures of a population, were used since all 721 members of the population were mailed questionnaires. Research was conducted during the winter of

2004. Two hundred fifty-two principals responded. A questionnaire using a Likert-type scale for the principals' responses was used to collect the data. Principals' perceptions were measured to determine the degree of implementation and impact of AR and other selected reading strategies. Data were analyzed for all 252 respondents for selected reading strategies and by the categories of AR and non-AR schools for AR recommended reading strategies and AR-like recommended reading strategies, respectively.

This study identified the characteristics of a successful reading program in Texas elementary schools. To maximize their budgets while improving student success in reading, principals should provide their teachers with professional development, implement student/teacher conferences to direct reading practice, allow students to self-select books on their independent reading level for independent reading practice, consider use of literature circles, classroom libraries and reading textbooks, review the use of rewards and posting of goals to determine if these practices increase students' success in reading, assess computer reading programs to determine if there are less costly options available, and in schools using the AR program, review implementation practices for greater impact.

Dedicated to:

My God;

my husband, Ronney;

my children,

Doug, Katie and Aaron;

and my mother, Sadie.

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work toward being all God wants me to be. And, I thank God for blessing me with the opportunity to gain the knowledge to help His children to become all they can be.

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CHAPTER I

INTRODUCTION

Principals and district administrators face increasing pressure from state officials and communities to show continuous improvement on student success in reading. In this vein, the state has developed a new test, the Texas Assessment of Knowledge and Skills (TAKS), to replace the Texas Assessment of Academic Skills (TAAS). The TAKS was developed to further improve measurement of student achievement with the state curriculum objectives, Texas Elements of Knowledge and Skills (TEKS) (Texas Education Agency, 2003a). For years, however, student achievement on TAAS reading has been used to measure student success in reading. Interest is so great in TAAS scores, that campus and district scores are published in community newspapers (Houston Chronicle, 2002).

In order to recognize districts and campuses with improved student achievement, the 2001 Texas Legislature enacted the Gold Performance Acknowledgement (GPA) system. For achievement on the 2002 TAAS, GPA certificates were awarded to elementary schools for Campus Comparable Improvement in attendance rate, mathematics, and/or reading. In 2002, 721 elementary schools in Texas earned the GPA for Campus Comparable Improvement in Reading. What did these schools do to improve reading scores?

The style and format of this dissertation follow that of *The Journal of Educational Research*.

In the pursuit to increase student success in reading and thus improve test scores in reading, many principals implement reading strategies beyond the textbook and seek the latest in technological advancements to enhance instruction. Examples of technological strategies to improve reading achievement include: IREAP (Manzo, Manzo, & Albee, 2002), Book Adventure, Online Reader, and Reading Counts (Engwall, 1999). Another of these programs, Accelerated Reader (AR), is one of the most popular choices for reading management software with over 50,000+ educators selecting the program "to help raise tests scores, align curriculum with standards, and provide timely information to better manage reading activities" (Renaissance Learning, 2002, p. 2).

Many schools using the AR software program proclaim its success. Anecdotally, since implementing AR, 400 students in the town of Tifton, Georgia, have gone from not being able to "read a stop sign let alone a book" to reading over 25,000 books in one school year (Lopez, 2000). In AR promotional information, Bryan ISD in Texas proclaims significant gains on the TAAS after implementing AR district wide (Renaissance Learning, 2001).

While many users of AR seem to believe the program improves student success in reading, many researchers are questioning the success of the program. National Assessment of Educational Progress (NAEP) conducts large-scale assessment and surveys of fourth, eighth, and twelfth graders across the United States. Researchers using NAEP data, however, come to different conclusions about the success of AR. Topping and Paul (1999) relate that in 20 states where AR data was available to compare with data from the NAEP, students with higher-average tested reading

performance on the NAEP had higher levels of reading practice on AR. Biggers (2001) counters these claims by relating that the NAEP report states that a "computerized reading tool is not cited as a determining factor in the performance of high-achieving students or schools. Again, none of these complaints emphasizes the implementation of a computerized reading tool" (p. 74).

Chenoweth (2001) questions AR implementation strategies: "The increasingly popular 'reading management program' [AR] gives kids points for every book they read. But do they turn kids into readers?" (p. 49). Chenoweth's question is supported by Alfie Kohn's (1994) statement that many studies have found that "behavior modification programs are rarely successful at producing lasting changes in attitudes or even behavior. When the rewards stop, people usually return to the way they acted before the program began" (p. 1).

Chenoweth (2001) reports that Stanton, a representative of AR, cautions if schools "are only relying on the point system and prizes to motivate children to read, 'they are playing *Chopsticks* on a grand piano' … meaning they are using a sophisticated program in the crudest possible way" (p. 51). Stanton's comment brings into question the methods used by principals to implement the AR program in their schools. Additionally, Topping and Paul (1999) express concerns with the quality and consistency of the implementation practices of schools using AR.

How are principals using AR in Texas schools implementing the program, and what impact is the program having toward improving student success in reading?

Statement of the Problem

Children who have difficulty learning to read are at risk of failure in our educational system. These at-risk elementary school students frequently leave school before graduation, unprepared to compete in our technologically based society (Allington & Cunningham, 1996). While the elementary school is deemed to be the prime opportunity for shaping reading and student achievement (Gambrell, 1996), motivating students to commit to the sustained cognitive activity of reading to build and practice literacy skills is a constant challenge to teachers (Wigfield & McCann, 1997). In response to the need to motivate students to read, many elementary schools have implemented innovative teaching methods to stimulate students to read, therefore, improving reading scores.

It is unclear, however, what innovations or strategies have the most impact toward improving student success in reading. Many of the innovations involve the use of technology. Research is needed to evaluate the innovations and strategies implemented by principals in elementary schools that have positively impacted student success in reading. Additionally, since the AR program is one of the most widely used computerized reading tools; the value of implementing AR to improve student success in reading needs to be determined.

Purpose of the Study

In recent articles, many educators have sought to answer the questions: (a) What reading strategies promote student success in reading?, and (b) Does research support claims that the widely used AR program provides educational and

motivational benefits for students? (Biggers, 2001; Chenoweth, 2001; Johnson, 1999; Krashen, 2002; Pavonetti, Brimmer, & Cipielewski, 2002, December; Topping & Paul, 1999). Research into the types of reading strategies and implementation practices used by principals of elementary schools where students' reading scores have improved would be beneficial. All schools receiving the Gold Performance Acknowledgement (GPA) for Continuous Improvement in Reading (CIR) are not high performing campuses. All schools earning this acknowledgement, however, have shown improvement in reading scores. Questioning principals of these selected elementary schools who have documented success in their reading programs should provide valuable data.

This study had two purposes: (1) to identify the principal's perception of the levels of implementation and impact of selected reading strategies used by selected elementary schools in Texas to improve student success in reading and (2) to determine the principal's perception of the extent to which AR and AR-like recommend practices are used in selected elementary schools in Texas.

Research Questions

To address the purposes of the study, six questions regarding the principal's perceptions were addressed.

1. What are the principal's perceptions of the level of implementation and the level of impact of selected reading strategies implemented by selected elementary schools in Texas?

2. What are the principal's perceptions of the level of implementation and the level of impact of AR recommended reading strategies in selected elementary schools in Texas?
3. What are the principal's perceptions of the level of implementation and the level of impact of AR-like recommended reading strategies in selected non-AR schools?
4. Are there significant differences between selected AR and non-AR schools in the principal's perceptions of the level of implementation and level of impact of selected reading strategies?
5. Are there significant differences between the principal's perceptions of the level of implementation and level of impact of AR recommended strategies used in selected AR elementary schools and AR-like reading strategies used in selected non-AR schools in Texas?
6. What selected reading strategies have the highest reported level of implementation and level of impact by principals in selected elementary schools in Texas?

Operational Definitions

In order to address the research questions for this study, vocabulary and terms used are defined in the following definitions.

Accelerated Reader (AR): AR is a computer assisted reading program designed to promote students' love for reading while improving their reading ability. Students

read self-selected books for their assigned reading level. The students' comprehension is assessed through computerized testing and motivators may be awarded.

TAAS: Texas Assessment of Academic Skills was a state mandated criterion referenced test that was administered in grades three through eight and exit level from 1992 through 2002.

Improved Reading Scores: Improved reading scores as measured by earning the Comparable Improvement in Reading (CIR) on the TAAS for 2002.

TAKS: Texas Assessment of Knowledge and Skills is the new state-mandated criterion reference test that was initiated in 2003. The test was developed to further improve measurement of student achievement with the taught curriculum.

TEKS: Texas Elements of Knowledge and Skills is a list of specific objectives for courses Texas schools are required to cover in their curriculum.

Gold Performance Acknowledgment (GPA): In 2001, the Texas legislature enacted the GPA system to acknowledge district and campuses for high performance on additional indicators. The GPA is similar to the former acknowledgement systems. One acknowledgement is for Comparable Improvement in Reading (CIR) (Texas Education Agency, 2003d).

Comparable Improvement (CI): This is a measure that shows how student performance on the TAAS reading and mathematics tests at a given school has changed (or grown) from one year to the next, and then compares that growth to that of the 40 schools that are demographically most similar to the given, or "target" school (Texas Education Agency, 2003d).

Campus Group: Each school (campus) has a unique comparison group of 40 other public schools (from anywhere in the state) that closely matches that school on six characteristics (Texas Education Agency, 2003e).

Comparable Improvement in Reading (CIR): This measure shows how student performance on the TAAS reading test at a given school has changed (or grown) from one year to the next. On the spring 2002 test administration, schools must rank in Q1 and have 50.0% of high-performing students (matched test takers scoring a TLI >= 85 in the prior year) (Texas Education Agency, 2003e).

Texas Learning Index (TLI): The TLI is a score that describes a student's performance on the TAAS reading or mathematics test. It can be used to tell how far a student is above or below the passing standard. For example, the passing standard is a TLI of 70. If a student's TLI is 72, then we know that while the student passed, he did not pass by as great a margin as a classmate whose TLI was 90 (Texas Education Agency, 2003e).

Academic Excellence Indicators System Reports: The Academic Excellence Indicator System (AEIS) reports provide a great deal of performance information about every public school and district in the state. These reports also provide extensive profile information about staff, finances, and programs.

Academic Excellence Indicators Accountability Ratings for Campuses: Evaluation given by Texas Education Agency (TEA) based on TAAS results and dropout rates. The four levels of standard ratings for campuses are: Exemplary, Recognized, Acceptable, and Low Performing (Texas Education Agency, 2003e).

Six Demographic Characteristics: The percent of African American students enrolled for 2001-02; the percent of Hispanic students enrolled for 2001-02; the percent of White students enrolled for 2001-02; the percent of economic disadvantaged students enrolled for 2001-02; the percent of limited English proficient (LEP) students enrolled for 2001-02; and the percent of mobile students as determined from 2000-01 cumulative attendance.

Reading, Encoding, Annotating, and Pondering (IREAP): A cognitive enrichment approach to reading that teaches students to think more precisely and deeply about what they read using the Internet and a four-step strategy of reading, encoding, annotating, and pondering.

AR Recommended Reading Strategies: Reading strategies suggested by AR to maximize student success in reading.

Characteristics of AR: Implementation procedures and common practices used to implement AR.

Selected Reading Strategies: Those practices found in the literature that research suggests are effective in improving student success in reading.

Selected Elementary Schools: Texas elementary schools with grades three through five earning the Gold Performance Acknowledgement (GPA) for Comparable Improvement in Reading (CIR) on TAAS for 2002.

Selected AR Elementary Schools: Texas elementary schools with grades three through five where AR has been used for three academic years, 1999 through 2001; the schools earned the Gold Performance Acknowledgement (GPA) for Comparable Improvement in Reading (CIR) on TAAS for 2002.

Selected Non-AR Elementary Schools: Texas elementary schools with grades three through five earning the Gold Performance Acknowledgement (GPA) for Comparable Improvement in Reading (CIR) on TAAS for 2002 not using AR.

AR-like Recommended Reading Strategies: Strategies used to improve student success in reading that are similar to AR recommended practices but not used in conjunction with the AR program.

Motivators: Any incentive given to students to encourage reading and student achievement. Examples include grades, tokens, points, prizes, and certificates.

Principal: Person designated as administrative leader on campus.

Assumptions

The following assumptions are applicable to this study.

1. An assumption of this study is a school earning the Gold Performance Acknowledgment for Comparable Improvement in Reading indicates an increase in student achievement in reading.
2. The instrument used in this study will identify reading strategies used in successful elementary schools in Texas.
3. The instrument used in this study will identify implementation and impact of procedures and common practices used in successful AR elementary schools in Texas.
4. The respondents surveyed will objectively and honestly answer the questions posed to them regarding the study.

7. The interpretation of the data collected accurately reflects that which is intended.

Limitations

The following limitations are applicable to this study.

This study is generalizable to Texas elementary schools with grades three through five during the three-year period 1999 through 2001 that earned the GPA for CIR in 2002. The study is limited by the assumption that earning the GPA for CIR in 2002 indicates an increase in student achievement in reading.

Significance Statement

This study sought to identify the characteristics of a successful reading program in Texas elementary schools with documented improvement in reading scores. Knowledge of the implementation practices of successful elementary schools will be beneficial to other elementary principals who seek to improve student success in reading. Considering the number of reading strategies available for implementation, research is needed to discover the strategies that provide the greatest impact. Since the AR program has become popular by effective advertising and word-of-mouth success stories with over 50,000 schools worldwide purchasing the program (Pavonett et al., 2002, December), it was selected as a focus for research.

While the AR program is popular, questions concerning its effectiveness need to be answered. Several researchers report that the AR program is beneficial while "there are few peer-reviewed journal articles that document these effects." (Krashen,

2002; Pavonett et al., 2002, December). Research to determine effective strategies used by elementary schools in Texas with improved reading scores, and research to determine if the AR program is effective seems appropriate.

Dissertation Overview

This dissertation is divided into five chapters. Chapter I contains an introduction, statement of the problem, research questions, definition of terms, assumptions, limitations, and a statement of the significant for the dissertation. In Chapter II, the literature was reviewed as it related to the topics covered by the research questions. Chapter III includes a description of the methodology and statistical procedures used in this study including development of the questionnaire, revisions to the questionnaire following the pilot study, and collection of the data. Chapter IV delineates the statistical analysis of the data gathered from the principals' responses to questionnaires. After consideration of the data collected in this study, Chapter V presents the researcher's summary and conclusion with recommendations for further study.

CHAPTER II

REVIEW OF LITERATURE

Introduction

This chapter is divided into five sections. Each section contains a review of educational literature that is related to topics involved in this study. These topics include: the role of principal as the instructional leader, accountability testing, selected reading strategies, reading strategies in Part I of questionnaire, reading strategies for Part IIB and Part III of questionnaire, AR motivators, review of meta-analysis, review of comments on the meta-analysis, other research on motivation, summary of article reviews on motivation, Deming's perspective on motivation, Deming's perspective, and overview of Accelerated Reader. This chapter concludes with a review of literature covering the strengths and weaknesses of AR.

Principal's Role as Instructional Leader

While the principal's involvement in the day-to-day implementation of the school's reading program is limited, the principal's role as instructional leader places her in the critical position of selecting and promoting an effective reading program (McEwan, , 1997). "The community may provide a frame of reference for defining a school's mission, but it is the leader's vision that guides the day-to-day functioning of schools" (McEwan, 1997, p. 11). With the implementation of shared decision making in many elementary schools, principals are faced with the task of promoting wider ownership to bring needed curriculum changes to their schools (Chernow &

Chernow, 1992,). Pam Robbins and Harvey Alvy (2003) in *The Principal's Companion*, relate that the principal should promote curriculum discussions with the faculty by using the following questions.

- Is our curriculum relevant?
- Are we accomplishing our primary curriculum objectives?
- Are we behind? Ahead?
- What can we leave out without hurting the program?
- What new curriculum ideas should be adopted?
- What traditional ideas should be discarded or revived? (p. 158)

When making decisions to change the school's curriculum, principals must take into consideration the demographic profile and special needs of their students, as well as the experience and maturity of the faculty. In order to obtain the support of the faculty, the process used by principals to evaluate and change curriculum should not be done in isolation. By utilizing a systematic process for reviewing and updating curriculum, principals make changes to curriculum after thoughtful consideration of need, not just because "everyone else is doing it" (Robbins & Alvy, 2003, p. 158).

The principal's decision process is also impacted by budget constraints, which include the cost of the program and training for the teachers. Principals not only have to consider the special needs of their students and budget constraints when selecting a reading program, they also have to consider how effective various reading strategies are toward helping students become successful in reading. What are the questions principals ask to determine the reading programs to be implemented in their schools?

Many principals gather information from stakeholders, including faculty, parents, and students. Principals also consult other administrators and review literature. Another source of information available to principals to help determine the most effective reading program for their students is the results of testing data that measure student achievement in reading.

Since school achievement in reading is most often focused at the school level, elementary principals must review the results of performance assessment to align instructional practices or reading strategies implemented by classroom teachers to improve reading instruction. National, state, and local levels of government are keenly focused on assessment to validate student improvement in reading.

Accountability Testing

No Child Left Behind Act

Three days after taking office, President Bush began a bipartisan effort for educational reform which resulted in the No Child Left Behind Act (NCLB Act) of 2001. The NCLB Act requires each state to establish a system based on challenging state standards in reading and mathematics and annual testing for all students in grades 3-8. Over a 12-year period, statewide assessment must be conducted annually with analysis of progress objectives conducted to ensure that proficiency is reached by all groups of students. The groups include poverty, race, ethnicity, disability, and limited English proficiency with the intent that no child will be left behind. School districts and schools that fail to meet adequate yearly progress toward state established goals are “subject to improvement, corrective action, and restructuring

measures aimed at getting them back on course. Schools that meet or exceed adequate yearly progress or close achievement gaps will be eligible for State Academic Achievement Awards " (U. S. Department of Education, 2001).

In October 2002, President Bush made the following comments concerning federal guidelines, which require student assessment at the state level in return for federal money.

> If you believe every child can learn to read, then it's logical to ask: Are the children succeeding? And you want to know that. You want to know that to determine whether or not your dreams are being met. You want to know that to determine whether the curriculum is working. I'm used to the testing debate. I've heard: "You test too much. You're teaching to the test." If you teach a child to read, you're teaching a child a skill, not teaching the test. And, the child will then be able to pass the test. (Caputo, 2002, 16A)

This statement by President Bush emphasizes the importance that student success in reading holds in the political arena. Since state assessment of student's reading achievement is required in most states, the focus is on educators making certain the curriculum is working so that students learn to read, and that they read well enough to pass the state-mandated tests.

Texas System for State Academic Achievement Awards

The award system established in Texas is called the Academic Excellence Indicator System (AEIS). This system was in existence before the NCLB Act, but has been enhanced to meet the act's criteria. For purposes of this dissertation, two elements of the system established by Texas to improve student success in reading will be discussed: the Gold Performance Acknowledgement (GPA) for campus Comparable Improvement in Reading (CIR) and the Texas Reading First Program.

Data gathered from schools earning the GPA for CIR are the elementary schools that were selected to be the focus of this dissertation.

Under the AEIS, school districts and campuses in Texas are given accountability ratings. The four ratings are:

- Exemplary (district and campus)
- Recognized (district and campus)
- Academically Acceptable (district)/Acceptable (campus)
- Academically Unacceptable (district)/Low-Performing (campus) (Texas Education Agency, 2003e).

These ratings are given based on the passing rates for all students and each student group on the reading, writing, and mathematic sections of the Texas Assessment of Academic Skills (TAAS). The passing rate for eighth grade social studies students on the TAAS and dropout rates also contribute to the accountability rating earned by districts and campuses (see Table 1) (Texas Education Agency, 2003a). Accountability ratings are also used as a basis for other acknowledgements.

Schools with ratings of Exemplary, Recognized, or Acceptable are eligible for the Gold Performance Acknowledgement (GPA) for campus Comparable Improvement in Reading (CIR) if students in the school scored in Quartile 1 in their Comparable Improvement Group and 50.0% are more of the school students are high-performing (see Table 2). High performing students are matched test takers scoring a Texas Learning Index (TLI) greater than or equal to 85% in the prior year on the TAAS reading test. The TLI is used to tell how far a student is above or below the passing standard.

TABLE 1. Accountability Rating Standards for Public Schools in the State of Texas, 2002

	Exemplary[1]	Recognized[2]	Academically Acceptable/Acceptable	Academically Unacceptable/Low-performing
Base Indicator Standards				
Spring 2002 TAAS -Reading -Writing -Mathematics	at least 90.0% passing each subject area *("all students" & each student group)*	at least 80.0% passing each subject area *("all students" & each student group)*	at least 55.0% passing each subject area *("all students" and each student group)*	below 55.0% passing any subject area *("all students" or any student group)*
-Social Studies	at least 90.0% passing each subject area *("all students" only)*	at least 80.0% passing each subject area *("all students" only*	at least 50.0% passing *("all students" only)*	below 50.0% passing *("all students" only)*
2000-01 Dropout Rate	1.0% or less *("all students" and each student group)*	2.5% or less *("all students" and each student group)*	5.0% or less *("all students" and each student group)*[2]	above 5.0% *("all students" or any student group)*[2]

[1]A district cannot be rated Exemplary or Recognized if it:

- Has one or more *Low-performing* campuses; or
- Has 1,000 or more, or 10.0% or more, 2000-01 students in grades 7-12 who were not reported either as enrolled or as leavers in the 2001-02 PEIMS Submission 1.

[2]Student groups are African American, Hispanic, White, and Economically Disadvantaged.

Note: If a district or campus would be rated *Academically Unacceptable/Low-performing* solely because of a dropout rate exceeding 5.0% for a single student group (not "all students"), then the district or campus will be rated *Academically Acceptable/Acceptable* if that single dropout rate is less than 10.0% and has declined from the previous year. (Texas Education Agency, 2003a)

TABLE 2. Gold Performance Acknowledgment Standards for Public Schools in Texas, 2002

Indicator	Standard
Campus Comparable Improvement (Determined Separately for Reading and Mathematics)	
School Year Evaluated	Spring 2002 Test Administration
Comparable Improvement Quartile	Q1
	AND
Percent of High-performing Students (matched test taker scoring a TLI>=85 in the prior year)	50.0% or more

Source: Texas Education Agency, 2003c

The first step in selecting schools that qualify for the GPA for CIR is to determine the school's comparison group. "Each school (also referred to as campus) has a unique comparison group of 40 other public schools (from anywhere in the state), that closely matches that school on six characteristics" (Texas Education Agency, 2003c, p. 1). These characteristics are similar to the characteristics used to identify groups in the NCLB Act.

The demographic characteristics used to construct the campus comparison groups include those defined in statue as well as others found to be statistically related to performance. They are:

- The percent of African American students enrolled for 2001-02
- The percent of Hispanic students enrolled for 2001-02
- The percent of White students enrolled for 2001-02
- The percent of economic disadvantaged students enrolled for 2001-02
- The percent of limited English proficient (LEP) students enrolled for 2001-02
- The percent of mobile students as determined from 2000-01 cumulative attendance (Texas Education Agency, 2003d, p. 1)

The schools are first grouped by type (elementary, middle, high school or multi-level). Then, analysis is done to determine schools from across the state that best match the above-listed characteristics of the target school. Comparison groups are only created for campuses, not districts; schools may be a member in more that one comparison group. "If a school is in the top quartile for reading, that means that the average growth in reading of the students tested at that school is greater than that of

the students at three-quarters of the schools in its comparison group (Texas Education Agency, 2003d, p. 1). After the schools comparison group is established, calculations are made to determine the school's quartile rank in the group and the TLI from the student's scores on the TAAS reading test. If schools meet the requirements, the GPA for CIR is awarded (Texas Education Agency, 2003d). By earning this recognition, it is hypothesized that the reading strategies used in these schools would be worthy of study. Information gained seems interesting since the schools earning GPA for CIR were compared with other schools with similar demographics. The reading strategies used in these schools may be beneficial to other schools with similar demographics.

Texas Reading First

In a May 9, 2003, press release, U.S. Secretary of Education Rod Page announced that Texas would receive approximately $79 million for the first year of a multi-year grant for approximately $532.5 to improve children's reading achievement through scientifically proven methods of instruction. The state's initiative, Texas Reading First, "passed a rigorous review panel that judged the plan against 25 main review criteria" (U.S. Department of Education, 2003, p. 1). The multi-year funding, however, requires the state's successful implementation of its program and congressional appropriations. The NCLB Act provides funding to improve in reading through Title I (U.S. Department of Education, 2003).

The purpose of Title I, Part A is to ensure that all children, particularly low-achieving children in the highest-poverty schools, have a fair, equal, and significant

opportunity to obtain a high-quality education and reach, at a minimum, proficiency on challenging state academic achievement standards and state academic assessments (Texas Education Agency, 2003b).

The prospect of additional funding strengthens accountability by requiring states to implement statewide accountability systems to cover all public schools and students receiving Title I funding. The NCLB Act is beneficial for many Texas schools because their demographic makeup qualifies them to apply for Title I funding for their reading program. To be eligible for the funds, schools are required to submit a sub-grant application to an expert review panel. The individual school reading programs must have the following priorities to be funded.

- Raising the caliber and quality of classroom instruction;
- Basing instruction on scientifically proven methods;
- Providing professional training for educators in reading instruction; and
- Supplying substantial resources to support the unprecedented initiative (U.S. Department of Education, 2003, p. 1).

The purpose for the Texas Reading First Initiative is to ensure that all children in Texas can read at or above their own grade level by the end of the third grade. The state will "help Texas elementary schools provide professional development and direct technical assistants to schools in selecting and implementing effective instructional materials, programs, learning systems and strategies that have been proven to teach reading" (Texas Education Agency, 2003b). The strategies in this program focus on the teacher and scientifically based classroom instruction. The

Texas Reading First requires schools to have 90 minutes of reading instruction each day. The comprehensive instruction must integrate reading, writing, and grammar (Texas Education Agency, 2003b).

Interestingly, part of the Texas Reading Initiative includes Accelerated Reading Instruction. The Accelerated Reading Instruction has nothing to do, however, with the AR program. The Texas Education Agency defines Accelerated Reading Instruction as data driven and more intensive, individualized, systematic, and explicit. Students in grades K-2 are identified by state approved assessment instruments and are placed in the early intervention, which emphasizes phonological awareness, decoding, and comprehension as strategies for teaching reading (Texas Education Agency, 2003b). The Texas Reading First Initiative is starting with the 2003-2004 school year. Each school will be held accountable for achievement before additional funding is approved.

Another Statewide Reading Improvement Program

Before the NCLB Act required states to establish a system of accountability testing the state of Maryland had a testing program. In the *Journal of Education Research*, Guthrie, Schafer, Von Secker, and Alban (2000) emphasize the importance of student achievement in reading and focus on finding the characteristics of a successful program. Their study takes into consideration the emphasis on improving student achievement in reading and focuses on finding the characteristics of a successful reading program.

> School reading programs are increasingly scrutinized by educational administrators and policy makers.… These political pressures heighten the school as the unit of analysis for reading programs. When policy makers examine characteristics of successful schools, they usually report organizational variables such as ongoing staff development, a system for monitoring performance, content learning goals, and school governance structure. (Guthrie et al., 2000, p. 211).

After an extensive meta-analysis of within-school and between-school variables the researchers report, "general school governance and management rarely explained a significant amount of variance when accounting for student background factors and instructional quality" (Guthrie et al., 2000, p. 211). These researchers call for research that focuses on the specific characteristics of reading programs rather than general characteristics of schools. After reviewing multiple studies, the researchers determined that school-wide reading programs for regular students include the following: book clubs, cross-age tutoring, or after-school enrichment activities as additions to the reading taught in the language arts classes. Grouping was also identified as a strategy to improve student success in reading. The review of studies from the 1970s of schools achieving beyond expectations on the basis of SES found the following characteristics of reading programs.

1. High priority on reading goals
2. Abundance of books and materials
3. Large amount of time scheduled for reading instruction
4. Teacher opportunities for staff development in reading instruction
5. Student accountability in the reading program
6. Parent involvement in the reading program

7. Teacher input in decision making for the reading program
8. Principal contributes instructional leadership for the reading program (Guthrie et al., 2000).

This list of reading strategies corresponds with the reading strategies selected for review in this dissertation and are similar to the strategies suggested for implementation by AR.

Guthrie et al. (2000) stated that "reading achievement change on the statewide performance assessment in Maryland was directly associated with the characteristics of the school reading program in the higher elementary grades" (p. 222). They listed the following elements as a "distinctive profile" of "high-impact" reading programs in the upper elementary grade: integration of curriculum, an abundance of books and resources, comprehension strategy instruction, writing techniques, and social interaction with low emphasis on older basal programs. The researchers noted, however, that because the study was conducted in all the schools of three districts where most teachers were Caucasians with moderate experience and were relatively highly educated, their results had limitations.

Guthrie et al. (2000) conclude that "… there are few data to document that those characteristics quantitatively discriminate high-achieving schools from low-achieving schools. Consequently, the distinguishing features of effective school reading programs are relatively little understood" (p. 212). Their study attempted to "characterize improving schools" by collecting data from reading assessments in two successive years based on the same statewide performance assessment. Interestingly, the reading strategies selected by a review of the literature for this dissertation are

similar to the reading strategies enumerated in the research of Guthrie et al. (2000). There are similarities in the purpose and the methodology used their study and this dissertation.

One of the desired benefits of this dissertation was to determine the characteristics or the reading strategies used in schools where students are exhibiting growth in reading achievement as measured by the TAAS over a two-year period. The quantitative data were gathered by surveying the principals of schools earning the GPA for CIR for their perceptions of the implementation and impact of selected reading strategies used in their schools to improve student success in reading. Since the GPA for CIR is given to schools with TEA rating of Exemplary, Recognized, or Acceptable, the data gathered may be analyzed on the characteristic of reading programs and reading strategies used in schools with varied demographic makeups. Perhaps this dissertation will answer some of the questions posed by Guthrie et al. (2000).

Selected Reading Strategies

This section of the review of literature begins with an explanation of the groupings of the selected reading strategies and concludes with a review of literature surrounding each selected reading strategy. After a review of literature over reading instruction, some of the reading strategies were selected for use in this dissertation because they frequently occurred in the review of literature, and the literature suggests that the strategy would be effective for improving student success in reading. Other reading strategies were selected because the reading strategies are recommended by AR to implement with the AR program.

All of the selected reading strategies are used as dependent variables to analyze the characteristics of an elementary school reading program with improved reading scores. Each of the reading strategies selected will be used as a stem on the questionnaire that was constructed to measure the principal's perceptions of the level of implementation and level of impact of the specified reading strategy.

The selected reading strategies are divided into three groups. The following reading strategies are used in Part I of the questionnaire and represent reading strategies that appear in the literature and are frequently cited as being used in elementary school reading programs.

- Reading textbook program
- Literature circles
- Classroom libraries
- Parent involvement
- Professional development for teachers
- Computer reading program
    - Internet, Reading, Encoding, Annotating, and Pondering
    - Reading Counts
    - Accelerated Reader

The second group of reading strategies is those strategies recommended by AR to be used when implementing the AR program. These AR-recommended reading strategies are used in Part II of the questionnaire. The AR reading strategies reflect reading strategies that are supported by many researchers and have been adapted by

AR to integrate with their computer assisted reading program. Some researchers question if reading strategies used in AR are supported by scientific research.

For purposes of this dissertation, the third group of reading strategies is called AR-like reading strategies. The AR-like recommended reading strategies are similar to those used by AR and the reading strategies that Guthrie et al. (2000) reported to be effective as a result of their meta-analysis of studies done in the 1970s of schools achieving beyond expectations in reading on the basis of socio-economic status. These reading strategies are used in schools that do not use the AR program. The AR-like reading strategies are used in Part III of the questionnaire. The stems of the questions in Part III are similar to the stems of the questions in Part II for schools using the AR program. This will allow comparisons of reading programs for schools using AR reading strategies with those schools using AR-like reading strategies. Following is a listing of the AR and AR-like reading strategies used to motivate students to read.

- Students self-select books to read.
- Students read books on their independent reading level.
- Students are tested over their independent reading.
- Students and teachers conference to direct reading practice.
- Students have set goals for their independent reading.
- Students' achievements of reading goals are posted in classrooms, hallways, and/or the library.
- Students are given time for sustained silent reading during the school day.

- Students are motivated to read through extrinsic rewards.

Researcher's views differed on the effectiveness the reading strategies used on the questionnaire. Following is a review of the literature surrounding each of the above listed reading strategies covered on the questionnaire.

Reading Strategies in Part I of Questionnaire

Reading Textbook Program

The debate whether whole language or phonics is the best method of reading instruction has been going on for years. While many propose elementary schools literacy instruction should be based on whole language, others seek the return of stories about Dick, Jane, and Sally. Much is still being written about the controversy. An example of writing on the issue is Richard L. Allington's (2002) *Big Brother and the National Reading Curriculum: How Ideology Trumped Evidence*. Allington takes the controversy over whole language or phonics in reading instruction into the political arena by presenting articles that critique the April, 1999, National Reading Panel Report and his concerns about the Christian Coalition. Allington concludes:

> I close this book by discussing the possibility that this whole misguided venture needs to be rethought. I argue that the No Child Left Behind Act (PL 107-110) is nothing like a new educational reform plan. Instead, the law simply expands a thirty-year old federal accountability mandate, which before targeted only high-poverty schools receiving federal Title I funds, to middle-class children. And I argue that what is needed is not more federalized testing and curriculum control, but almost the very opposite—an increase in local control and teacher autonomy, autonomy where professionals take responsibility for providing effective and always—improving literacy instruction through close and expert on–going assessments of children's literacy development (p. 40-41).

Textbook publishers seem to be addressing the controversy over whole language or phonics instruction by giving school districts the opportunity to purchase revised reading textbooks that address this issue. The current generations of textbooks presented by publishers present both whole language and phonics instructions as well as an awareness of the need for comprehension instruction. These integrated readers contain aspects of both whole language and basal readers in addition to metacognitive theory. Recent editions of reading textbooks contain the following elements.

- A variety of real literature, selections from trade books
- Fiction and non-fiction reading
- Various genre – from poetry, to prose, to plays
- Direct explanation of comprehension strategies
- Writing assignments. (Pressley, 1998)

This combination of ideas is part of the Process-Oriented Comprehension Reform. These reform groups include: Accelerated Schools Project, ATLAS Communities, Modern Red Schoolhouse and School Development Program. An overview of these programs may be found in *Improving Reading and Literacy in Grades 1-5: A Resource Guide to Research-Based Programs* by St. John, Loescher, and Bardzell (2003).

Literature Circles and Classroom Libraries

Past president of the National Reading Conference and a member of Reading Hall of Fame, Gerald G. Duffy, relates that a foundation for a literary environment must

include a classroom filled with texts. His description of a classroom library includes an area with beanbags or chairs where students can comfortably browse and read with at least 30 trade books per students of various genre and levels of difficulty. Duffy also includes read-aloud books and non-text items like globes, maps, access to computers, and student produced materials as important additions to the classroom library (Duffy, 2003). Recent research indicates book-rich classroom environments are crucial to motivating students to read more. Classroom libraries should contain books, magazines, and newspapers (Gambrell, 2001). Lucy McCormick Calkins (2001) in her book, *The Art of Teaching Reading*, shares the importance of leveled libraries so that instruction time is not spent discussing appropriate book choices or the learning time lost for students attempting to read books that were at their frustration level. Calkins cautions that teachers must take care to level the books and not the students. She relates that the level of difficulty of books for students change with the experiences and interests of students. AR promotional materials suggest classroom libraries and emphasize the importance of trade books at home and at school (Paul, 1996).

Parent Involvement

Parental involvement in the educational process is a critical key for student success (Snow, 2003). Process-Oriented Comprehension Reforms call for parental involvement. These programs expect parents to play a role in their students' education. Teachers encourage parent involvement by regular communication with

parents by direct contact, parent conferences, and through technology. Parents are also encouraged to volunteer to support school activities (St. John et al., 2003).

Professional Development for Teachers

Albert Lee Snow (2003), a principal with 24 years of experience, writes in his book, *Practical Advice for Principals*, that providing quality staff development is an important strategy to improve students' academic performance. Staff development is a vital component of school improvement and many states are requiring a specific number of hours of staff development for teachers. Additionally, districts give teachers release days to provide time for staff development.

While professional development for teachers is significantly important to student success, principals must also stay current with their own professional development (Schumaker & Sommers, 2000). Through catalog promotions, AR encourages schools to provide professional development opportunities for teachers. An example is *Maximize the Success of Your Accelerated Reader Program with Resources and Training for Teachers Using Accelerated Reader* (Renaissance Learning, 2002).

Computer Reading Programs

Many computer reading programs are currently on the market. Because of the large number of schools using the Accelerated Reader, it was selected as the computer reading program for the focus of this study. The characteristics of the AR program are reviewed in-depth in the following sections. Below is a review of two other frequently used computer reading programs.

Internet, reading, encoding, annotating, and pondering (IREAP). Internet, Reading, Encoding, Annotating, and Pondering (IREAP) is a system developed to improve student success in reading through the use of technology. The system also helps students to improve in writing and thinking. By using "threaded discussions" similar to those used on the Web, student learning occurs through discussions on the Internet. IREAP had its beginnings in 1973 as REAP and has grown with the inception of the Internet into classrooms. REAP started as a "cognitive enrichment approach that teaches students to think more precisely and deeply about what the read, using the following four-step strategy.

- Read to get the writer's basic message.
- Encode the message into your own words while reading.
- Annotate your analysis of the message by writing responses for several perspectives.
- Ponder what you have read and written—first by reviewing it yourself, then by sharing and discussing it with others, and finally by reading the responses of others." (Manzo et al., 2002, p. 43)

Through the IREAP process, students practice constructive thinking and post their reconstructive and constructive annotations to books they have read on the schools' Web page. By using the Internet, the base of possible responses to students' pondering goes from the classroom to as larger a population as the teacher and school desire (Manzo et al., 2002).

Reading counts. Reading Counts is a computer reading program, formerly known as The Electronic Bookshelf, published by Scholastic. Reading Counts is similar in many respects to AR. The following list, published on the Scholastic (2003) Website, highlights Reading Counts features that are not features of AR and is based on comparison with the Reading Practice Quizzes as used in Accelerated Reader, version 5.12, and the Accelerated Reader 5.12 management system, as described in the AR Fall 2000 catalog. Reader, version 5.12, and the Accelerated Reader 5.12 Accelerated Reader.

- A randomized item bank creates unique quiz for each student.
- Students can take more than one quiz on a book—promotes student success.
- Teachers can customize passing levels, length of quiz, and other key parameters to meet the needs of all students.
- Auto Alerts! Lets teachers know immediately when students are having problems.
- Unlimited number of users in each school at no extra cost.
- Book Expert database with full search capabilities and descriptions of over 23,000 titles, at no extra cost. A "trade-up" to Reading Counts is being offered to users of AR on the Scholastic Website. A comparison of costs of Reading Counts with AR shows Reading Counts to be minimally less expensive. Reading Counts claims to have more titles and tests available and that its graphics are more appealing to students. Reading Counts offers staff development and promotes parental involvement in its program. While the opportunity for schools to purchase rewards as

motivators are included on the Website, the literature posted on the Website indicates that the use of rewards as motivators should be determined by the school and its teachers. Reports indicating students' progress and immediate notification of students experiencing difficulties are strengths of the computer reading program. Reading Counts makes similar claims to AR's claims that its program is research based. Just like AR, however, the findings are "brief, rather anecdotal accounts" and not based on causal-comparative research of large samples over a long period of time (International Reading Association, Inc., 1999c, p. 1).

Reading Strategies for Part IIB and Part III of Questionnaire

In this section, AR-like strategies will be discussed first, followed by a discussion of AR recommended strategies.

Students Self-Select Books to Read

Many teachers allow students to self-select the books they read. The National Assessment of Educational Progress (NAEP) reports that nearly half of fourth grade teachers surveyed placed great emphasis on literature-based instruction and that the students of these teachers had higher reading scores than students of teachers who placed some or no emphasis on literature-based instruction. Additionally, when students were allowed to read books of their choosing in the classroom, the practice had a positive impact on student achievement in reading. The available books should be varied in content and genre (Campbell, 2001). Many researchers support the idea of a "strong link to motivation to read" with students being allowed to self-select

materials (Gambrell, 2001, p. 137). The AR program allows students to self-select books within their zone of proximal development, which is discussed in the following section.

Students Read Books on Their Independent Reading Level

A student's independent reading level is considered to be a reading passage in which the length and complexity of sentences, the sophistication of the vocabulary, and the student's interest in the content of the passage would allow the student to read and comprehend the material without prior instruction or assistance from the teacher. Various methods have been developed to determine a student's independent reading level as well as instructional reading level and frustration reading level.

Diagnostic tests. Diagnostic tests are given to determine the student's independent reading level or the zone of proximal development as the independent reading level is called by AR. The AR program uses a computer program called the "Star Test" to determine the student's zone of proximal development (Institute for Academic Excellence, 1998). The zone of proximal development is thought to be the optimal exposure to new vocabulary and difficulty of sentence structure. Trade books are evaluated to determine their zone of proximal development, and then the books are labeled to indicate reading level and the number of points students will be awarded for reading the book (Institute for Academic Excellence, 1998).

Students Are Tested over Their Independent Reading

AR computerized tests/AR reading practices quizzes. A report from the Institute for Academic Excellence (1998, May) explains how Accelerated Reader quizzes are designed. Students use computers to complete a multiple-choice test over self-selected books they have read. The test may contain 5, 10, or 20 items depending on the length of the book. Students may take tests on books they read individually and on books read to them. The default for the program sets a passing score at 85% and does not allow students to retake tests. According to AR literature, the ability to retake tests promotes guessing. Additionally, AR states retaking tests for books the students did not comprehend is not beneficial. Reports generated from the AR software program allow teachers to track the points earned by students and monitor the students' comprehension levels as indicated by the students' scores on the AR test (International Reading Association, Inc., 1999b).

AR literacy skills tests. In addition to the multiple-choice test to measure comprehension, AR offers "Literacy Skills" tests which assess higher order skills including "inferential reasoning, main idea, cause and effect, characterization, and recognizing plot. The tests contain 36 to 60 items and may be retaken.

Students and Teachers Conference to Direct Reading Practice

Pam Chomsky-Higgins (1998), a first grade-reading teacher from Reading, Massachusetts, shares "Teaching Strategies and Skills during Readers' Workshop: Setting the Stage for Successful Readers and Writes" in *Practice What We Know.* In

her classroom, she meets with each student at least twice a week to discuss books the students have read over the last few days. These five- to six-minute discussions include the following:

- Teacher asks student questions about the book.
    - Why did the student select the book?
    - What made the book interesting?
    - Was the book easy or difficult to read?
    - What the student liked best about the book?
- Teacher focuses on one teaching point in the book to discuss with student.
- Depending on the length of the book, the student reads all or part of the book to the teacher.
- During the conference, the teacher records the discussion with the student.
    - The teacher records the title and level of the book in her notes.
    - The teacher notes miscues and self-correction during reading and discusses these with the student.
    - Reading strategies used in the conference mirror those taught during large group instruction. (p. 149)

AR Teacher/Student Conference

AR recommends that teachers use the reports generated from the AR software program to track the points earned by students and monitor the students' comprehension levels as indicated by the students' scores on the AR test. Teachers

are encouraged to use these reports to use in goal setting conferences with their students (International Reading Association, Inc., 1999b).

Students Have Set Goals for Their Independent Reading

The practice of having students set goals for their independent reading has its roots in Goal Orientation Theory. The ideas behind this theory are discussed at length in the section on student motivation through extrinsic rewards.

Students' Achievements of Reading Goals Are Posted in Classrooms, Hallways, and/or the Library

AR encourages users of its program to post in classrooms, hallways, and/or the library the number of points earned by students through AR testing. Jay R. Campbell (2001) reports findings from experts and the National Association of Educational Programs that seem contrary to the practice of publicly posting achievement of students' reading goals.

> According to experts, learning to read is facilitated by developing a sense of one's self as a reader and recognizing that reading is integral to daily life. Several findings from the NAEP reading assessments are consistent with these ideas. For example, students in Grades 4, 8, 12 who said they frequently read for fun had higher reading scores than did students who read for fun daily or weekly. It is likely that students who read for fun daily or weekly have acquired a positive perception of themselves as readers and expect reading to be rewarding or enjoyable experience. (Campbell, 2001, p. 151)

Students Are Given at Least 30 Minutes for Sustained Silent Reading during the School Day

Sustained silent reading (SSR) is usually defined by the following four components.

1. Students read silently in a quiet reading atmosphere, free from distraction and interruptions.
2. The teacher also reads recreational materials (not schoolwork), thereby providing an adult model.
3. Students are free to read a wide variety of books or magazines (these need to be made available in the classroom), but students need to select materials that will take the entire allotted time to avoid getting up and distracting other readers.
4. Children's comprehension of their selected materials is not to be evaluated in any way (e.g., by making them write a book report). (Byrnes, 2000, p. 202-203)

The implementation of the above techniques for sustained silent reading appear to give the students the opportunity to practice reading without the pressure of being graded and with the opportunity to self selecting their own reading materials. These elements seem to enhance the students' intrinsic motivation to read which should lead to a positive attitude toward reading. The lack of opportunity, however, for the teacher to provide feedback during the reading practice would have to be addressed with other types of reading instruction. In the lower elementary grades, scaffolding, guided reading practice with the teacher observing and assisting the student to correct mistakes in reading, is often more beneficial to increasing reading comprehension than being allowed to read on their own (Byrnes, 2000).

Other factors impacting sustained silent reading include the amount of time allotted and whether reading practice takes place at school or at home. The difference in task behavior in students makes these factors difficult to measure. Differences in

students' aptitude for reading also impacts the amount of time required for sustained silent reading to be effective. A review of current research reveals conflicting results regarding benefits of length of time and location of reading practice (Byrnes, 2000).

Length of time suggested for sustained silent reading varies from group to group. In Pam Chomsky-Higgins' first grade classroom students participate in SQIRT (Super Quiet Independent Reading Time). Students begin the year by reading about 5 minutes and end the year reading for 20 to 25 minutes (Chomsky-Higgins, 1998). On the International Reading Association's (1999a) Website, a review of literature on monitoring reading practices reports that studies found "a high positive correlation between reading practice (at school or at home) and reading achievement" (p. 1).

Findings published in the "1998 Reading Report Card for the Nation and States" by the U.S. National Assessment of Educational Progress (NEAP), state that students who read more at school also read more at home. The review noted, however, that simply increasing time for SSR "revealed a mixed result with six studies noting a positive effect on reading scores and five noting no effect" (International Reading Association, Inc., 1999a, p. 1).

In addition to the amount of time students spend in SSR, the review states that other factors impact student improvement in reading. The factors include: teacher interaction with student and level of reading material—"within zone of proximal development" (International Reading Association, Inc., 1999a, p. 1). In conclusion, the review suggests that "computerized learning information systems for reading (not to be confused with integrated learning systems—such as The Accelerated Reader, which is the focus of this commentary—seek to provide teachers with a tool for

achieving this daunting task" (International Reading Association, Inc., 1999a, p. 2). Interestingly, the reader is informed at the conclusion of the review that the review is a commentary focused on AR.

AR Motivators

In the AR program, students earn points for passing a computerized test on the books they read. Trade books used in the AR program are labeled to indicate their reading level and the number of AR Points to be awarded when students pass the AR test on the computer. According to "What is The Accelerated Reader?" on the International Reading Association's Website (1999b), AR points are calculated as follows:

AR points = (10 + reading level) x words in book / 100,000)

Students Are Motivated to Read through Extrinsic Rewards

Since schools today are being held accountable for solving the ills of society that are displayed in our youth, educators seek appropriate instructional methods to address students' varied educational needs. Disagreements often arise over various instructional strategies. The use of rewards to motivate students is an instructional strategy used by many educators and is often a point of controversy. In "Up to the Schools?" (Sowers, 1998) relates an example of educators seeking instructional answers. The article describes Harris County Department of Education's Adaptive Behavior Center (ABC) "for students whose behavior was too extreme for their school district to handle" (Sowers, 1998, p. 1F). The intervention program used at

ABC is similar to many across the nation. The program involves a point-level system where points earned may be used to buy rewards from a well-stocked closet. Points also allow students to progress to higher levels and eventually earn the opportunity to return to their former school. The goal of the faculty at ABC is to help students master self-control, participate in schooling, and become productive members in society by reinforcing positive behavior and imposing consequences for negative behavior (Sowers, 1998).

The purpose of the instructional strategy implemented at Harris County's ABC and others like it is to foster intrinsic motivation in students by reducing/eliminating extrinsic rewards. These same instructional strategies are implemented in many elementary schools' AR programs to increase students motivation to read. The practice of using extrinsic rewards (e.g., points, prizes, and privileges) to build intrinsic motivation (i.e., to master self-control and engage in the educational process) is built on the behaviorist theory of motivation and is the source of considerable research and debate. Valid research is essential for educators to consider when designing educational practices such as implementation of AR. Considering the consequences to learners by implementing unsound instructional practices, critical reading of research is an imperative for evaluating instructional theory. The purpose of the following section of this dissertation is to analyze selected research on intrinsic motivation and extrinsic reward and to consider the degree the findings contribute to sound instructional theory.

This section includes an evaluation of a meta-analysis and an analysis of three comments on the meta-analysis. A response by the authors of the meta-analysis to

the comments about their work is also reviewed. This particular meta-analysis was selected because it reviews studies surrounding motivation and the critical responses to the findings. The discussions presented provide fertile ground for construction of instructional concepts, axioms, and theories surrounding motivation. Additionally, the findings have implications for determining effective reading strategies. An additional review of research regarding elementary students' motivation to read as an instructional construct is included to correlate the findings of the meta-analysis and the three conflicting opinions of motivational theory with specific instructional research.

Review of Meta-Analysis

Following is an overview of the meta-analysis being considered. "Reinforcement, Reward, and Intrinsic Motivation: A Meta-Analysis" by Judy Cameron and W. David Pierce (1994) published in *Review of Educational Research* reviews 96 experimental studies on the effects of intrinsic motivation and extrinsic rewards. Cameron and Pierce firmly establish the reinforcement theory as a premise for their research. They begin the article by stating, "Reinforcement theory has had a significant impact on education. Education professors routinely teach the basic elements of behavior theory" (p. 363). Cameron and Pierce follow by presenting the different views of reinforcement theory by delineating researchers who favor the use of reinforcement principles and those that "draw a distinction between intrinsic and extrinsic motivation" (p. 363). By stating different interpretations of the reinforcement theory, the authors seemed to establish credibility.

Cameron and Pierce (1994) also relate the framework of cognitive evaluation theorists and their considerations of the theory of motivation. They state, however, that they have difficulties with the differences in interpretations of the effects of reward on intrinsic motivation. They have a problem with the idea from cognitive evaluation theory that:

> Feelings of competence and self-determination are seen as causes of changes in intrinsic motivation…. Rewards are defined as controlling if measures of intrinsic motivation decrease and informational when the dependent variable indexes an increase in motivation (p. 371).

The duality of the definition of rewards by cognitive evaluative theorists is a concern for Cameron and Pierce.

They continue by presenting the ideas of behavior theorists. The authors state that "an operant analysis of behavior involves consideration of a prior learning history and the three-term contingency, the S^D : R⇗ S^r relationship" (Cameron & Pierce, 1994, p. 371). S^D represents the discriminative stimulus or setting event, R the response or behavior, and S^r contingent reinforcement. In this view, when behavior is regulated by consequences, there should be no forfeiture of intrinsic motivation assumed.

The authors use the differences enumerated between theories as a call for a meta-analysis of the research on the effects of reward and reinforcement on intrinsic motivation. They state that the purpose of the study is "to make a causal statement about the effects of extrinsic rewards and reinforcement on intrinsic motivation" (Cameron & Pierce, 1994, p. 372). Even though the authors do not accept or reject either theoretical framework, their presentation of information leads the reader to suspect their support for behaviorist theory.

The studies included were selected from a computer search using *intrinsic motivation*. Only studies with intrinsic motivation as the dependent variable were considered. The meta-analysis was conducted to answer the following research questions.

1. Overall, what is the effect of reward on intrinsic motivation?
2. What are the effects of specific features of reward on intrinsic motivation?
3. Overall, what is the effect of reinforcement on intrinsic motivation? (Cameron & Pierce, 1994, p. 373)

In order to answer these questions, two different individuals independently coded each study. General information gathered includes author(s), date of publication, publication source, population sampled, sample size, type of experimental design, and type of task used in the study. Inquiry included reward type, reward expectancy, and reward contingency. Operational definitions were present and clearly defined. The statistical complexity of the research method, however, called for by the meta-analysis requires a high level of statistical expertise. The research procedure used for the meta-analysis establishes homogeneity between the studies. Once the homogeneity was established, the effect size of each study was calculated and comparisons were made.

> The effect size indicates the extent to which experimental and control groups differ in the means of a dependent variable at the end of a treatment phase…. It is the difference between the means of rewarded group and a non-rewarded control group divided by the pooled standard deviation of this difference (Cameron & Pierce, 1994, p. 376).

The design and methodology call for the use of effect size as the statistical measure to answer the research questions. A concern is the loss of data in the process of

establishing homogeneity. At first the procedure established by Cameron and Pierce (1994) seems an appropriate method for comparing a large number of studies. Upon further consideration, however, two difficulties come to mind. The process of establishing homogeneity between studies involves Tukey's method of discarding outliers. Although the authors stipulated that this procedure did not have a statistically significant impact on results, data from some participants are lost. This has implications on the accuracy of the group means, especially since the Tukey method was used more than once if homogeneity was not obtained after the first calculation. If the process of discarding outliers were carried out over 96 studies, the discrepancies would be increased and compounded.

Another problem with the design and methodology is the lack of an explanation of correction for calculating interactions within studies. The larger the number of interactions in a study, the less reliable the obtained statistic becomes. This obtained statistic is a critical concern regarding Type I and Type II errors. While concerns are present with the methodology, in general the researchers attempted to reconcile all of the difficulties presented by comparing 96 studies using a plethora of different methods. Their attempt is well thought out and consistently implemented to establish a common measure of comparison. If one were to consider the difficulties, the work done by Cameron and Piece gives the *big picture* for interpreting the results of the meta-analysis.

A strength of Cameron and Pierce's (1994) research is their explanations of their findings through the discussion of theoretical implications. They address their findings by first considering cognitive evaluative theory. Their findings are in

opposition to Kohn's position on motivational theory. Cameron and Piece state, "In contrast to recent claims made by Kohn (1993, p. 55), verbal praise is an extrinsic motivator that positively alters attitudes and behavior" (p. 397). Cameron and Pierce comment on problems with cognitive evaluative theory and use the phrase "cognitive evaluative theory." However, they only make inferences to behaviorist theory and never use the words "behaviorist theory." In the practical implications sections, the authors finally relate their support of behaviorist theory through their descriptions of behaviorist theories in their findings.

Cameron and Pierce (1994) state that their meta-analysis of research "suggests that teachers have no reason to resist implementing incentive systems in the classroom" (p. 397). Verbal praise was shown to enhance intrinsic motivation "and the other rewards and reinforcement leave intrinsic motivation largely unaffected" (p. 398). Cameron and Pierce findings firmly support the views held by behaviorists that intrinsic motivation is not affected by extrinsic reward. Their research supports contributions of motivational theory espoused by behaviorists. The results of the meta-analysis point to the validity of instructional methods that offer rewards contingent upon performance.

Review of Comments on the Meta-Analysis

Following are reviews of three articles published by *Review of Educational Research* in 1996 in response to the 1994 meta-analysis by Cameron and Pierce.

Reaction 1

In "By All Available Means: Cameron and Pierce's Defense of Extrinsic Motivators," Alfie Kohn (1996) observes that after Cameron and Pierce (1994) give their definitions of intrinsic and extrinsic motivation, "it is not difficult to predict what conclusion they will reach regarding the effects of rewards on the former" (p. 1). Kohn's difficulties with Cameron and Pierce's meta-analysis is short and concise. His inference that Cameron and Pierce are "radical behaviorists" supports my opinions about their philosophy. The title of his article, "By All Available Means …" was a thinly veiled reference to the loss of data in the meta-analysis to establish homogeneity of means to calculate effect size for comparing studies. "By All Available Means …" also covers his other concerns: the omitting of relevant research, "blurring of important distinctions and drawing selectively from findings" (Kohn, 1996, p. 1).

Kohn's (1996) confirmation of the omission of important research from the meta-analysis is critical. The purpose of a meta-analysis is to consolidate research to build the body of knowledge and contribute to theory. By excluding research that conflicted with their philosophies, Cameron and Pierce contributed to the difficulties of establishing a sound theory base for making educational decisions. The issue of praise as "a verbal reward" and its implications on intrinsic motivation are pivotal to decisions that educators make when considering instructional programs. By combining studies that use different types of praise, the results are "camouflaged." Comprehending research is a difficult proposition without Cameron and Pierce compounding the issues by compiling dissimilar variables into the same categories

for analysis. Kohn (1996) proposes that "even a casual survey of the literature reveals research not included in Cameron and Pierce's review that attest to detrimental effects of rewards" (p. 3).

Kohn's (1996) insights on Cameron and Pierce's article should cause educators to return to the literature. After reading Cameron and Pierce, one might feel comfortable motivating students with rewards. Kohn reports, however, that "there is more than adequate justification for avoiding the use of incentives to control people's behavior, particularly in a school setting" (p. 3). Kohn does not establish the theory bases behind his arguments; however, he does relate Cameron and Pierce's bias toward behavioralism. The multitude of literature cited by Kohn lends credibility to his arguments. His direct statement regarding the use of rewards to alter behavior should serve as a caution to educators.

Reaction 2

"Intrinsic Motivation and Extrinsic Rewards: A Commentary on Cameron and Pierce's Meta-Analysis" by Mark R. Lepper, Mark Keavney, and Michael Drake (1996) is a response to the meta-analysis with a lengthy critical analysis. Lepper et al. (1996) surmise that the conclusion of the meta-analysis is over simplistic and "has little theoretical or practical value and is instead the direct consequence of their systematic and consistent misuse of meta-analysis procedures" (p. 5). The analysis begins with a section explaining "How to 'Verify' the Null Hypothesis." To Lepper et al. (1996), the difficulty is not with the use of meta-analysis in general but with the

methods used by Cameron and Pierce. They also found the categorizing of the finding of the studies in the meta-analysis problematic.

Lepper et al. (1996) systematically analyze every aspect of the meta-analysis. The statistical procedures receive considerable attention. Their explanations are detailed and involve an elaborate review of the statistical implications of the procedures used in the meta-analysis that are too sophisticated for this paper. They also address "real-world implications" as they relate to the interpretation of statistical data; however, these explanations are also complex. The concerns of Lepper et al. (1996) surround the use of "main effects" at the expense of the "interactions." The significance of the interactions of variables in the studies used in the meta-analysis should not be "lumped" together. Lepper et al. (1996) finally use understandable terms when they compare the Cameron and Pierce's (1994) meta-analysis to a delicious restaurant dessert that has been put into a blender and then sold as baby food. The reader is led to understand that something is lost is the process.

The strong philosophical views of Cameron and Pierce (1994) were also obvious to Lepper et al. (1996). They state from the beginning that strong views were not the issue for them as critics. Their concern is the misuse of the process of meta-analysis since the method was intended to remove bias in conflicting paradigms. Lepper et al. (1996) seek to inform the reader that the use of meta-analysis does "not guarantee objectivity" (p. 6).

Reaction 3

In "When Paradigms Clash: Comments on Cameron and Pierce's Claim That Rewards Do Not Undermine Intrinsic Motivation," Richard M. Ryan and Edward L. Deci (1996) come to the same conclusion as other reviews of the meta-analysis.

> Cameron and Pierce's conclusion that rewards do not pose a threat to intrinsic motivation is a misrepresentation of the literature based on a flawed meta-analysis. Their call to abandon cognitive evaluation theory is more an attempt to defend their behaviorist theoretical turf than a meaningful consideration of the relevant data and issues…. Cognitive evaluation theory, which Cameron and Pierce recommend we abandon, is theory not of rewards but rather of how factors affecting perceived autonomy and perceived competence influence intrinsic motivation. (p. 33)

Ryan and Deci (1996) have difficulty with the predisposition of Cameron and Pierce's loyalty to the theories of behavioralism and the methodology and procedures used in the meta-analysis. Ryan and Deci state that some of the findings in the meta-analysis were meaningful when interpreted through the cognitive evaluation theory; but, Cameron and Pierce (1994) disregarded the findings because they did not contribute to their paradigm.

The clash between paradigms seems to emanate from "issues of how rewards affect intrinsic motivation" (Ryan & Deci, 1996, p. 34). Ryan and Deci list studies that have constructed a taxonomy of reward types. The rewards at different levels of the structure have different effects on intrinsic motivation. Examples include task-non-contingent reward (i.e., given whether are not task is completed) and task-contingent reward (i.e., given only if the task is performed successfully). The problem with defining levels of rewards carries over into methodology. Since Cameron and Pierce do not differentiate between levels of rewards, they feel

comfortable collapsing rewards into one category for statistical analysis. Ryan and Deci's concepts of a taxonomy of reward types would cause them to have difficulty with collapsing reward types into one variable.

According to Ryan and Deci (1996), given the "crucial importance of intrinsic motivation" (p. 37), the findings of the meta-analysis are an obstacle to learning. They call for "all educators—behaviorists and non-behaviorists alike—to carefully appraise research on reward effects … to carefully reappraise Cameron and Pierce's meta-analysis before following them into the land of the null" (p. 37). Their response to the meta-analysis is based on differences in paradigms. The authors support their criticism by citing other research and presenting a logical argument for their statements. They state their concerns and suggest caution when considering Cameron and Pierce's (1994) work.

Response to Comments

Judy Cameron and W. David Pierce (1996) issue a strong response to the comments of Kohn (1996), Lepper et al. (1996), and Ryan and Deci (1996) in "The Debate About Rewards and Intrinsic Motivation: Protests and Accusations Do Not Alter the Results." The tone of the response is firm and matter-of-fact. The authors are not on the defensive, but rather appear to be put off that other researchers do not see the value of the meta-analysis. Cameron and Pierce (1996) state, "The results of our meta-analysis indicate that rewards can be used effectively to enhance or maintain an individual's intrinsic interest in activities" (p. 39). They state their research has "touched a nerve…. These findings are challenging to those who espouse the view

that rewards and reinforcement are generally detrimental to a person's intrinsic motivation" (p. 39). They respond to issues brought up by their critics. The degree to which they answer their challenges to their work, however, varies with the points of protest.

Cameron and Pierce (1996) organize their response in two sections. One section addresses concerns with their decision to begin the meta-analysis by examining the "overall effect of reward on intrinsic motivation" (p. 40). They defend this position with quotes that do not seem to support their findings. One example is: "… It has been repeatedly shown that if people are rewarded for performing a task they find intrinsically pleasurable, they do it less, not more" (p. 41). Cameron and Pierce seem to believe that because Kohn and others speak of reward in general terms, they are justified in collapsing reward into one variable in their meta-analysis. The other general criticisms addressed in the response are to the statistical methods used in the meta-analysis.

Cameron and Pierce (1996) challenge their critics to conduct additional statistical analysis on their data. They stand on their findings and repeat the "only negative effect of reward on intrinsic motivation occurs under a circumscribed set of conditions, namely, when rewards are tangible and promised to individuals without regard to any level of performance" (p. 41). Cameron and Pierce conclude by repeating that rewards can be used in educational settings without threatening intrinsic motivation.

Other Research on Motivation

During the time period this debate occurred, other researchers were investigating motivation in relation to specific instructional areas. In *Elementary Students' Motivation to Read*, a study for the Office of Educational Research and Improvement, Linda Gambrell, Rose M. Codling, and Barbara Palmer (1996) examined factors that enable children to acquire the motivation to develop into active, engaged readers. They used as their theory base current research that supports the notion that the "depth and breath of literacy learning is influenced by a variety of motivational factors" (p. 1). The study involved 330 third- and fifth-grade Maryland students who completed a Likert-type self-report and were interviewed. Gambrell et al. (1996) state that their findings support past research of perceived self-concept and perceived task value. They did not explain the findings of past research. Their study revealed access, choice, familiarity, and social interaction as key features of literacy learning which are reflected in the reading strategies selected for review in this dissertation. The findings of this study would not be generalizable to other populations. The instruments used in the study, however, would be beneficial to schools seeking to discover strengths and weaknesses of literacy learning in their school community.

Summary of Article Reviews on Motivation

Cameron and Pierce's works and the responses of their critics are based on different paradigms and theories. Whether either side has an adequate theoretical framework would be as debatable as the findings of the meta-analysis. Both sides attempt to support their paradigms. Because of the underlying bias presented in the

introduction of their research, Cameron and Pierce's (1994) findings were doomed to criticism from the beginning. Their bias toward behaviorism bound them to interpreting rewards and intrinsic motivation from a behaviorist perspective. It would have been interesting to see what the findings of the meta-analysis would have been if the terms were otherwise defined.

Kohn (1996), Lepper et al. (1996), and Ryan and Deci (1996) were in agreement that difficulties existed in the methodology. The units of inquiry are the root of this contention. Discovering this notion allows the reader of the meta-analysis to understand why Cameron and Pierce would even consider their research design and methodology. The issue is more than just a problem with definitions. It is a problem with the structure and interactions of the terms being defined. Since Cameron and Pierce do not recognize the taxonomy of reward theory, they cannot understand why there is such a *fuss* about collapsing variables involving different types of rewards into one category.

Cameron and Pierce's (1994) research design, methodology, and instrumentation are aligned. Their operational definitions are also present. The statistical procedures used were sufficient to answer the research questions, and the effect size is an appropriate measure for comparing studies; however, the inclusion of representative studies in the meta-analysis and the manipulation of the data to obtain the statistic are questionable. When answering their critics on these points, Cameron and Pierce simply repeat their reasons for their methodology used in the original work. These problems with the meta-analysis cause their findings to be debatable.

From the perspective of a behaviorist, the meta-analysis has possibilities of contributing to the refinement of theory in instruction. The lack of support, however, in the *Review of Educational Research* by other researchers causes some concern, especially when the voices of critics were so strong. While the critics have labeled Cameron and Pierce behaviorists, Cameron and Pierce (1996) only spoke of "those who espouse" a different view (p. 39). They never claim the title of "behaviorists." Cameron and Piece (1996) call the differences of opinion a "debate" while Ryan and Deci (1996) call it a "clash." No matter what the labels, the differences of opinions surrounding instructional theory are a cause for concern. Valid research in instructional theory is necessary to improve instruction. The differences in paradigms and controversy over findings have great implications for educators who are making decisions regarding instruction.

Gambrell et al. (1996) examine students' motivation to read in an attempt to directly address an area of concern in instruction. The problem is that they do not draw conclusions from their study that other educators would be able to implement. They simply state their findings and suggest that the instruments would be appropriate for "assessment of children's reading motivation" (p. 32). Why do they not take a stance? Perhaps, they are afraid of criticism.

As programs are created to address the needs of students, who are involved in programs like the Adaptive Behavior Center in Harris County and in schools using the Accelerated Reader, it is essential that we know what works. We need to know that when teachers use rewards, they are not lessening students' intrinsic motivation to learn. What if Kohn, Lepper, Keavney and Drake, and Ryan and Deci are correct,

and use of rewards is killing intrinsic motivation in learners? What do we do with findings like those of Gambrell et al. (1996) that lack implications?

Deming's Perspective on Motivation

Considering the consequences to learners when implementing instructional practices, it is imperative to consider various perspectives of motivational theory. The purpose of this section of the dissertation is to consider educational applications of the theories of motivation as presented by W. Edwards Deming through his ideas of Total Quality Management. "While it is noted that Total Quality Management is most effective when implemented throughout an entire organization, it is instructive to examine the application of TQM to specific processes.…" (Cole, 1995, p. 61). The structure of this section will be first, to offer Deming's perspective of motivation in the classroom; and finally, to note selected educators' considerations of Deming's ideas surrounding motivation with a special emphasis on "Reinforcement, Reward, and Intrinsic Motivation: A Meta-Analysis" by Judy Cameron and W. David Pierce (1994).

Valid research is essential for educators to consider when designing educational practices. Cameron and Pierce's findings firmly support the views held by behaviorists that intrinsic motivation is not affected by extrinsic reward. The results of the meta-analysis validate current educational practices that offer rewards contingent upon performance. How do these findings align with W. Edwards Deming's ideas?

Deming's Perspective

W. Edwards Deming, an American statistician, began the Total Quality Movement as result of his dream for "the American economic system to maintain its edge in what he perceived as a growing global market" (Leuenberger & Whitaker, 1993, p. 1). Deming enumerated 14 points for business to follow to be successful in "total quality management." The 14 points have since been adapted to the field of education. In the educational arena, the total quality movement has focused its "energies on school governance, curriculum design, instructional practices, and student outcomes" (Leuenberger & Whitaker, 1993, p. 4). Four of Deming's 14 points specifically address aspects of motivation: (1) drive out fear; (2) break down barriers between staff areas; (3) eliminate slogans, exhortations, and targets for the work force; and (4) numerical quotas for the work force and numerical goals for management (Vertiz & Downey 1993).

Deming's own words best explain his beliefs about intrinsic and extrinsic motivation in the classroom. In 1992 at the conference for Shaping America's Future III: Proceedings of the National Forum on Transforming Our System of Educating Youth, Deming (1992) decried systems of competition in American education:

> For example, grading in school; that's competition. It takes the joy out of our learning. I like to think of it this way. I have a chart. Along the top, Forces of Destruction. Forced distribution of grades, for example only 20% "A's allowed. You mean there is a shortage of good pupils. I don't believe it. You create a shortage, but the shortage is not natural. Gold stars, in other words, competition to get to the top of the job merit system, only one in eight permitted to get outstanding, the others must be lower. You mean there's a shortage of good people?…. Now, what happens, on the lower part, one is born with intrinsic motivation, self-esteem, dignity, cooperation, curiosity, and a yearning for learning. These attributes are high at the beginning of life, but we gradually squeeze them out by the forces of destruction: grades, rating, ranking.

> We squeeze out what one is born with—intrinsic motivation, yearning for learning, curiosity—and build in its place humiliation, fear, self-defense, competition for gold stars, competition for higher grades in school, competition for higher rating on the job. It leads anyone to play to win, not for fun. It cuts our joy and learning. It cuts out joy on the job, innovation. Extrinsic motivation in extreme, not just a little extrinsic motivation, extrinsic motivation, and complete surrender to external pressure takes over and gradually replaces intrinsic motivation, self-esteem, and joy. That's what's going on in the schools, on the job, everywhere. You like it? What does it take to change it: The first step is the transformation of the individual. Once the individual transforms, then the rest follows. (Deming, 1992, pp. 9-10)

Without a doubt, Deming's view is that the problems with our current educational system stem from competition. He believes that the educational practices of grading, ranking, and ratings are contrary to increasing motivation in students. He also called the Department of Education's goals stated in America 2000 "a horrible example of nonsense" and related that student's joy for learning, intrinsic motivation, is stifled by current educational goals (Deming, 1992). What are educators doing as a result of Deming's call for action?

Although Cameron and Pierce's (1994) findings indicate that a meta-analysis of 96 studies indicate that "rewards and reinforcement leave intrinsic motivation largely unaffected" (p. 398). Many educators are considering Deming's ideas. In a paper presented at the Annual Meeting of the University Council for Educational Administration, Jesse E. House (1992) considers the redesigning of educational administration preparation programs. He used the framework of the National Commission for the Principalship to discuss Deming's theory. One of the Commission's domains House develops is motivating others. House refers to point eight, for the elimination of fear, in Deming's list "as a necessary action in most

schools if higher levels of trust are to develop" (p. 13). He cautions that manipulation of extrinsic reward is an area where administrators should concentrate when seeking to establish trust. House recognizes that the basis of motivation in the individual is essential to the success of the system, and concludes by stating that principals operating from Deming's perspective would remove barriers to teamwork that interfere with common purpose.

Virginia C. Vertiz and Carolyn J. Downey (1993) in their paper entitled "The Quality Fit" discuss the importance of building intrinsic motivation to enhance the educational process. They compare the American Association of School Administrators' (AASA) Curriculum Management Audit with Deming's four areas of profound knowledge and 14 points for Total Quality Management. Vertiz and Downey comparisons indicate "significant overlap" between the audit system and the principles of quality management (p. 15). For example, both systems focus "on optimization in the system in which departments or units are encouraged to work together in a cooperative, rather than a competitive, fragmented way (p. 5). Deming relates teamwork directly to intrinsic motivation. When considering the Knowledge of Psychology as a subset of Deming's theory of Profound Knowledge, Vertiz and Downey (1993) relate:

> Managers must optimize the abilities and talents of each individual, while managing the interactions between them. It is also important that they understand how people are motivated and that they know how to reinforce intrinsic motivation. Monetary and other rewards can destroy intrinsic motivation (p. 7-8).

An implication for educators to consider is that the quality movement promotes leaders who understand people's motivation (Vertiz & Downey, 1993).

Myron Tribus (1993) in "TQM in Education: The Theory and How To Put It To Work" develops the movement of quality from business to education. Tribus characterizes specific TQM tenets surrounding motivation that are applicable in the classroom. He relates that people learn best what they feel they need to know. It is an important task of the teacher to "provide a basis for internal motivation towards a subject" (p. 16).

Tribus (1993) states that one of the most difficult tasks for the teacher is to relinquish the use of external motivators. His list of "unhealthy external motivators" include:

(a.) Competitions for prizes;
(b.) Grading students "on the curve";
(c.) Threats regarding poor performance;
(d.) Special honors for good performance;
(e.) Segregation of students into different classes by "ability";
(f.) Criticism without appreciation of accomplishment. (p. 17)

Applications in the classroom to build intrinsic motivation should be founded in practices which contribute to the "learner understanding what it means to do something very well" and internal motivators that stimulate learners to be part of a team (Tribus, p. 17).

Mark L. Richie (1994) in his book, *Quality Management for Educational Technology Services*, states, "How people learn and how people are motivated are viewed by Dr. Deming as the two most important aspects of psychology to know about" (p. 66). He challenges managers to understand the differences in intrinsic and extrinsic motivation. It is necessary for each individual to operate at full capacity to maximize the efforts of the system to reach full capacity.

Richie poses the following questions: “Why do we insist on recognizing the valedictorian in a graduating class? and What is the message we send by ranking students?” (p. 68). Richie calls for changes in educational practices by halting the use of extrinsic rewards which lessen intrinsic motivation within students .

In “The School for Quality Learning,” Crawford, Bodine, and Hoglund (1993) consider each of Deming’s Fourteen Points in light of educational issues. In Point 8—Drive Out Fear, Point 9—Break Down Barriers Between Staff Areas, Point 10—Eliminate Slogans, Exhortations, and Targets for the Work Force, and Point 11—Eliminate Numerical Quotas, the authors discuss the impact of management’s understanding the differences between intrinsic and extrinsic motivation. The following statement explains the differences between traditional education and TQM tenets surrounding motivation: “To eliminate fear, principals and teachers must strive to create an environment where intrinsic motivation is understood, is valued, and is the inspiration for learning” (p. 27).

The review of literature consists of articles selected for a search using TQM and motivation as key words. Every article available from the search results is listed in the review of literature. Interestingly, all of the authors’ opinions are aligned with Deming’s perspectives, as enumerated in his statement to the National Forum on Transforming Education. His ideas, however, are still thought to be revolutionary educational practices by many.

Comparison of TQM with Other Motivational Theories

Currently, the majority of management and administrative systems used in the educational process are founded in scientific management, as constructed by Fredrick Taylor. The Theory of Bureaucracy as proposed by Max Weber is also evident in the organization of today's schools with hierarchies, rules and regulations, and specialization of tasks to promote "survival of the fittest" (Holmes, 1993). Schools are dependent on scores and results of testing to justify their success. These same tenets influence practices that impact students' motivation toward learning. Douglas McGregor captures in his Theory X and Theory Y beliefs surrounding human nature toward work or learning when applied to students.

W. Edwards Deming presents a new paradigm for considering workers' or students' motivation toward work and school. Table 3 is a chart presented in *Skills for Successful 21st Century School Leaders* by Hoyle, Steffy, and English (1998) which summarizes McGregor's Theories X and Y and Deming's TQM toward motivation and work. A review of the differences in Theories X and Y and Deming's TQM ideas illustrates the progression of thought moving from competition between individuals to teamwork and from external motivators to intrinsic motivation.

The tenets of TQM enumerated below are linked with constructivist learning theories that are currently gaining in acceptance and practice in the classroom. According to internal motivation theorists, it is important to allow students to make choices about what they do and how they do it (Hoyle et al., 1998).

TABLE 3. A Summary of McGregor's Theories X and Y and Deming's TQM

Theory X	Theory Y	TQM
People dislike work and will avoid it.	Work is as natural as play.	Workers take pride in doing things properly.
People must be forced to work.	People are self-directed and will strive to accomplish objectives.	Workers will produce quality in a quality system.
People want to be directed and will avoid responsibility.	People will learn to accept and seek responsibility.	Workers will look for defects and check for quality.

TQM is different from other theories of management in that it concentrates on systematizing the process based on the transformation of the individual and their beliefs surrounding motivation. Workers in an organization that are permitted "to have a say" in their destiny give their organization a greater opportunity for success. "This view corresponds to Deming's belief that intrinsic motivation is a key stimulator and that extrinsic motivators, while important, have less impact upon the efficiency and productivity of the worker" (Leuenberger & Whitaker, 1993, p. 1). To promote quality in education, leaders must understand people's motivations and evaluate current practices in light of Deming's perspectives of TQM.

Many school districts are implementing quality management in their administrative process. How many are carrying the practices into the classroom? Research like Cameron and Pierce's (1994) meta-analysis often impacts educational practice. It is, therefore, important for educators to review research with a critical eye when determining best practice as presented in research.

Cameron and Pierce's (1994) works are based on different paradigms and theories of motivation than that of Deming's. Whether or not either side has an adequate theoretical framework would be debatable. Because of the underlying bias presented in the introduction of their research, Cameron and Pierce's (1994) findings should be questioned by the critical reader from the beginning. Their bias toward behaviorism bound them to interpreting rewards and intrinsic motivation from a behaviorist perspective. Again, it would have been interesting to see what the findings of the meta-analysis would be if the terms could be otherwise defined. It would have been interesting to know if Cameron and Pierce would have concluded "that teachers have no reason to resist implementing incentive systems in the classroom" (p. 397) if they had looked at their meta-analysis with a new paradigm.

As Deming suggests, researchers should be open to studying new paradigms. Deming's principles may not fit nicely into existing theoretical framework. Those frameworks may need to be expanded and adjusted. New discoveries are made daily in other disciplines. A meta-analysis of almost 100 studies should present findings that would inform instruction regarding the implications of reward on intrinsic motivation. Educators could gain a false sense of security by reading the meta-analysis. While researches may gain prestige from "debates" and "clashes" in professional journals, the "kids are paying the price." Deming's principles have been so successful in other arenas. Why are educators and others responsible for the process of education so reluctant to change paradigms surrounding the educational process? What would happen if we did away with grading, ranking, and rating in the

classrooms across America? What would happen if leadership sought to build intrinsic motivation by considering the needs of each student?

As programs are created to address the needs of students, it is essential that we know what works. We need to know that when teachers use rewards that they are not lessening students' intrinsic motivation to learn. What if Deming and others are correct and current educational practices are decreasing intrinsic motivation in learners?

Overview of Accelerated Reader

The Accelerated Reader or AR was developed as a tool to assist teachers with the tasks of monitoring students reading progress and to motivate students to read more, thus improving their reading comprehension. The reading program was developed by Terrance and Judith Paul in 1993. Terrance Paul holds a Juris Doctor degree from the University of Illinois, and a Masters of Business Administration degree from Bradley University. Paul focuses his research on motivational techniques. He is chairman of The Institute for Academic Excellence, Inc., which publish his papers in support of the AR program. Paul describes AR as a "computerized reading management system" (Paul, 1996, p. 29). Judith Paul serves as chairman of Advantage Learning Systems, Inc., the company that publishes AR. As Paul relates that the AR program gives educators a choice of materials and techniques to use in their school's reading program. The question for educators is: Are the AR strategies the best choice of materials and techniques for use with their students? (Advantage Learning Systems, Inc., 1999).

Reviews of Accelerated Reader

While AR is a multifaceted reading program—and many educators are convinced that it is a valuable tool to improve literacy—other educators are concerned with the validity of the program and specifically with the methods used by schools when implementing the program. The following is a review of the characteristics of the AR program.

A report on the Website of The International Reading Association, Inc. (1999c) states that, AR is "a learning information system that enables freestanding computer-assessment of student comprehension of 'real' books." The report relates Advantage Learning system's claims that AR facilitates:

- More frequent and more detailed assessment in less time and with greater consistency
- Formative feedback for students
- Student development of metacognitive awareness
- Increased student motivation to read more, longer, and harder books
- Formative feedback for the teacher
- Class-wide diagnostic information, including alerts regarding students who are at risk
- Teacher promotion and management of effective reading practices (International Reading Association, Inc., 1999c).

In *What are the Characteristics of a Successful Implementation of Accelerated Reader?*, Jennie M. Persinger (2001) describes her qualitative case study to determine

the factors used to develop a successful AR program. Since it is up to individual schools to follow the recommended implementation methods and provide staff development opportunities for their staff, Persinger sought to discover the characteristics of a successful program. Her study was limited to one school; however, she conducted in-depth interviews with students and teachers in the natural school setting. Persinger relates the guidelines given by AR to implement the program as given by Topping in "Formative Assessment of Reading Comprehension" are as follows:

- Teachers using the program must be adequately trained in its use.
- Student participation in the program should be voluntary.
- Rewards should be used only when necessary to maintain student motivation.
- Any rewards used should be related to reading.
- Extra class time must be allotted for reading (Persinger, 2001).

The following is a list of both the positive and negative conclusions from Persinger's study.

- Students seem to be reading more actively.
- Students seemed to read for the recognition their achievement brought them through the extrinsic rewards both for themselves and their classes.
- Some teachers excluded remedial reading students from participation in class competitions for AR points because their scores would lower the class points in school-wide competitions.

- Student's choice of books were limited to the AR collection; however, students seemed to think their choices of books were plentiful.
- Additions to the AR collection of books and test are controlled by budget limitations.
- Student's selection of books was often determined by the number of AR points gained from reading and passing the AR computer test.

Persinger recommends that schools using AR allow teachers and students to opt out of the AR program. She also relates that using AR points for grades creates pressures that work against the program increasing an intrinsic value for reading (Persinger, 2001).

In "Formative Assessment of Reading Comprehension by Computer" on the International Reading Association (International Reading Association, Inc., 1999c) Website, Topping states that Accelerated Reader is "not a substitute for balanced reading instruction." In "What is the Accelerated Reader?" on the Website of the International Reading Association, Inc. (International Reading Association, Inc., 1999b) characterizes the AR program as it is promoted by its publisher, Advantage Learning System. The article states that AR is a program developed in the United States and is part of a larger curriculum-based program called Reading Renaissance with extensive training opportunities available for teachers. Despite the availability of staff-development to assist with implementation of AR, AR is used differently from school to school. Critics of the program explain that funding and time often keeps schools from sufficient staff development for the program to be implemented properly (International Reading Association, Inc., 1999b).

Topping also worked on *Computerized Self-Assessment of Reading Comprehension with the Accelerated Reader: Action Research* with Vollands and Evans. This quasi-experimental action research was conducted in two schools in severely socio-economically disadvantaged areas.

The results suggested that the program, even when less than fully implemented, yielded gains in reading achievement for these at-risk readers that were superior to gains from regular classroom teaching and an alternative method, even with less time devoted to class silent reading practice than in comparison classes. Additionally, the program yielded significant improvement in measured attitudes to reading for girls (Vollands, Topping, & Evans, 1999).

Elaine K. McEwan (2002) in *Teach Them All to Read: Catching the Kids Who Fall Through the Cracks*, comments, "The recent trend toward computer-based motivational reading programs such as the Accelerated Reader and Reading Counts, has left the mistaken impression with some teachers that they no longer need to be concerned about either what or how well their students are reading because the computer will handle that" (p. 95). She continues by stating that the computer testing used by AR use "relatively easy factual questions" and that the students often spend more time trying to beat the computer than reading the book. Another of her concerns is that the books the students are reading are not necessarily on the students' instructional reading level. McEwan believes that the time and energy teachers are using to motivate the student to read with computer points and prizes often takes more time than encouraging "students' creativity, personal response, and interpretation while still ensuring accountability" (p. 95). She reports that she even

jogged around her school in a 1920s bathing suit to celebrate the number of AR points gained by her students. McEwan relates that the 2000 report from the National Reading Panel "found no solid experimental evidence to support reading a lot as a method that was causal related to improvements in reading level" (p. 26).

In addition to the need for further research, McEwan (2002) states that to improve student reading the following questions need to be addressed:

1. Are the books students reading at the appropriate difficulty level?
    a. Are students learning new vocabulary?
    b. Are students acquiring new learning?
    c. Are the books too difficult for the students to comprehend?
2. How are students being held accountable for the books they read?

She continues by stating that levels of literacy will not increase unless students are "held accountable for talking and writing about what they have read, that may not make the effort needed to comprehend difficult text or to look up the meanings (p. 26). McEwan suggests that if the reader is engaged in the construction and reconstruction stage of brain-based reading when using prior knowledge to synthesize and analyze the material students will experience greater success in reading (McEwan, 2002).

How does a computer measure this type of engagement? While the AR program contains strategies to address these elements, for the program to be successful toward improving student success in reading, the program must be implemented in a manner

that addresses McEwan's concerns. While the computer is a strong motivator for students and a great assistant for record keeping for the teacher, it seems that the interaction between the teacher and student is necessary to improve student literacy in reading.

This review establishes the context within which this dissertation has been conducted and provides relevant background for the study.

CHAPTER III

METHODOLOGY

Introduction

In this chapter, the research design, the population, instrumentation, and data analysis procedures for this study are presented. The research design for this study was descriptive. Parameters, which are descriptive measures of a population, were used since 721 members of the population were surveyed. Two hundred and fifty-two principals responded. A questionnaire (Appendix A) using a Likert-type scale for the principal's responses was used to collect the data. Principals' perceptions were measured to determine the degree of implementation and impact of AR and other selected reading strategies. Data analysis was conducted for the total population of principals of selected elementary schools and then analyzed by the categories of AR and non-AR schools. Since the data collected on the Likert-type scale are ordinal, various non-parametric and parametric measures including Chi-square and ANOVA tests are used (Hinkle, Wiersma, & Jurs, 1998). The assumptions and limitations of the methodology of the study were included in this chapter.

Purposes of the Study

Two purposes were established for this study: (1) to identify the principal's perception of the levels of implementation and impact of selected reading strategies used by teachers or personnel in selected elementary schools in Texas to improve student success in reading and (2) to determine the principal's perception of the

extent to which AR and AR-like recommend practices are used in selected elementary schools in Texas.

Research Questions

To address the purposes of the study, six questions regarding the principal's perceptions were addressed.

1. What are the principal's perceptions of the level of implementation and the level of impact of selected reading strategies implemented by selected elementary schools in Texas?
2. What are the principal's perceptions of the level of implementation and the level of impact of AR recommended reading strategies in selected elementary schools in Texas?
3. What are the principal's perceptions of the level of implementation and the level of impact of AR-like recommended reading strategies in selected non-AR schools?
4. Are there significant differences between selected AR and non-AR schools in the principal's perceptions of the level of implementation and level of impact of selected reading strategies?
5. Are there significant differences between the principal's perceptions of the level of implementation and level of impact of AR recommended strategies used in selected AR elementary schools and AR-like reading strategies used in selected non-AR schools in Texas?

6. What selected reading strategies have the highest reported level of implementation and level of impact by principals in selected elementary schools in Texas?

Population

The population of this study included the principals from Texas elementary schools with grades three through five earning the Gold Performance Acknowledgment (GPA) for Comparable Improvement in Reading (CIR) for 2002. To identify the selected elementary schools, the list of schools earning the GPA for CIR was downloaded from the Texas Education Agency Website and analyzed to determine the elementary schools earning the recognition. Questionnaires were mailed to the principals of all elementary schools in Texas earning the GPA for CIR for 2002. The population was 721.

Instrumentation

The questionnaire (Appendix A) used in the study was developed following the guidelines provided in *Educational Research: An Introduction* (Gall, Borg, & Gall, 2003). The intent of the questionnaire was to measure the principals' perceptions of the level of implementation and impact of AR and other selected reading strategies in selected schools in Texas with improved reading scores. The reading strategies used in the questionnaire were selected after a review of current literature and research in reading practices for the elementary school level. Additionally, the reading strategies

used in the survey have similar characteristics to the reading strategies that AR recommends for use in implementing their reading program.

The questionnaire consisted of a stem and a Likert-type response scale with two levels of responses. The first response sought the principal's perceptions of the level of implementation of the selected reading strategies—Not Implemented, Minimal Implementation, Moderate Implementation, and Significant Implementation. The second level of response provided the principal's perception of the level of impact of the selected reading strategies—No Impact, Minimal Impact, Moderate Impact, and Significant Impact. The directions on the questionnaire instructed the principals to indicate the appropriate level of implementation and appropriate level of impact of the specified strategy toward improving student success in reading in their school.

The instrument was divided into three parts. Part I of the instrument was designed to determine specific reading strategies used by the selected elementary schools and to determine if the school used AR as part of their reading program. Part II of the instrument was to be completed only by schools using AR. Part II, Section A was used to gather the following variables for schools using AR: the grade levels using AR, the length of time AR has been used, and the position of the person responsible for making implementation decisions concerning the AR program. Question stems were designed to determine if the implementation procedures and common practices used in the school's AR program reflected those recommended by AR. The 16 questions in Part II, Section B were designed to measure the principal's

perceptions of the levels of implementation and impact of the selected reading strategies used in the school's AR program.

Part III of the questionnaire was to be completed by principals of schools not using AR. The stems of Part III questions were parallel in design to the stems of questions in Part II, Section B for AR schools. The comparison of question stems from Part II and Part III of the questionnaire are shown in Table 4. The questions were designed in this manner in order to determine if the same types of reading strategies as those recommended by AR are implemented in schools that do not use the AR program.

TABLE 4. Stems Used for Comparison of AR and AR-like Reading Strategies in Questionnaire from Part II and Part III

Part II: AR Reading Strategies	Part III: AR-like Reading Strategies
Students select their own AR books.	Students select their own books for independent reading.
Students' AR reading levels are determined by using Star Reading.	Students read books on their independent reading level.
Students take AR Reading Practice Quizzes.	Students take test on the books they read.
Students and teachers use AR reports in conferences to direct reading practice.	Students and teachers conference to direct reading practice.
Students have set reading goals in the AR program.	Students have set reading goals.
Students keep track of their own AR points.	Students keep track of their progress toward their reading goals.
Students' achievement of reading goals are posted in classrooms, hallways, and/or the library.	Students' achievement of reading goals are posted in classrooms, hallways, and/or the library.

TABLE 4. Continued

Part II: AR Reading Strategies	Part III: AR-like Reading Strategies
Students receive certificates for earning AR points.	Students receive certificates for reading books.
Students earn awards other than certificates for AR points.	Students earn rewards other than certificates for reading books.
Our school has a store for students to spend earned AR points.	
Students receive grades on their report cards for AR points.	
Teachers receive professional development training in AR.	
Students take AR Literacy Skills Test.	
Our school uses AR testing correlated with our textbook series.	
Our school uses AR testing correlated with popular educational magazines.	

Pilot Study

A pilot study questionnaire packet was mailed to 47 elementary schools that were members of the population of the study. The pilot study group was selected because of the diverse demographic makeup of the schools. The questionnaire packet included the questionnaire, a cover letter explaining participation in the pilot study and requesting the principal's recommendations for improving the questionnaire (Appendix B), and the required university cover letter (Appendix C). Space was provided for the pilot study respondents to indicate changes and revisions to the questionnaire. While several principals, who returned the questionnaire, did write

comments on the questionnaires, no recommendations were made to improve the instrument. A panel of experts established content validity of the instrument and reliability was determined by evaluating the consistency and completeness of responses on the questionnaires returned in the pilot study.

The 47 pilot study packets were mailed to the selected principals in late October, 2003. Soon after the mailing, the school district research department in which the pilot study schools were located notified the researcher that permission to conduct research in the district was required. After completing all the documentation required by the school district, the request to conduct research in the district was approved by the district. In mid-November, the questionnaire packets were mailed again to the 47 principals selected for the pilot study. By mid-December, 10 (21%) of the questionnaires were returned. Telephone calls were made to the 37 school principals who had not returned the questionnaire. Nine of the principals requested that the questionnaire be faxed to them. The questionnaire was faxed to the principals; however, none were returned. Two of the principals contacted by telephone stated that they did not choose to participate in the study.

Procedure

For the purposes of this study, schools earning the Gold Performance Acknowledgement (GPA) for Comparable Improvement in Reading (CIR) on the 2002 Texas Assessment of Academic Skills (TAAS) from the Texas Education Agency (TEA) were considered to be selected elementary schools in Texas exhibiting

student success in reading. A list of the selected elementary schools was formulated from a 2001-2002 Academic Excellence Indicator System (AEIS) report obtained from the TEA's Web site. The AEIS report listing the 721 schools earning the GPA in CIR for 2002 was generated and printed to identify the Texas elementary schools with student success in reading.

Using Texas Education Directory (TED), mailing addresses for current principals of the selected elementary schools were exported into a spreadsheet. A mail merge process generated mailing labels and personalized the principals' addresses on the transmittal letter. The transmittal letter was created to explain the purpose of the study, to encourage principals to return the questionnaire and to inform study participates of their rights as required by the university.

The transmittal letter (Appendix C), questionnaire, and a stamped, self-addressed envelope, to facilitate the return of the questionnaire, were mailed to principals of the selected elementary schools. After conducting the pilot study and discovering that some school districts may require prior approval for research to be conducted in their districts, a Web search was conducted for all districts involved in the study. The search was conducted to determine which districts required prior approval for research to be conducted in the district. Several districts did require approval. The appropriate requests and documentation were provided to these districts. Approval to conduct research in the district was received from all the districts. Questionnaire packets were then mailed to the selected principal's in the districts as approval for research were received from each district. Several of the districts approved the

research with the condition that the only contact with the principal be the mailing of the initial questionnaire.

Questionnaire packets were mailed to the principals in districts that did not require permission for research mid-January, 2004, with a receipt deadline of January 26, 2004. All questionnaires were coded to ensure tracking.

The principals were asked to complete the questionnaire, which was designed to determine the reading strategies used by the schools. By returning the questionnaire, participants were consenting to participate in the study. A check box on the questionnaire provided participants the opportunity to indicate their desire to have the results of the study mailed to them.

By early March 2004, 252 questionnaires or 35% of the population of 721 were returned. Second mailings were sent to many schools; however, limitations set by some districts precluded second mailings or additional contacts to all schools. Tables by Krejcie and Morgan (1970) validate that a return rate of 252 is satisfactory when a population of 721 is surveyed. "For descriptive research, a sample of 10% the population is considered minimum. For smaller populations, 20% is required" (Gay, 1992, p. 137). Additionally, since the entire population was surveyed and multiple contacts conducted during the pilot study yielded a return of 21%, the return of 35% of the population was considered adequate.

Data Analysis

Description of Data

Quantitative data were obtained using basic questionnaire research as outlined in *Educational Research: An Introduction* (Gall, Borg, & Gall, 2003). The population and the measurement scale used in the study were considered to determine the analytical tools to be used for this study. Since members of the population were mailed a questionnaire in this study, parameters were used to measure the characteristic of the population, rather than statistics that would be used with a sample drawn from the population. While the entire population did not participate, the number of respond-ents who returned questionnaires was more than the number required for a sample of the population would have been. The next step in the analysis was to determine the type of scale used for measurement of the variables in the study.

After a review of scales of measurement presented by Hinkle et al. (1998), the scale used in the questionnaire was determined to be ordinal. Because the responses on the questionnaire are the principals' perception, a Likert-type scale was used. The scale used in this study satisfies the following properties of ordinal data.

1. Data categories are mutually exclusive.
2. Data categories have some logical order.
3. Data categories are scaled according to the amount of a particular character-istic measured (Hinkle et al., 1998, 14).

Nonparametric tests were used since the parametric assumptions of normality and homogeneity of variance are not met when the dependent variables are measured on the ordinal scale (Hinkle et al., 1998). Mean and standard deviation were used to evaluate the collected data. In *Educational Research: An Introduction,* Gall et al. (2003) state, "The mean generally is considered the best measure of central tendency" (p. 132). Additionally, a correlation design, using factorial analysis, was used to determine the extent to which variations in one factor correspond with variations in one or more other factors (Isaac & Michael, 1995). "Independent variables are variables that the researcher controls, manipulates, or classifies in accordance with the purpose of the investigation. A dependent variable is a measure of the effect of the independent variable" (Hinkle et al., 1998, p. 12). The independent variable in the study was the classification of selected elementary schools into the categories of AR schools and non-AR schools. Dependent variables include improvement of student success in reading using selected reading strategies. The selected reading strategies are represented in the stems of the questions on the questionnaire. Using the results from the questionnaire, data were compiled and analyses were performed on the data using Statistical Package for the Social Sciences (SPSS) 10.5 for Windows. Information from the analysis was used to answer the research questions. Descriptive statistics were used to simplify and summarize the data. Results of the data analysis are presented in tables, charts, and graphs.

Other nonparametric tests, cross tabs and chi-square were used. According to Gravetter and Wallnau (1995), "Nonparametric tests usually do not state hypotheses

in terms of specific parameters and that they make few (if any) assumptions about the population distribution" (p. 373). Chi-square was used to measure how well the data fit the hypothesis by measuring the differences between observed frequencies (f_o) and expected frequencies (f_e) in the data.

Analysis of Data for Research Question One

Research Question One asked, "What are the principal's perceptions of the level of implementation and the level of impact of selected reading strategies implemented by selected elementary schools in Texas?" Research Question One was answered using the data gathered from Part I of the questionnaire. This question was addressed using descriptive statistics. Questions 1 through 9 from Part I of the questionnaire were used to report the principals' perceptions of implementation and impact. Frequency counts and percentages were used to describe the data.

Analysis of Data for Research Question Two

Research Question Two asked, "What are the principal's perceptions of the level of implementation and the level of impact of AR recommended reading strategies in selected elementary schools in Texas?" Research Question Two was addressed by using descriptive statistics from data gathered from Part II of the questionnaire. Part II, questions 1 through 16 of the questionnaire, was completed by principals of schools using the AR program. The principals' perceptions of implementation and impact from Part II were reported by frequency counts and percentages.

Analysis of Data for Research Question Three

Research Question Three asked, "What are the principal's perceptions of the level of implementation and the level of impact of AR-like recommended reading strategies in selected non-AR schools?" Research question three was analyzed by reporting principals' perception of the level of implementation and level of impact of AR-like recommended reading strategies in schools where the AR program was not used. Frequency counts and percentages from Part II, questions 1 through 10 were used to report the principals' perceptions of implementation and impact.

Analysis of Data for Research Question Four

Research Question Four asked, "Are there significant differences between selected AR and non-AR schools in the principal's perceptions of the level of implementation and level of impact of selected reading strategies?" Question Four was analyzed by using a t-test for Significance of Group Statistical Differences and a General Linear Model Within Subjects Factors in the principals' perceptions of implementation and impact between AR and non-AR schools. Data gathered from Part I, questions 1 through 8 were used.

Analysis of Data for Research Question Five

Research Question Five asked, "Are there significant differences between principal's perceptions of the level of implementation and level of impact of AR recommended strategies used in selected AR elementary schools and AR-like reading

strategies used in selected non-AR schools in Texas?" Data gathered from Part II, Section B, questions 1 through 16 were used to analyze Question Five. A t-test was used to analyze the means of the collapsed variables for questions 1 through 16. Additionally, a General Linear Model Within Subject Factors, a Multivariate Text and Crosstabs and Chi Square were used with data from Part II, Section A were used to analyze data to answer Question Five.

Analysis of Data for Research Question Six

Research Question Six asked, "What selected reading strategies have the highest level of implementation and level of impact by principals in selected elementary schools in Texas?" Part I, questions 1 through 9 were used to measure the principals' perceptions of implementation and impact of selected reading strategies. Means, standard deviations, Chi-Square and Crosstabs were used to compare and contrast the data. Additionally, ANOVA was used to evaluate between subject factors and effects.

Coding of Data

Hinkle et al. (1998) state, "When a variable is measured on an ordinal scale, differences in the *amount* of the measured characteristic are discernible, and numbers are assigned according to that amount" (p. 14). The principals' responses on the Likert-type scale were coded from 1 to 4 to allow for manipulation of the data. Each

variable was defined and assigned a variable label and each response was assigned a value label:

- First scale
  - Not Implemented—Value 1
  - Minimal Implementation—Value 2
  - Moderate Implementation—Value 3
  - Significant Implementation—Value 4
- Second scale
  - No Impact—Value 1
  - Minimal Impact—Value 2
  - Moderate Impact—Value 3
  - Significant Impact—Value 4

The above values were used to code response of all 252 returned questionnaires into the SPSS data sheet. The researcher proofed the code sheet for entry errors and corrections were made to the data sheet. After the responses were coded reliably of the questionnaire was determined. Content validity had been determined before the questionnaires was mailed

Reliability of the Questionnaire

The alpha reliability of the questionnaire was calculated in SPSS. The analysis reported includes the number of cases, the number of items, and reliability estimates. Part II, Section A was not included in the calculations of reliability. Reliability of the

questionnaire was calculated for Parts I, IIB, and III together and Parts I, IIB and III as separate units. Alpha equals .9697 for Parts I, IIB and III; Part I equals .5987; Part IIB equals .894; Part III equals .8282.

Content Validity of the Questionnaire

Content validity was established by a panel of experts and by the participants of the pilot study.

Assumptions and Limitations of the Methodology

Assumptions

1. An assumption of this study was that a school earning the GPA for CIR indicates an increase in student achievement in reading.
2. The instrument used in this study identified reading strategies used in successful elementary schools in Texas.
3. The instrument used in this study identified implementation and impact of procedures and common practices used in successful AR elementary schools in Texas.
4. The respondents surveyed objectively and honestly answered the questions posed to them regarding the study.
5. The interpretation of the data collected accurately reflects that which was intended by the responding parties.

Limitation

This study is generalizable to Texas elementary schools with grades three through five for the three-year period 1999 through 2001 earning the GPA for CIR in 2002 and that schools earning the GPA for CIR in 2002 indicates an increase in student achievement in reading.

CHAPTER IV

RESULTS OF THE STUDY

Introduction

This study had two purposes: (1) to identify the principal's perception of the levels of implementation and impact of selected reading strategies used by selected elementary schools in Texas to improve student success in reading and (2) to determine the principal's perception of the extent to which AR and AR-like recommend practices are used in selected elementary schools in Texas. To address the purposes of this study the findings for the six research questions are presented in this chapter.

1. What are the principal's perceptions of the level of implementation and the level of impact of selected reading strategies implemented by selected elementary schools in Texas?
2. What are the principal's perceptions of the level of implementation and the level of impact of AR recommended reading strategies in selected elementary schools in Texas?
3. What are the principal's perceptions of the level of implementation and the level of impact of AR-like recommended reading strategies in selected non-AR schools?
4. Are there significant differences between selected AR and non-AR schools in the principal's perceptions of the level of implementation and level of impact of selected reading strategies?

5. Are there significant differences between the principal's perceptions of the level of implementation and level of impact of AR recommended strategies used in selected AR elementary schools and AR-like reading strategies used in selected non-AR schools in Texas?
6. What selected reading strategies have the highest reported level of implementation and level of impact by principals in selected elementary schools in Texas?

The population of this study included Texas elementary schools with grades three through five that earned the Gold Performance Acknowledgement (GPA) for Continuous Improvement in Reading (CIR) for 2002. Questionnaires were mailed to the principals of all elementary schools in Texas that earned the GPA for CIR for 2002. The population was 721. The entire population was surveyed. Two hundred fifty-two or 35% of the population of 721 returned the questionnaires. "For descriptive research, a sample of 10% of the population is considered minimum. For smaller populations, 20% is required" (Gay, 1992). According to Krejcie and Morgan (1970), a sample of 252 is satisfactory when a population of approximately 721 is surveyed.

Research Question One

Review of Data for Research Question One

Research Question One, "What are the principal's perceptions of the level of implementation and the level of impact of selected reading strategies implemented by selected elementary schools in Texas?"

was addressed through the use of descriptive statistics. Frequency counts, percentages, and cumulative percentages were calculated from the principals' responses to Part 1, Questions 1 through 9 of the Principal Questionnaire (Appendix A). The level of implementation and level of impact of each reading strategy are reported in table format. All respondents (N = 252) answered the question concerning the level of implementation. One respondent did not indicate levels of impact on the questionnaire. The selected reading strategies evaluated in Part 1 of the Principal Questionnaire include the use of: Reading Textbooks, Literature Circles, Classroom Libraries, Parent Participation, Professional Development, IREAP, Reading Counts, AR, and Other Computer Reading Programs.

The data representing the levels of implementation and levels of impact for the use of reading textbook programs are presented in Tables 5 and 6. The percentage of principals reporting no implementation of a reading textbook program was 3.2% and the percent reporting no impact equaled 4.0%. The most frequent response given for level of implementation of reading textbooks was significant implementation at 37.3% while moderate impact was the most frequent response for level of impact at 41.3%.

TABLE 5. Frequency Counts, Percents, and Cumulative Percents for Principals' Responses to Part 1 Question 1: Our School Uses a Reading Textbook Program to Improve Student Success in Reading (Implementation: Reading Textbook Program)

Level of Implementation	Frequency	Percent	Cumulative Percent
Not Implemented	8	3.2	3.2
Minimal Implementation	62	24.6	27.8
Moderate Implementation	88	34.9	62.7
Significant Implementation	94	37.3	100.0
Total	**252**	**100.0**	

TABLE 6. Frequency Counts, Percents, and Cumulative Percents for Principals' Responses to Part 1 Question 1: Our School Uses a Reading Textbook Program to Improve Student Success in Reading (Impact: Reading Textbook Program)

Level of Impact	Frequency	Percent	Cumulative Percent
No Impact	10	4.0	4.0
Minimal Impact	61	24.2	28.3
Moderate Impact	104	41.3	69.7
Significant Impact	76	30.2	100.0
Total Responding	251	99.6	
Missing	1	.4	
Total	**252**	**100.0**	

The levels of implementation and impact of Literature Circles as a reading strategy are reported in Tables 7 and 8. Not implemented and no impact were both reported at 26.2% for the use of Literature Circles as a reading strategy. Moderate

implementation was the most common level of implementation reported at 32.1%. Significant impact was the most common response for level of impact at 32.1%.

TABLE 7. Frequency Counts, Percents, and Cumulative Percents for Principals' Responses to Part 1 Question 2: Our School Uses Literature Circles to Improve Student Success in Reading (Implementation: Literature Circles)

Level of Implementation	Frequency	Percent	Cumulative Percent
Not Implemented	66	26.2	26.2
Minimal Implementation	42	16.7	42.9
Moderate Implementation	81	32.1	75.0
Significant Implementation	63	25.0	100.0
Total	**252**	**100**	

TABLE 8. Frequency Counts, Percents, and Cumulative Percents for Principals' Responses to Part 1 Question 2: Our School Uses Literature Circles to Improve Student Success in Reading (Impact: Literature Circles)

Level of Impact	Frequency	Percent	Cumulative Percent
No Impact	66	26.2	26.3
Minimal Impact	35	13.9	40.2
Moderate Impact	69	27.4	67.7
Significant Impact	81	32.1	100.0
Total Responding	251	99.6	
Missing	1	.4	
Total	**252**	**100.0**	

Frequency counts, percentages, and cumulative percentages for the use of class-room libraries to improve student success in reading are used in Tables 9 and 10 to

illustrate the data collected from the Principal Questionnaires. The lowest level of percentage reported was .8% which was the same for both level of implementation and impact for use of classroom libraries as a reading strategy. The highest percentage of implementation was 49.6% at the level of significant implementation. The highest percentage of impact was 50.4% at the level of significant impact. Moderate implementation was 41.3% with moderate impact reported at 40.1%.

TABLE 9. Frequency Counts, Percentages, and Cumulative Percentages for Principals' Responses to Part 1 Question 3: Our School Has Classroom Libraries to Improve Student Success in Reading (Implementation: Classroom Libraries)

Level of Implementation	Frequency	Percentage	Cumulative Percentage
Not Implemented	2	.8	.8
Minimal Implementation	21	8.3	9.1
Moderate Implementation	104	41.3	50.4
Significant Implementation	125	49.6	100.0
Total	**252**	**100.0**	

TABLE 10. Frequency Counts, Percentages, and Cumulative Percentages for Principals' Responses to Part 1 Question 3: Our School Has Classroom Libraries to Improve Student Success in Reading (Impact: Classroom Libraries)

Level of Impact	Frequency	Percentage	Cumulative Percentage
No Impact	2	.8	.8
Minimal Impact	21	8.3	9.2
Moderate Impact	101	40.1	49.4

TABLE 10. Continued

Level of Impact	Frequency	Percentage	Cumulative Percentage
Significant Impact	127	50.4	100.0
Total Responding	228	90.5	
Missing	1	.4	
Total	**252**	**100.0**	

Tables 11 and 12 contain the data collected from principals regarding their perceptions of the levels of implementation and impact of the participation of parents in the schools' reading programs to improve student success in reading. The smallest percentages reported for implementation and impact were 11% and 12%, respectively, for not implemented and no impact. Minimal implementation and significant implementation were reported as 25.0% and 27.8%, respectively; while minimal impact and significant impact were reported as 26.2% and 32.1%, respectively. The most frequent level reported for implementation was moderate implementation at 42.9%; with the most frequent level of impact reported at moderate impact at 36.5%.

TABLE 11. Frequency Counts, Percentages, and Cumulative Percentages for Principals' Responses to Part 1 Question 4: Parents in Our School Are Part of the Program to Help Improve Student Success in Reading (Implementation: Parental Involvement)

Level of Implementation	Frequency	Percentage	Cumulative Percentage
Not Implemented	11	4.4	4.4
Minimal Implementation	63	25.0	29.4

TABLE 11. Continued

Level of Implementation	Frequency	Percentage	Cumulative Percentage
Moderate Implementation	108	42.9	72.2
Significant Implementation	70	27.8	100.0
Total	**252**	**100.0**	

TABLE 12. Frequency Counts, Percentages, and Cumulative Percentages for Principals' Responses to Part 1 Question 4: Parents in Our School Are Part of the Program to Help Improve Student Success in Reading (Impact: Parental Involvement)

Level of Impact	Frequency	Percentage	Cumulative Percentage
No Impact	12	4.8	4.8
Minimal Impact	66	26.2	31.1
Moderate Impact	92	36.5	67.7
Significant Impact	81	32.1	100.0
Total Responding	251	99.6	
Missing	1	.4	
Total	**252**	**100.0**	

The data representing the levels of implementation and levels of impact for the participation of teachers in professional development as a reading strategy to improve instruction in reading were presented in Tables 13 and 14. The percentage of principals not implementing professional development was .8% and minimal implementation is 1.2%. No impact and minimal impact was reported at .8% and 2.4%, respectively. The highest percentage for use of professional development for teachers was at

the level of significant implementation at 75.8% and significant impact at 71.8%. Two principals did not report impact on this question.

TABLE 13. Frequency Counts, Percentages, and Cumulative Percentages for Principals' Responses to Part 1 Question 5: Our Teachers Participate in Professional Development to Help Improve Instruction in Reading (Implementation: Teacher Participation)

Level of Implementation	Frequency	Percentage	Cumulative Percentage
Not Implemented	2	.8	.8
Minimal Implementation	3	1.2	2.0
Moderate Implementation	56	22.2	24.2
Significant Implementation	191	75.8	100.0
Total	**252**	**100**	

TABLE 14. Frequency Counts, Percentages, and Cumulative Percentages for Principals' Responses to Part 1 Question 5: Our Teachers Participate in Professional Development to Help Improve Instruction in Reading (Impact: Teacher Participation)

Level of Impact	Frequency	Percentage	Cumulative Percentage
No Impact	2	.8	.8
Minimal Impact	6	2.4	3.2
Moderate Impact	61	24.2	27.5
Significant Impact	181	71.8	99.6
Total Responding	250	99.2	
Missing	2	.8	
Total	**252**	**100.0**	

The levels of implementation and impact of use of the Internet, Reading, Encoding, Annotating, and Pondering (IREAP) program to improve student success

in reading are represented in Tables 15 and 16. The lowest levels of percentages reported are 7.1% at the level of significant implementation and 6.3% at the level of significant impact. The highest levels of percentages reported are 66.7% level of not implemented and 66.7% at the level of no impact.

TABLE 15. Frequency Counts, Percentages, and Cumulative Percentages for Principals' Responses to Part 1 Question 6: Our School Uses Internet, Reading, Encoding, Annotating, and Pondering (IREAP) to Improve Student Success in Reading (Implementation: IREAP)

Level of Implementation	Frequency	Percentage	Cumulative Percentage
Not Implemented	169	66.7	66.9
Minimal Implementation	26	10.3	76.1
Moderate Implementation	39	15.5	93.6
Significant Implementation	18	7.1	100.0
Total	**252**	**100.0**	

TABLE 16. Frequency Counts, Percentages, and Cumulative Percentages for Principals' Responses to Part 1 Question 6: Our School Uses Internet, Reading, Encoding, Annotating, and Pondering (IREAP) to Improve Student Success in Reading (Impact: IREAP)

Level of Impact	Frequency	Percentage	Cumulative Percentage
No Impact	168	66.7	66.9
Minimal Impact	23	9.1	76.1
Moderate Impact	44	17.5	93.6
Significant Impact	16	6.3	100.0
Total Responding	251	99.6	
Missing	1	.4	
Total	**252**	**100.0**	

The data collected on the Principal Questionnaire regarding the use of Reading Counts as a reading strategy to improve student success in reading are shown in Tables 17 and 18. The levels of significant implementation and significant impact were the lowest percentages reported at 3.2% and 3.6%. Not implemented and no impact had the highest percentage reported at 85.3% and 84.5%.

TABLE 17. Frequency Counts, Percentages, and Cumulative Percentages for Principals' Responses to Part 1 Question 7: Our School Uses Reading Counts to Improve Student Success in Reading (Implementation: Reading Counts)

Level of Implementation	Frequency	Percentage	Cumulative Percentage
Not Implemented	215	85.3	85.3
Minimal Implementation	9	3.6	88.9
Moderate Implementation	20	7.9	96.8
Significant Implementation	8	3.2	100.0
Total	**252**	**100.0**	

TABLE 18. Frequency Counts, Percentages, and Cumulative Percentages for Principals' Responses to Part 1 Question 7: Our School Uses Reading Counts to Improve Student Success in Reading (Impact: Reading Counts)

Level of Impact	Frequency	Percentage	Cumulative Percentage
No Impact	213	84.5	84.9
Minimal Impact	10	4.0	44.8
Moderate Impact	19	7.5	96.4
Significant Impact	9	3.6	100.0
Total Responding	251	99.6	
Missing	1	.4	
Total	**252**	**100.0**	

The levels of use of Accelerated Reader (AR) as a reading strategy to improve student success in reading are enumerated in Tables 19 and 20. Minimal implementation and minimal impact were reported at 7.1% and 10.7%, which were the lowest percentage reported for use of AR. Significant implementation was 59.1%, and significant impact was 48.8%. AR was not implemented by 17.9% of the respondents, and 19.4% of the respondents indicated that AR did not impact their reading program.

TABLE 19. Frequency Counts, Percentages, and Cumulative Percentages for Principals' Responses to Part 1 Question 8: Our School Uses Accelerated Reader (AR) to Improve Student Success in Reading (Implementation: Accelerated Reader)

Level of Implementation	Frequency	Percentage	Cumulative Percentage
Not Implemented	45	17.9	18.0
Minimal Implementation	18	7.1	25.0
Moderate Implementation	39	15.5	41.0
Significant Implementation	149	59.1	100.0
Total Responding	251	99.6	
Missing	1	.4	
Total	**252**	**100.0**	

TABLE 20. Frequency Counts, Percentages, and Cumulative Percentages for Principals' Responses to Part 1 Question 8: Our School Uses Accelerated Reader (AR) to Improve Student Success in Reading (Impact: Accelerated Reader)

Level of Impact	Frequency	Percentage	Cumulative Percentage
No Impact	49	19.4	19.5
Minimal Impact	27	10.7	30.3
Moderate Impact	52	20.6	20.7
Significant Impact	123	48.8	49.0
Total Responding	251	99.6	100.0
Missing	1	.4	
Total	**252**	**100.0**	

The use of computer reading programs other than AR as a reading strategy to improve student success in reading are represented in Tables 21 and 22. The lowest percentages reported were minimal implementation and minimal impact at 7.5% and 8.3%. Not implemented and no impact were the highest percentage at 56.3% and 56.0%.

TABLE 21. Frequency Counts, Percentages, and Cumulative Percentages for Principals' Responses to Part 1 Question 9: Our School Uses Another Computer Reading Program Other than AR to Improve Student Success in Reading (Implication: Computer Reading Program Other than AR)

Level of Implementation	Frequency	Percentage	Cumulative Percentage
Not Implemented	142	56.3	56.3
Minimal Implementation	19	7.5	63.9

Table 21. Continued

Level of Implementation	Frequency	Percentage	Cumulative Percentage
Moderate Implementation	42	16.7	80.6
Significant Implementation	49	19.4	100.0
Total	**252**	**100.0**	

TABLE 22. Frequency Counts, Percentages, and Cumulative Percentages for Principals' Responses to Part 1 Question 9: Our School Uses Another Computer Reading Program Other than AR to Improve Student Success in Reading (Impact: Computer Reading Program Other than AR)

Level of Impact	Frequency	Percentage	Cumulative Percentage
No Impact	141	56.0	56.4
Minimal Impact	21	8.3	64.8
Moderate Impact	43	17.1	82.0
Significant Impact	45	17.9	100.0
Total Responding	250	99.3	
Missing	2	.8	
Total	**252**	**100.0**	

The use of Reading Counts, IREAP, and computer reading programs other than AR were reported as not implemented and no impact by over 56% of the principals. The uses of AR and classroom libraries as reading strategies were reported at significant implementation and impact by around 50% of principals. The use of professional development was reported at a significant level of implementation by 75.8% of principals. The level of impact for professional development was 71.8% at the level of significant impact toward improving instruction in reading.

Because the percentage levels of implementation of the selective reading strategies seemed to fall at each end of the continuum, the four levels were collapsed into two for further analysis of the data. When percentages for not implemented and minimal implementation are combined, the top three percentages for the new category of least implemented were Reading Counts was 88.9%, IREAP was 77.0%, and Other Computer Programs was 63.8%. When moderate implementation and significant implementation are combined to create a new category of most implemented reading strategy, Professional Development was 98.0% and Classroom Libraries was 92.9%. In the new category of most implemented reading strategy, three of the reading strategies were tightly grouped, AR was 74.6%, Reading Textbooks was 72.2%, and Parent Participation was 70.7%. Literary Circles was fourth in the new most implemented category with 57.10%.

AR was indicated by principals to be the most widely implemented computer reading program with 59.1% reporting significant impact to their reading programs. Only 17.9% or 52 schools stated that they did not implement the AR program at any level. AR was reported as implemented in 82.1% of schools returning the questionnaire. Because an overwhelming majority of schools used the AR program, analysis of the data to determine how the AR program was implemented and the principals' perceptions of the impact of the program should be beneficial.

Summary of Data for Research Question One

The selected reading strategies used to answer Research Question One include the use of: Reading Textbooks, Literature Circles, Classroom Libraries, Parent Participation, Professional Development, IREAP, Reading Counts, AR, and Other Computer Reading Programs. The graph of data represented in Figure 1 shows the levels of implementation and impact reported by principals. Review of data for the other levels reveals that the principals' responses for all levels were similar for levels of implementation and levels of impact. Figure 2 compares the combined levels of Not Implemented and Minimal Implementation with the combined levels of Moderate Implementation and Significant Implementation.

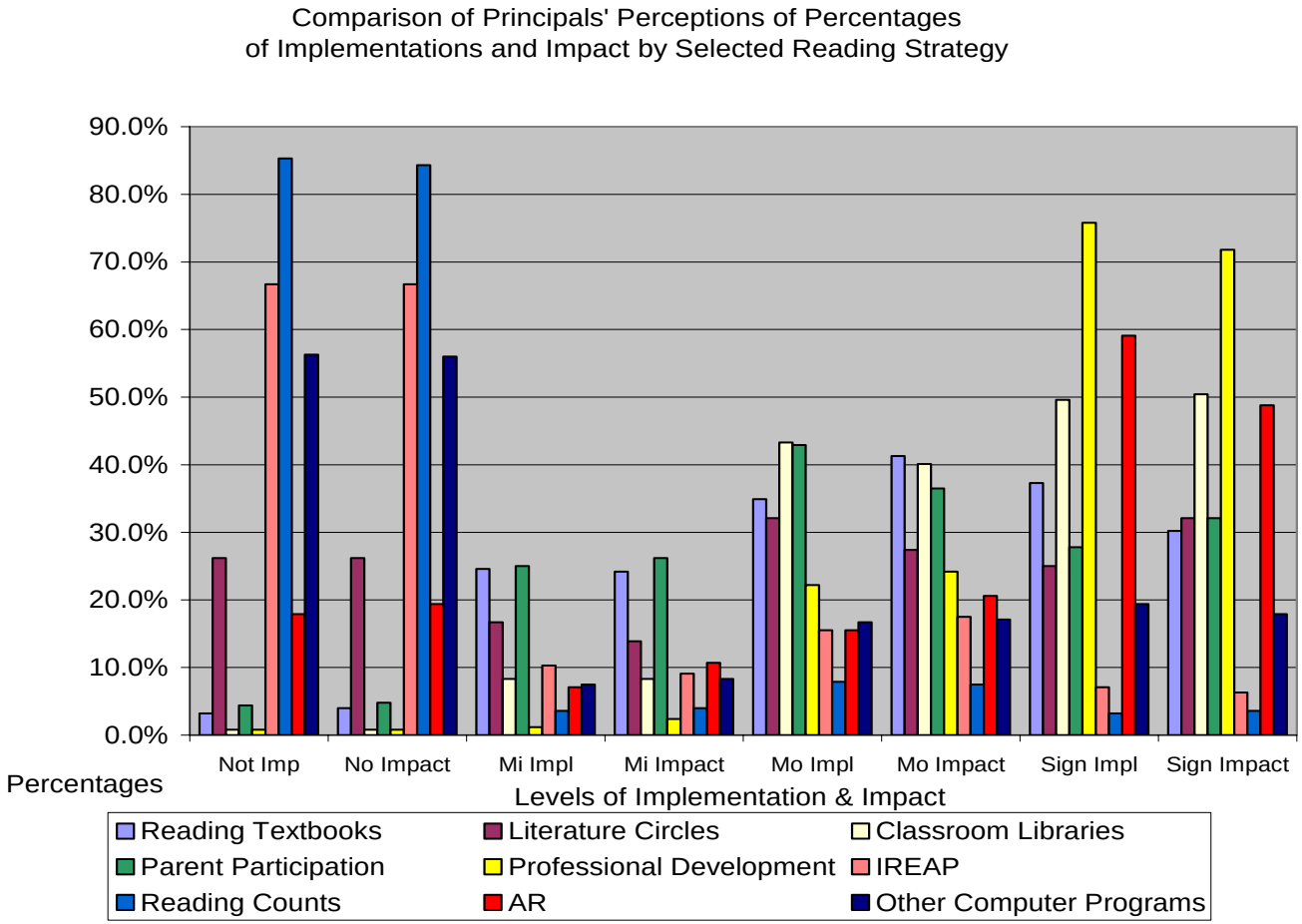

FIGURE 1. Comparison of Principals' Perceptions of Percentages of Implementations and Impact by Selected Reading Strategy

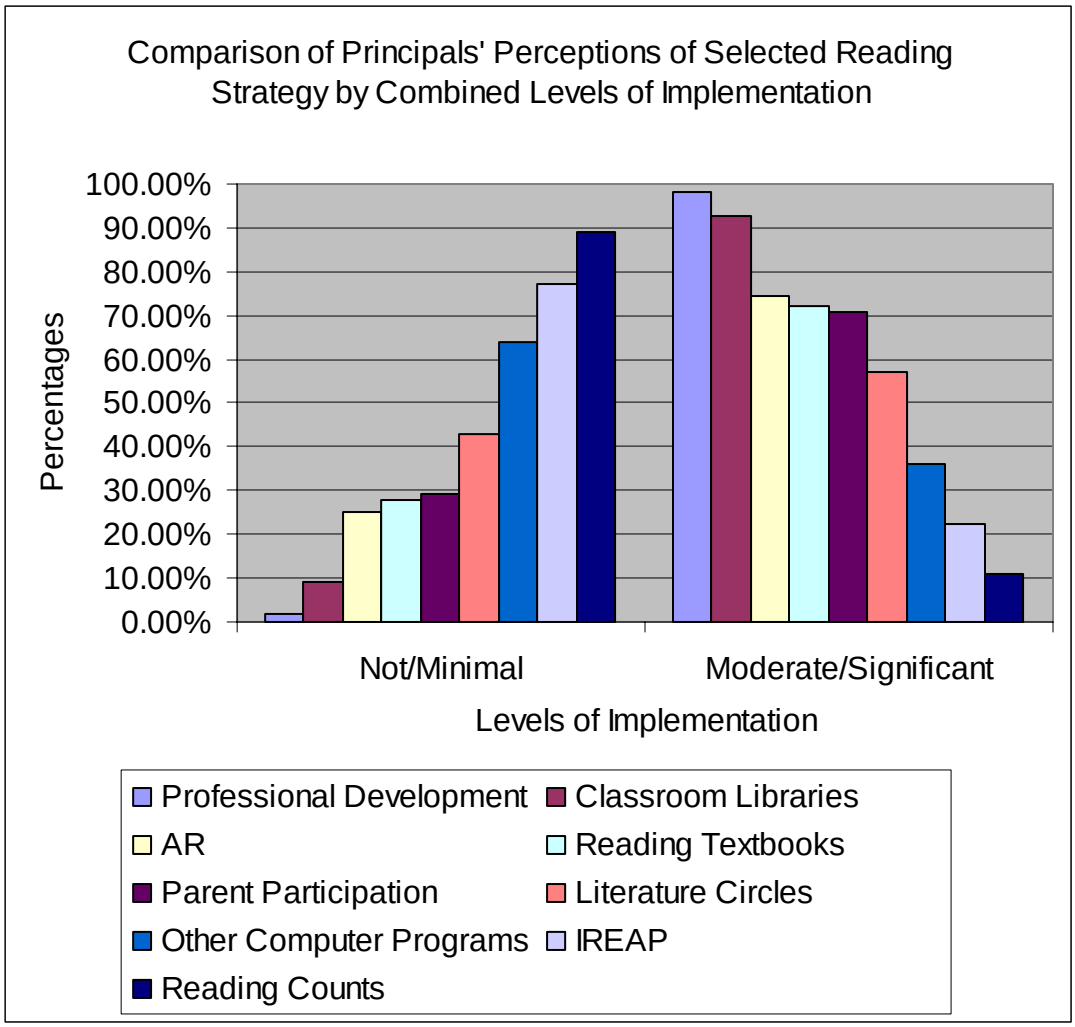

FIGURE 2. Comparison of Principals' Perceptions of Selected Reading Strategy by Combined Levels of Implementation

The data from Part I of the Principal Questionnaire provides valuable data gathered from principals' perceptions to help principals improve their reading programs. It seems for these selected reading strategies that the principals perceived that the amount of effort put into implementation yields a responding level of impact. The reported levels of implementation and levels of impact were similar. Figure 3 contains data representing the levels of implementation and impact for easier comparisons. Additionally, the categories of Not Implemented and Minimal Implementation were collapsed into one category and Moderate Implementation and Significant Implementation were collapsed into one category. By reviewing the collapsed data for implementation and impact, the data patterns for use of the selected reading strategies used in Part I of the Principal Questionnaire become clearer. The use of professional development for teachers and classroom libraries were reported by over 90% of principals responding. The principals responded that these two strategies were implemented at the moderate to significant levels and had moderate to significant levels of impact.

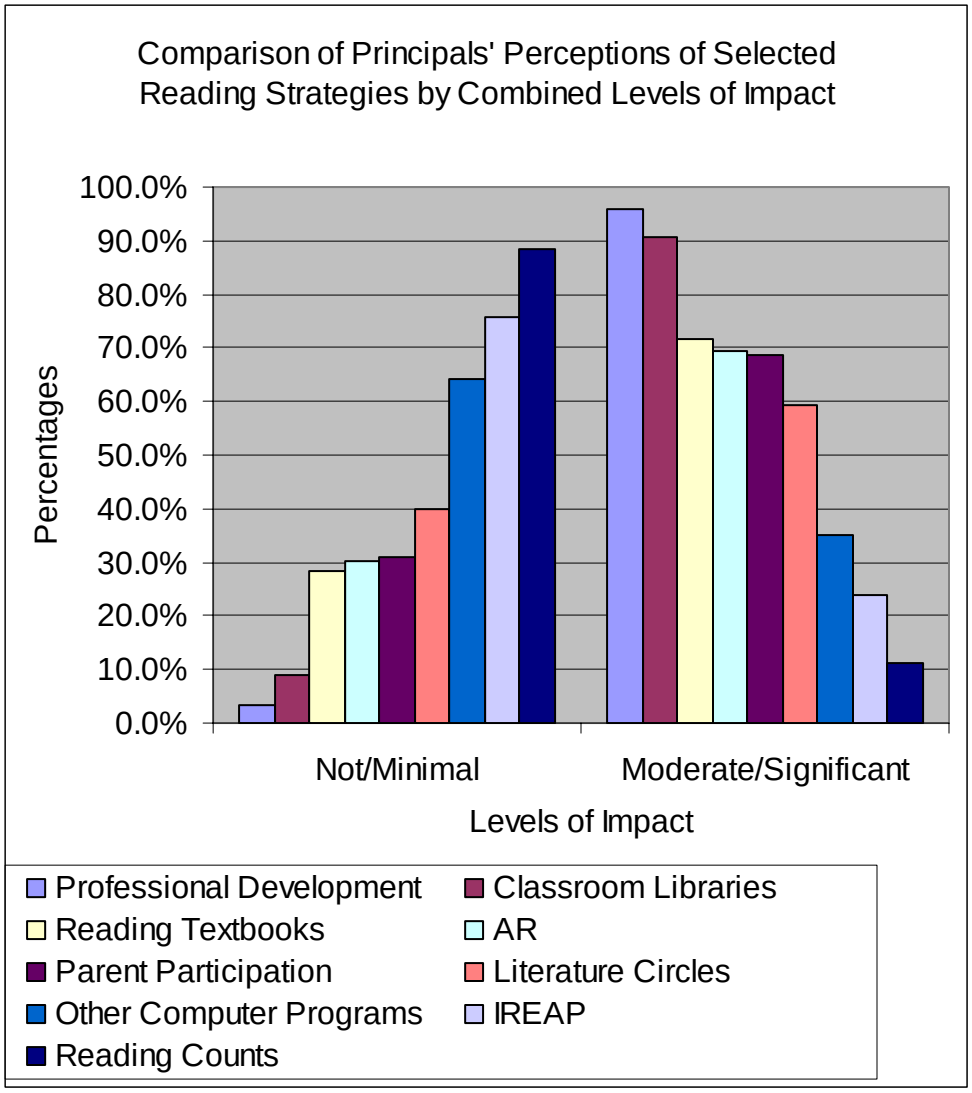

FIGURE 3. Comparisons of Principals' Perceptions of Selected Reading Strategies by Combined Levels of Impact

The uses of AR, Reading Textbooks, and Parent Participation as reading strategies were reported at the moderate to significant levels of implementation and impact by about 70% of the principals. Because 74.6% of principals, however, reported implementation of the AR program at moderate and significant levels, while

68.4% reported moderate to significant levels of impact from use of the program. Results of the principals reported perceptions collected on Part II from principals of AR schools and Part III from principals of non-AR Schools on the Principal Questionnaire were used to help clarify whether the AR program is responsible for student success in reading or whether the use of AR-like strategies will bring the same levels of student success in reading.

Research Question Two

Review of Data for Research Question Two

Research Question Two was designed to consider: "What are the principal's perceptions of the level of implementation and the level of impact of AR recommended reading strategies in selected elementary schools in Texas?"

Part II of the Principal Questionnaire addressed implementation of the AR program. Responses to Part II, Section A was used to determine the grades using AR, the length of time the program was used, and the person responsible for implementing AR. The person most frequently responsible for final decisions regarding implementation of the AR program was the principal. The school librarian was also listed with the principal as being responsible for implementing AR. A small number of school principals reported that the AR program was administered by a committee. The length of time schools used AR is related in Table 23. Two hundred schools reported the AR program was used in third through fifth grades. Of the 200 principals reporting that they used AR in their schools, 194 indicated the number of years AR was used in Part II, Section A. This represents 79.37% or four-fifths of the principals

returning the questionnaire. The large numbers of schools using AR from the selected population of schools with successful reading programs makes information on the impact of AR reading strategies even more noteworthy.

TABLE 23. Years AR Used in Selected Elementary Schools

Years AR Used	Number of Schools
1	2
2	7
3	11
4+	174
Total	**194**

Ninety-seven percent of the reporting school principals used AR for over 4 years. The number of years schools used the AR program is important to the results of this study. First, because schools selected for this study earned the GPA for CIR. The GPA for CIR was awarded to schools with 50.0% or more high-performing students, matched test takers scoring a TLI equal to or greater than 85. Because AR was implemented in 194 of the schools for over four years, it is evident that the matched test takers would have participated in the AR program during the time they were tested. Secondly, the impact of the AR program on reading instruction seems to be stronger in schools where the program was implemented for longer periods of time. Additionally, schools using the AR program for more than 4 years seem to have more established implementation of the AR program and are better suited for the purposes of this study.

Data collected from Part II Section B, Questions 1 through 16 of the Principal Questionnaire were used to answer Research Question 2. Frequency counts, percentages, and cumulative percentages were calculated to describe the data. Data representing the principals' perceptions of the levels of implementation and the levels of impact of student selection of their own AR books are presented in Tables 24 and 25. The least frequent response for level of implementation was no implementation at 1% and for level of impact was no impact at 1%. Seventy-three percent of respondents conveyed a significant level of implementation, and 66.5% of respondents concluded that students' selecting their own AR books had a significant impact. These were the most frequent responses for level of implementation and level of impact.

TABLE 24. Frequency Counts, Percentages, and Cumulative Percentages for Principals' Responses to Part II, Section B Question 1: Students Select Their Own AR Books (Implementation: Students Select Own AR Books)

Level of Implementation	Frequency	Percentage	Cumulative Percentage
Not Implemented	2	1.0	1.0
Minimal Implementation	7	3.5	4.6
Moderate Implementation	42	21.0	25.9
Significant Implementation	146	73.0	100.0
Total Responding	197	98.5	
Missing	3	1.5	
Total	**200**	**100.0**	

TABLE 25. Frequency Counts, Percentages, and Cumulative Percentages for Principals' Responses to Part II, Section B Question 1: Students Select Their Own AR Books (Impact: Students Select Own AR Books)

Level of Impact	Frequency	Percentage	Cumulative Percentage
No Impact	2	1.0	1.0
Minimal Impact	12	6.0	7.2
Moderate Impact	48	24.0	31.8
Significant Impact	133	66.5	100.0
Total Responding	195	97.5	
Missing	5	2.5	
Total	**200**	**100.0**	

Tables 26 and 27 contain the levels of implementation and the levels of impact of determining students' AR reading levels by using the Star Reading Program. Minimal implementation and minimal impact were the least common response. Three percent of responding principals replied that they minimally implemented the Star Reading Program to determine students' AR reading levels, and 3.5% of responding principals replied that employing the Star Reading Program to determine students' AR reading levels had a minimal impact. Significant implementation and significant impact were the most frequent responses at 61.5% and 52.5%, respectively.

TABLE 26. Frequency Counts, Percentages, and Cumulative Percentages for Principals' Responses to Part II, Section B, Question 2: Students' AR Reading Levels Are Determined by Using Star Reading Program (Implementation: Students' AR Reading Levels Are Determined by Using Star Reading Program)

Level of Implementation	Frequency	Percentage	Cumulative Percentage
Not Implemented	42	21.0	21.3
Minimal Implementation	6	3.0	24.4
Moderate Implementation	26	13.0	37.6
Significant Implementation	123	61.5	100.0
Total Responding	197	98.5	
Missing	3	1.5	
Total	**200**	**100.0**	

TABLE 27. Frequency Counts, Percentages, and Cumulative Percentages for Principals' Responses to Part II, Section B, Question 2: Students' AR Reading Levels Are Determined by Using Star Reading Program (Impact: Students' AR Reading Levels Are Determined by Using Star Reading Program)

Level of Impact	Frequency	Percentage	Cumulative Percentage
No Impact	42	21.0	21.5
Minimal Impact	7	3.5	25.1
Moderate Impact	40	20.0	45.6
Significant Impact	105	52.5	100.0
Total Responding	194	97.0	
Missing	6	3.0	
Total	200	100.0	

The data representing the levels of implementation and the levels of impact of students taking AR reading practice quizzes reported by the principals are listed in Tables 28 and 29. The least frequent response for level of implementation was minimal implementation at 8.5%. Significant implementation was the most frequent

response at 62.5%. Nine and one-half percent of respondents determined that students taking AR reading quizzes had a minimal impact, and 54.5% found that students taking AR reading quizzes had a significant impact.

TABLE 28. Frequency Counts, Percentages, and Cumulative Percentages for Principals' Responses to Part II, Section B, Question 2: Students Take AR Reading Practice Quizzes (Implementation: Students Take AR Reading Practice Quizzes)

Level of Implementation	Frequency	Percentage	Cumulative Percentage
Not Implemented	26	13.0	13.2
Minimal Implementation	17	8.5	21.8
Moderate Implementation	29	14.5	36.5
Significant Implementation	125	62.5	100.0
Total Responding	197	98.5	
Missing	3	1.5	
Total	**200**	**100.0**	

TABLE 29. Frequency Counts, Percentages, and Cumulative Percentages for Principals' Responses to Part II, Section B, Question 2: Students Take AR Reading Practice Quizzes (Impact: Students Take AR Reading Practice Quizzes)

Level of Impact	Frequency	Percentage	Cumulative Percentage
No Impact	27	13.5	13.8
Minimal Impact	19	9.5	23.6
Moderate Impact	40	20.0	44.1
Significant Impact	109	54.5	100.0
Total Responding	195	97.5	
Missing	5	2.5	
Total	**200**	**100.0**	

Tables 30 and 31 contain the data representing students' and teachers' use of AR reports in conferences to direct reading practice. The least frequent responses for level of implementation were not implemented at 8.5%, and the most frequent response was moderate implementation at 34.0%. The percentage of respondents reporting moderate implementation was only 1.5% greater than those reporting significant implementation. When implemented, the use of AR reports in conferences to direct reading practice had a minimal impact in 23.0% of responding schools and a significant impact in 34.5% of responding schools. These were the least and most frequent responses, respectively.

TABLE 30. Frequency Counts, Percentages, and Cumulative Percentages for Principals' Responses to Part II, Section B, Question 4: Students and Teachers Use AR Reports in Conferences to Direct Reading Practice (Implementation: Students and Teachers Use AR Reports in Conferences to Direct Reading Practice)

Level of Implementation	Frequency	Percentage	Cumulative Percentage
Not Implemented	17	8.5	8.6
Minimal Implementation	47	23.5	32.5
Moderate Implementation	68	34.0	67.0
Significant Implementation	65	32.5	100.0
Total Responding	197	98.5	
Missing	3	1.5	
Total	**200**	**100.0**	

TABLE 31. Frequency Counts, Percentages, and Cumulative Percentages for Principals' Responses to Part II, Section B, Question 4: Students and Teachers Use AR Reports in Conferences to Direct Reading Practice (Impact: Students and Teachers Use AR Reports in Conferences to Direct Reading Practice)

Level of Impact	Frequency	Percentage	Cumulative Percentage
No Impact	20	10.0	10.4
Minimal Impact	46	23.0	34.2
Moderate Impact	58	29.0	64.2
Significant Impact	69	34.5	100.0
Total Responding	195	91.5	
Missing	5	2.5	
Total	**200**	**100.0**	

The levels of implementation and the levels of impact of students' setting reading goals in the AR program are represented in Tables 32 and 33. Six percent of respondents did not require students to set reading goals in the AR program, and 50.5% of respondents significantly implemented this reading improvement strategy. The reporting for the impact of students' setting reading goals was similar to the percentage reporting no implementation with 6.0% of principals reporting no impact; however, only 46.5% of principals reported significant impact of this AR strategy.

TABLE 32. Frequency Counts, Percentages, and Cumulative Percentages for Principals' Responses to Part II, Section B, Question 5: Students Have Set Reading Goals in the AR Program (Implementation: Students Have Set Reading Goals in the AR Program)

Level of Implementation	Frequency	Percentage	Cumulative Percentage
Not Implemented	12	6.0	6.1
Minimal Implementation	28	14.0	20.3
Moderate Implementation	56	28.0	48.7
Significant Implementation	101	50.5	100.0
Total Responding	197	98.5	
Missing	3	1.5	
Total	**200**	**100.0**	

TABLE 33. Frequency Counts, Percentages, and Cumulative Percentages for Principals' Responses to Part II, Section B, Question 5: Students Have Set Reading Goals in the AR Program (Impact: Students Have Set Reading Goals in the AR Program)

Level of Impact	Frequency	Percentage	Cumulative Percentage
No Impact	13	6.5	6.7
Minimal Impact	28	14.0	21.0
Moderate Impact	61	30.5	52.3
Significant Impact	93	46.5	100.0
Total Responding	195	97.5	
Missing	5	2.5	
Total	**200**	**100.0**	

Data representing the levels of implementation and impact for students' keeping track of their own AR reading points are presented in Tables 34 and 35. The least frequent response for level of implementation was not implemented at 10.0%. This response was only 5.5% less frequent than minimal implementation at 15.5%. Significant implementation was the most frequent response at 48.5%. Eleven percent

of responding principals concluded that students' keeping their track of their own AR reading points had no impact, but most principals, 45%, found that students' keeping track of their own AR reading points had a significant impact.

TABLE 34. Frequency Counts, Percentages, and Cumulative Percentages for Principals' Responses to Part II, Section B, Question 6: Students Keep Track of Their Own Points Earned for Reading in the AR Program (Implementation: Students Keep Track of Their Own Points Earned for Reading in the AR Program)

Level of Implementation	Frequency	Percentage	Cumulative Percentage
Not Implemented	20	10.0	10.2
Minimal Implementation	31	15.5	25.9
Moderate Implementation	49	24.5	50.8
Significant Implementation	97	48.5	100.0
Total Responding	197	98.5	
Missing	3	1.5	
Total	**200**	**100.0**	

TABLE 35. Frequency Counts, Percentages, and Cumulative Percentages for Principals' Responses to Part II, Section B, Question 6: Students Keep Track of Their Own Points Earned for Reading in the AR Program (Impact: Students Keep Track of Their Own Points Earned for Reading in the AR Program)

Level of Impact	Frequency	Percentage	Cumulative Percentage
No Impact	22	11.0	11.3
Minimal Impact	35	17.5	29.2
Moderate Impact	48	24.0	53.8
Significant Impact	90	45.0	100.0
Total Responding	195	97.5	
Missing	5	2.5	
Total	200	100.0	

Tables 36 and 37 contain the data representing the reported principals' perceptions of the levels of implementation and impact of posting the results of students' achievement of AR reading goals in classrooms, hallways, and/or the library. The least frequent responses for levels of implementation and impact were minimal implementation, 13.0%, and minimal impact, 10%. This reading improvement strategy was not implemented at 16.5% of the responding schools. The most frequent response for levels of implementation and impact were significant implementation, 45.5%, and significant impact, 42.5%.

TABLE 36. Frequency Counts, Percentages, and Cumulative Percentages for Principals' Responses to Part II, Section B, Question 7: Students' Achievement of AR Reading Goals Are Posted in Classrooms, Hallways, and/or the Library (Implementation: Students' Achievement of AR Reading Goals Are Posted in Classrooms, Hallways, and/or the Library)

Level of Implementation	Frequency	Percentage	Cumulative Percentage
Not Implemented	33	16.5	16.8
Minimal Implementation	26	13.0	29.9
Moderate Implementation	47	23.5	53.8
Significant Implementation	91	45.5	100.0
Total Responding	197	98.5	
Missing	3	1.5	
Total	**200**	**100.0**	

TABLE 37. Frequency Counts, Percentages, and Cumulative Percentages for Principals' Responses to Part II, Section B, Question 7: Students' Achievement of AR Reading Goals Are Posted in Classrooms, Hallways, and/or the Library (Impact: Students' Achievement of AR Reading Goals Are Posted in Class-rooms, Hallways, and/or the Library)

Level of Impact	Frequency	Percentage	Cumulative Percentage
No Impact	36	18.0	18.6
Minimal Impact	20	10.0	28.9
Moderate Impact	53	26.5	56.2
Significant Impact	85	42.5	100.00
Total Responding	194	97.0	
Missing	6	3.0	
Total		**100.0**	

Tables 38 and 39 contain the levels of implementation and impact of responding schools giving students more than 30 minutes a day during school for AR sustained silent reading. This reading improvement strategy was not used at 17.5% of schools and was only significantly implemented by 32.5% of schools. These were the least and most common response, respectively. Seventeen percent of responding principals conveyed that this reading improvement strategy had no impact or minimal impact. No impact and minimal impact tied for the least common response. Thirty-five percent of responding principals concluded that giving students more than thirty minutes a day for AR sustained silent reading had a significant impact. While significant impact was the most common response, this response was only 6.5 % more common than moderate impact.

TABLE 38. Frequency Counts, Percentages, and Cumulative Percentages for Principals' Responses to Part II, Section B, Question 8: Students Are Given More than 30 Minutes a Day During School for AR Sustained Silent Reading (Implementation: Students Are Given More than 30 Minutes a Day During School for AR Sustained Silent Reading)

Level of Implementation	Frequency	Percentage	Cumulative Percentage
Not Implemented	35	17.5	17.8
Minimal Implementation	42	21.0	39.1
Moderate Implementation	55	27.5	67.0
Significant Implementation	65	32.5	100.0
Total Responding	197	98.5	
Missing	3	1.5	
Total	**200**	**100.0**	

TABLE 39. Frequency Counts, Percentages, and Cumulative Percentages for Principals' Responses to Part II, Section B, Question 8: Students Are Given More than 30 Minutes a Day During School for AR Sustained Silent Reading (Impact: Students Are Given More than 30 Minutes a Day During School for AR Sustained Silent Reading)

Level of Impact	Frequency	Percentage	Cumulative Percentage
No Impact	34	17.0	17.4
Minimal Impact	34	17.0	34.9
Moderate Impact	57	28.5	64.1
Significant Impact	70	35.0	100.0
Total Responding	195	97.5	
Missing	5	2.5	
Total	**200**	**100.0**	

The results for the levels of implementation and impact of students' receiving certificates for earning AR points are reported in Tables 40 and 41. The least common response for level of implementation was minimal implementation at 12.5%, and the most common response for level of implementation was significant

implementation at 44.0%. Twenty-six percent of respondents do not implement this reading improvement strategy. Twenty-eight percent of responding principals concluded that this reading improvement strategy had no impact, while 39.5% found that it did have a significant impact. Significant impact was the most frequent response. The least frequent response was minimal impact at 12%.

TABLE 40. Frequency Counts, Percentages, and Cumulative Percentages for Principals' Responses to Part II, Section B, Question 9: Students Receive Certificates for Earning AR Points (Implementation: Students Receive Certificates for Earning AR Points)

Level of Implementation	Frequency	Percentage	Cumulative Percentage
Not Implemented	52	26.0	26.4
Minimal Implementation	25	12.5	39.1
Moderate Implementation	32	16.0	55.3
Significant Implementation	88	44.0	100.0
Total Responding	197	98.5	
Missing	3	1.5	
Total	**200**	**100.0**	

TABLE 41. Frequency Counts, Percentages, and Cumulative Percentages for Principals' Responses to Part II, Section B, Question 9: Students Receive Certificates for Earning AR Points (Impact: Students Receive Certificates for Earning AR Points)

Level of Impact	Frequency	Percentage	Cumulative Percentage
No Impact	56	28.0	28.7
Minimal Impact	24	12.0	41.0
Moderate Impact	36	18.0	59.5
Significant Impact	79	39.5	100.0
Total Responding	195	97.5	
Missing	5	2.5	
Total	**200**	**100.0**	

Tables 42 and 43 contain the data for the levels of implementation and impact of students' earning rewards other than certificates for earning AR points. Six percent of responding principals stated that this reading improvement strategy was not implemented, and 7.5% of principals conveyed that this reading improvement strategy was only minimally implemented. Not Implemented was the least frequent response. The most frequent response was Significant Implementation at 68%. Significant Impact was the most frequent response for level of impact at 61.5%. Eight percent of responding principals concluded that students earning rewards other than certificates for AR points had minimal impact, and 6.5% decided that this reading improvement strategy had no impact. No Impact was the least common response.

TABLE 42. Frequency Counts, Percentages, and Cumulative Percentages for Principals' Responses to Part II, Section B, Question 10: Students Earn Rewards Other than Certificates for Earning AR Points (Implementation: Students Earn Rewards Other than Certificates for Earning AR Points)

Level of Implementation	Frequency	Percentage	Cumulative Percentage
Not Implemented	12	6.0	6.1
Minimal Implementation	15	7.5	13.7
Moderate Implementation	34	17.0	31.0
Significant Implementation	136	68.0	100.0
Total Responding	197	98.5	
Missing	3	1.5	
Total	**200**	**100.0**	

TABLE 43. Frequency Counts, Percentages, and Cumulative Percentages for Principals' Responses to Part II, Section B, Question 10: Students Earn Rewards Other than Certificates for Earning AR Points (Impact: Students Earn Rewards Other than Certificates for Earning AR Points)

Level of Impact	Frequency	Percentage	Cumulative Percentage
No Impact	13	6.5	6.7
Minimal Impact	16	8.0	14.9
Moderate Impact	44	22.0	37.4
Significant Impact	122	61.0	100.0
Total Responding	195	97.5	
Missing	5	2.5	
Total	**200**	**100.0**	

Tables 44 and 45 include the results for the levels of implementation and impact of the responding schools having a school store for students to spend earned AR points. Fifty percent of the responding schools do not implement this reading improvement strategy. This was the most common response. The least common response was minimal implementation at 7%. Thirty percent of responding principals stated that their school significantly implements this reading improvement strategy. The most common response for level of impact was no impact, 50.5%, and the least common response was minimal impact, 7.5%. This reading improvement strategy had a moderate impact in 11.5% of responding schools.

TABLE 44. Frequency Counts, Percentages, and Cumulative Percentages for Principals' Responses to Part II, Section B, Question 11: Our School Has a School Store for Students to Spend Earned AR Points (Implementation: Our School Has a School Store for Students to Spend Earned AR Points)

Level of Implementation	Frequency	Percentage	Cumulative Percentage
Not Implemented	100	50.0	50.8
Minimal Implementation	14	7.0	57.9
Moderate Implementation	23	11.5	69.5
Significant Implementation	60	30.0	100.0
Total Responding	197	98.5	
Missing	3	1.5	
Total	**200**	**100.0**	

TABLE 45. Frequency Counts, Percentages, and Cumulative Percentages for Principals' Responses to Part II, Section B, Question 11: Our School Has a School Store for Students to Spend Earned AR Points (Impact: Our School Has a School Store for Students to Spend Earned AR Points)

Level of Impact	Frequency	Percentage	Cumulative Percentage
No Impact	101	50.5	51.8
Minimal Impact	15	7.5	59.5
Moderate Impact	23	11.5	71.3
Significant Impact	56	28.0	100.0
Total Responding	195	97.5	
Missing	5	2.5	
Total	**2**	**100.0**	

The results for levels of implementation and impact of students' receiving grades on their report cards for AR points are listed in Tables 46 and 47. By far, the most frequent responses were not implemented, 60.5%, and no impact, 59.5%. The least frequent responses were significant implementation, 7.5%, and significant impact, 6.5%.

TABLE 46. Frequency Counts, Percentages, and Cumulative Percentages for Principals' Responses to Part II, Section B, Question 12: Students Receive Grades on Their Report Cards for AR Points (Implementation: Students Receive Grades on Their Report Cards for AR Points)

Level of Implementation	Frequency	Percentage	Cumulative Percentage
Not Implemented	121	60.5	61.4
Minimal Implementation	35	17.5	79.2
Moderate Implementation	26	13.0	92.4
Significant Implementation	15	7.5	100.0
Total Responding	197	98.5	
Missing	3	1.5	
Total	**200**	**100.0**	

TABLE 47. Frequency Counts, Percentages, and Cumulative Percentages for Principals' Responses to Part II, Section B, Question 12: Students Receive Grades on Their Report Cards for AR Points (Impact: Students Receive Grades on Their Report Cards for AR Points)

Level of Impact	Frequency	Percentage	Cumulative Percentage
No Impact	119	59.5	61.0
Minimal Impact	35	17.5	79.0
Moderate Impact	28	14.0	93.3
Significant Impact	13	6.5	100.0
Total Responding	195	97.5	
Missing	5	2.5	
Total	**200**	**100.0**	

Tables 48 and 49 contain the results for levels of implementation and impact of teachers' receiving professional development training in AR. The percentages of responses for each level of implementation were close together. The least common response was Not Implemented, 21%. This was only 1% greater than Significant Implementation, 22%. The percentage of responses for Moderate Implementation, 27.5%, was only .5% less than that of Minimal Implementation, 28%. The percent-

ages of responses for Levels of Impact were also close together. The least common response was Significant Impact at 21.5%, and the most common response was Moderate Impact at 30.5%. No Impact and Minimal Impact tied at 22.5%.

TABLE 48. Frequency Counts, Percentages, and Cumulative Percentages for Principals' Responses to Part II, Section B, Question 13: Teachers Received Professional Development Training in AR (Implementation: Teachers Received Professional Development Training in AR)

Level of Implementation	Frequency	Percentage	Cumulative Percentage
Not Implemented	42	21.0	21.3
Minimal Implementation	55	27.5	49.2
Moderate Implementation	56	28.0	77.7
Significant Implementation	44	22.0	100.0
Total Responding	197	98.5	
Missing	3	1.5	
Total	200	100.0	

TABLE 49. Frequency Counts, Percentages, and Cumulative Percentages for Principals' Responses to Part II, Section B, Question 13: Teachers Received Professional Development Training in AR (Impact: Teachers Received Professional Development Training in AR)

Level of Impact	Frequency	Percentage	Cumulative Percentage
No Impact	45	22.5	23.2
Minimal Impact	45	22.5	46.2
Moderate Impact	61	30.5	77.8
Significant Impact	43	21.5	100.0
Total Responding	194	97.0	
Missing	6	3.0	
Total	**200**	**100.0**	

The levels of implementation and impact for students' taking AR Literacy Skills Tests are reported in Tables 50 and 51. The least frequent response for level of

implementation was minimal implementation, 9.5%, and the most frequent response was not implemented, 48.5%. Forty-nine percent of responding principals reported that AR Literacy Skills Tests had no impact. This was the most common response. The least common response was minimal impact, 10%. This response was only 5% less frequent than moderate impact, 15%.

TABLE 50. Frequency Counts, Percentages, and Cumulative Percentages for Principals' Responses to Part II, Section B, Question 14: Students Take AR Literacy Skills Tests (Implementation: Students Take AR Literacy Skills Tests)

Level of Implementation	Frequency	Percentage	Cumulative Percentage
Not Implemented	97	48.5	49.2
Minimal Implementation	19	9.5	58.9
Moderate Implementation	31	15.5	74.6
Significant Implementation	50	25.0	100.0
Total Responding	197	98.5	
Missing	3	1.5	
Total	**200**	**100.0**	

TABLE 51. Frequency Counts, Percentages, and Cumulative Percentages for Principals' Responses to Part II, Section B, Question 14: Students Take AR Literacy Skills Tests (Impact: Students Take AR Literacy Skills Tests)

Level of Impact	Frequency	Percentage	Cumulative Percentage
No Impact	98	49.0	50.5
Minimal Impact	20	10.0	60.8
Moderate Impact	30	15.0	76.3
Significant Impact	46	23.0	100.0
Total Responding	194	97.0	
Missing	6	3.0	
Total	**200**	**100.0**	

Tables 52 and 53 contain the results for the levels of implementation and impact of schools using AR testing correlated with their textbook series. Eleven percent of responding principals reported a significant level of implementation. This was the least frequent response but was only 2.5% less frequent than the response Minimal Implementation, 13.5%. The most frequent level of implementation was Not Imple-Mented 54%. Twelve percent of responding principals concluded that using AR testing correlated with their textbooks had a significant impact, and 13% decided that this reading improvement strategy had minimal impact. Significant Impact was the least common response. The most common response was No Impact at 54%.

TABLE 52. Frequency Counts, Percentages, and Cumulative Percentages for Principals' Responses to Part II, Section B, Question 15: Our School Uses AR Testing Correlated with Our Textbook Series (Implementation: Our School Uses AR Testing Correlated with Our Textbook Series)

Level of Implementation	Frequency	Percentage	Cumulative Percentage
Not Implemented	108	54.0	54.8
Minimal Implementation	27	13.5	68.5
Moderate Implementation	40	20.0	88.8
Significant Implementation	22	11.0	100.0
Total Responding	197	98.5	
Missing	3	1.5	
Total	**200**	**100.0**	

TABLE 53. Frequency Counts, Percentages, and Cumulative Percentages for Principals' Responses to Part II, Section B, Question 15: Our School Uses AR Testing Correlated with Our Textbook Series (Impact: Our School Uses AR Testing Correlated with Our Textbook Series)

Level of Impact	Frequency	Percentage	Cumulative Percentage
No Impact	108	54.0	55.4
Minimal Impact	26	13.0	68.7
Moderate Impact	37	18.5	87.7
Significant Impact	24	12.0	100.0
Total Responding	195	97.5	
Missing	5	2.5	
Total	**200**	**100.0**	

The results for levels of implementation and impact of schools using AR testing correlated with popular magazines are listed in Tables 54 and 55. Eighty percent of principals reported that they do not implement this strategy. This was by far the most frequent response. Minimal Implementation and Moderate Implementation were reported 8.5% and 8.0%, respectively. The least common response was Significant Implementation, 2%. Seventy-eight percent of principals indicated that using AR testing correlated with popular magazines had no impact. This was the most common response. The least common response was Significant Impact, 2%.

TABLE 54. Frequency Counts, Percentages, and Cumulative Percentages for Principals' Responses to Part II, Section B, Question 16: Our School Uses AR Testing Correlated with Popular Magazines (Implementation: Our School Uses AR Testing Correlated with Popular Magazines)

Level of Implementation	Frequency	Percentage	Cumulative Percentage
Not Implemented	160	80.0	80.0
Minimal Implementation	17	8.5	89.8
Moderate Implementation	16	8.0	98.0
Significant Implementation	4	2.0	100.0
Total Responding	197	98.5	100.0
Missing	3	1.5	
Total	**200**	**100.0**	

TABLE 55. Frequency Counts, Percentages, and Cumulative Percentages for Principals' Responses to Part II, Section B, Question 16: Our School Uses AR Testing Correlated with Popular Magazines (Impact: Our School Uses AR Testing Correlated with Popular Magazines)

Level of Impact	Frequency	Percentage	Cumulative Percentage
No Impact	157	78.5	80.5
Minimal Impact	18	9.0	89.7
Moderate Impact	16	8.0	97.9
Significant Impact	4	2.0	100.0
Total Responding	195	97.5	
Missing	5	2.5	
Total	**200**	**100.0**	

Summary of Data for Research Question Two

The principals' responses to Part II, Section B, Questions 1 through 16 were used to answer research Question Two. The questions in Part II, Section B of the Principal Questionnaire were constructed to identify the level of implementation and the level of impact of AR recommended reading strategies. The differences in the reported

level of significant implementation and the significant level of impact and AR reading strategies that were not implemented by a high percentage of principals are represented in Table 56. The AR student/teacher conference and AR sustained silent reading received the lowest levels of implementation. A possible reason for this is the amount of class time these two strategies would require to implement into the school day. Students self-select their own AR books for independent reading, students earn AR rewards other than certificates, and students take AR practices quizzes were all reported at significant levels of implementation and impact by over 60% of principals of AR schools. Significant implementation of students select their own AR books was reported at 73.0% by principals while significant impact of this AR reading strategy was reported by 66.5% of reporting AR principals.

TABLE 56. Percentages of Principals' Perceptions of Levels of Implementation and Impact of Selected AR Recommended Reading Strategies on Part II, Section B of the Principal Questionnaire Sorted by Level of Implementation

AR Strategies	No Impl	Mi Impl	Mo Impl	Sign Impl	No Impact	Mi Impact	Mo Impact	Sign Impact
Select AR Book	1.0%	3.5%	21.0%	73.0%	1.0%	6.0%	24.0%	66.5%
AR Other Rewards	6.0%	7.5%	17.0%	68.0%	6.5%	8.0%	22.0%	61.0%
AR Practice Quizzes	13.0%	8.5%	14.5%	62.5%	13.5%	9.5%	20.0%	54.5%
AR Reading Goals	6.0%	14.0%	28.0%	50.5%	6.5%	14.0%	30.5%	46.5%

TABLE 56. Continued

AR Strategies	No Impl	Mi Impl	Mo Impl	Sign Impl	No Impact	Mi Impact	Mo Impact	Sign Impact
Students Track AR Points	10.0%	15.5%	24.5%	48.5%	11.0%	17.5%	24.0%	45.0%
AR Goals Posted	16.5%	13.0%	23.5%	45.5%	18.0%	10.0%	26.5%	42.5%
AR Certificates	26.0%	12.5%	16.0%	44.0%	28.0%	12.0%	18.0%	39.5%
AR Student/Tchr Conferences	8.5%	23.5%	34.0%	32.5%	10.0%	23.0%	29.0%	34.5%
AR Sustained Silent Reading	17.5%	21.0%	27.5%	32.5%	17.0%	17.0%	28.5%	35.0%
AR School Store	50.0%	7.0%	11.5%	30.0%	50.5%	7.5%	11.5%	28.5%
AR Prof Development	21.0%	27.5%	28.0%	22.0%	22.5%	22.5%	30.5%	21.5%
AR Correlated Textbook	54.0%	13.5%	20.0%	11.0%	54.0%	13.0%	18.5%	12.0%
AR Grades on Report Card	60.5%	17.5%	13.0%	7.5%	59.5%	17.5%	14.0%	6.5%
AR Correlated Magazines	80.0%	8.5%	8.0%	2.0%	78.5%	9.0%	8.0%	2.0%
AR Literacy Skills Tests	48.5%	9.5%	15.5%	25.0%	49.0%	10.0%	15.0%	23.0%

The stem to each question in Part II, Section B was created to determine how recommendations from the publishers of AR were implemented at each school. Of the 252 principals returning the questionnaire, 82.1% reported implementing AR at some level while 69.4% of these same principals indicated that AR had significant to moderate impact toward student success in reading in their schools. In Table 57, the categories for levels of Not and Minimal Implementation, Moderate and Significant

Implementation, No Impact and Minimal Impact, and Moderate and Significant Impact are combined to illustrated levels of implementation and impact of AR recommended reading strategies. The principals' perception of level of implementation and level of impact of the reading strategies recommended by AR are illustrated in Figure 4.

TABLE 57. Principals' Perceptions from Schools Using AR for Part II, Section B of the Principal Questionnaire for Combined Categories: No and Minimal Implementation, Moderate and Significant Implementation, No Impact and Minimal Impact, and Moderate and Significant Impact

AR Strategies	No/Mi Impl	Mo/Sig Impl	No/Mi Impact	Mod/Sig Impact
Select AR Book	4.5%	94.0%	7.0%	90.5%
AR Other Rewards	13.5%	85.0%	14.5%	83.0%
AR Reading Goals	20.0%	78.5%	20.5%	77.0%
AR Practice Quizzes	21.5%	77.0%	23.0%	74.5%
Use Star Program	24.0%	74.5%	24.5%	72.5%
Students AR Track Points	25.5%	73.0%	28.5%	69.0%
Student AR Progress Posted	29.5%	69.0%	28.0%	69.0%
AR Student/ Teacher Conf	32.0%	66.5%	33.0%	63.5%
AR Sustained Silent Reading	38.5%	60.0%	34.0%	63.5%
AR Certificates	38.5%	60.0%	40.0%	57.5%
AR Prof Development	48.5%	50.0%	45.0%	52.0%
AR School Store	57.0%	41.5%	58.0%	40.0%
AR Literacy Skills Tests	58.0%	40.5%	59.0%	38.0%
AR Correlated Textbook	67.5%	31.0%	67.0%	30.5%
AR Graded	78.0%	20.5%	77.0%	20.5%
Correlated Magazines	88.5%	10.0%	87.5%	10.0%

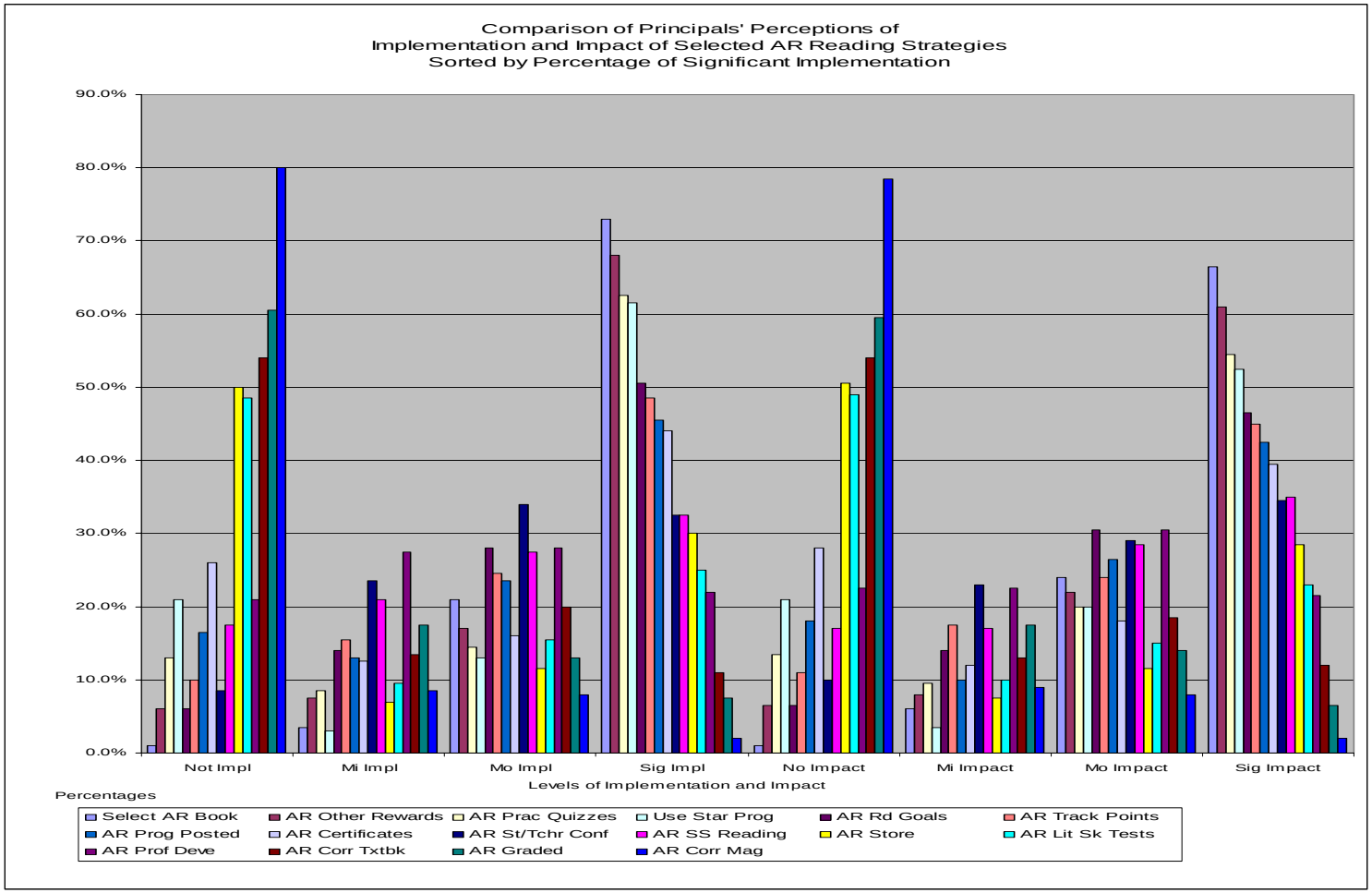

FIGURE 4. Comparison of Principals' Perceptions of Implementation and Impact of Selected AR Reading Strategies by Percentage of Significant Implication

A review of the table indicates the similarities of the principals' responses for level of implementation and level of impact. These results could have several possible interpretations. First, the more emphasis that was placed on a strategy actually resulted in a comparable level of results. Secondly, the similarity between the two could be the result of the principals' perception that the level of effort resulted in equivalent levels of impact. Because the levels of implementation and impact are similar discussion will focus on implementation.

As seen in Table 57 and Figure 5, 10 of the AR recommended practices were implemented at the combined moderate to significant level of implementation by 60% of the principals. The highest percentage reported combining moderate and significant implementation levels was 90.5% to allow students to self-select their own AR books. The data reported in this study support the use of this strategy to improve student success in reading.

AR professional development for teachers was reported at a combined moderate to significant level of implementation of 50% and a moderate to significant level of impact of 52%. Interestingly, the use of professional development to improve instruction in reading was reported at a combined moderate to significant level of implementation and impact of 98% and 96% of all principals returning the questionnaire. Considering the importance that principals returning the questionnaire place on professional development, the fact that half the schools using AR provide teachers with no training to minimum training in use of the AR program is worthy of note.

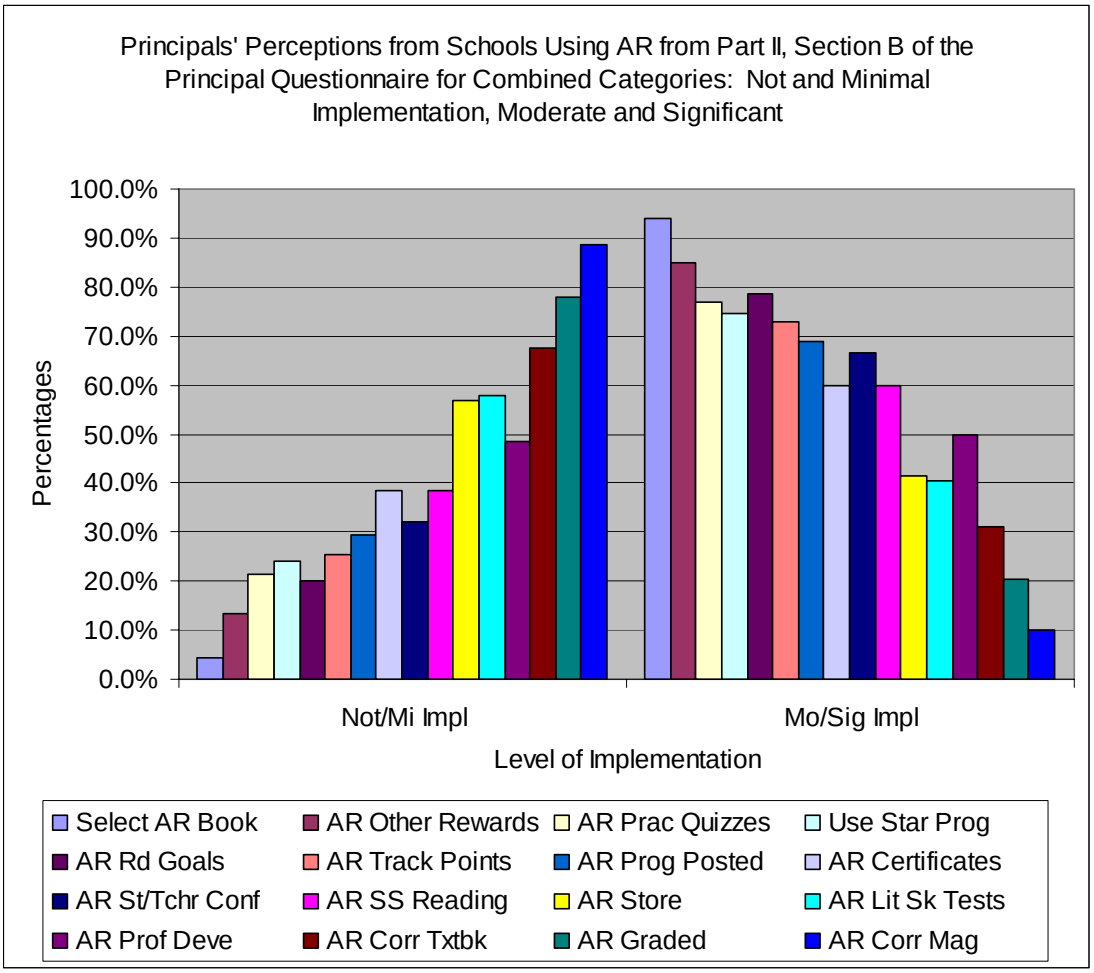

FIGURE 5. Principals' Perceptions from Schools Using AR for Part II, Section B of the Principal Questionnaire for Combined Categories: Not and Minimal Implementation, Moderate and Significant Implementation

Allowing students to select their own AR books and giving AR rewards other than certificates were reported by principals to be most effective strategies to promote student success in reading. Over 70% of principals reported that using AR reading goals, using AR practice quizzes, and use of the Star reading program to determine students' reading levels resulted in moderate to significant impact upon student

success in reading. The of use of rewards other than certificates, extrinsic motivators, to increase students' participation in independent reading was reported at the moderate to significant levels of implementation and impact, 85% and 83%, respectively.

Students tracking their AR progress, the posting of AR points, the use of sustained silent reading were ranked at the moderate to significant levels of implementation and impact by about 60% of principals using AR. AR materials suggest the implementation of sustained silent reading on a daily basis. The fact that about 40% of principals who use the AR program in their schools do not implement this AR recommended strategy was possibly due to the large number of instructional activities that must be scheduled during the regular school day.

The use of the AR store and AR literacy tests was reported around the 40% level of implementation and impact. The reason for these lower levels of implementation and thus impact could be the cost to implement these strategies. An AR store takes money and time while use of the AR literacy tests would be an additional cost to the program.

Research Question Three

Review of Data for Research Question Three

Research Question Three was constructed to determine, "What are the principal's perceptions of the level of implementation and the level of impact of AR-like recommended reading strategies in selected non-AR schools?"

Principals of schools that do not use the AR program were asked to complete Part III of the Principal Questionnaire. For purposes of this study, schools where the

principal indicated that the AR program was not used in their school were called non-AR schools. Fifty-two principals indicated on Part I, Question 8 that they did not implement the AR program. The questions in Part III are constructed to determine if schools that do not use the AR program use reading strategies similar to those used in the AR program. These similar reading strategies are called AR-like recommended reading strategies in this study. Two of the schools indicating that they did not implement the AR program did not complete Part III of the Principal Questionnaire. Following is a review of the statistics collected from Part III of the questionnaire.

Tables 58 and 59 contain the data for the levels of implementation and impact of students selecting their own books for independent reading. Minimal implementation was the least frequent response at 1.9%, and 5.8% of respondents reported that this reading improvement strategy was not implemented. The most common response was significant implementation, 59.6%. Fifty percent of responding principals concluded that allowing students to select books for independent reading had a significant impact. This was the most frequent response. Only 3.8% of principals believed that this reading strategy had no impact, and 1.9% of principals decided that this reading improvement strategy had a minimal impact.

TABLE 58. Frequency Counts, Percentages, and Cumulative Percentages for Principals' Responses to Part III, Question 1: Students Select Their Own Books for Independent Reading (Implementation: Students Select Their Own Books for Independent Reading)

Level of Implementation	Frequency	Percentage	Cumulative Percentage
Not Implemented	3	5.8	6.0
Minimal Implementation	1	1.9	8.0
Moderate Implementation	15	28.8	38.0
Significant Implementation	31	59.6	100.0
Total Responding	50	96.2	
Missing	2	3.8	
Total	**52**	**100.0**	

TABLE 59. Frequency Counts, Percentages, and Cumulative Percentages for Principals' Responses to Part III, Question 1: Students Select Their Own Books for Independent Reading (Impact: Students Select Their Own Books for Independent Reading)

Level of Impact	Frequency	Percentage	Cumulative Percentage
No Impact	2	3.8	4.0
Minimal Impact	1	1.9	6.0
Moderate Impact	21	40.4	48.0
Significant Impact	26	50.0	100.0
Total Responding	50	96.2	
Missing	2	3.8	
Total	**52**	**100.0**	

The level of implementation and level of impact of requiring students to read books on their independent reading levels are listed in Tables 60 and 61. No principals responded that this reading improvement strategy was not implemented or minimally implemented. Principals stated that requiring students to read books on their independent reading levels was implemented at a moderate level, 21.2%, or at a significant level, 75%, in all of the responding schools. All respondents concluded

that this reading improvement strategy had some impact. Responding principals concluded that this reading improvement strategy had a moderate impact in 17.3% of responding schools and a significant impact in 76.9% of responding schools. Significant Impact was by far the most frequent response. Only 1.9% of principals selected Minimal Impact as a response.

TABLE 60. Frequency Counts, Percentages, and Cumulative Percentages for Principals' Responses to Part III, Question 2: Students Read Books on Their Independent Reading Level (Implementation: Students Read Books on Their Independent Reading Level)

Level of Implementation	Frequency	Percentage	Cumulative Percentage
Not Implemented	0	0.0	0.0
Minimal Implementation	0	0.0	0.0
Moderate Implementation	11	21.2	22.0
Significant Implementation	31	75.0	100.0
Total Responding	50	96.2	
Missing	2	3.8	
Total	**52**	**100.0**	

TABLE 61. Frequency Counts, Percentages, and Cumulative Percentages for Principals' Responses to Part III, Question 2: Students Read Books on Their Independent Reading Level (Impact: Students Read Books on Their Independent Reading Level)

Level of Impact	Frequency	Percentage	Cumulative Percentage
No Impact	0	0.0	0.0
Minimal Impact	1	1.9	2.0
Moderate Impact	9	17.3	20.0

TABLE 61. Continued

Level of Impact	Frequency	Percentage	Cumulative Percentage
Significant Impact	40	76.9	100.0
Total Responding	50	96.2	
Missing	2	3.8	
Total	**52**	**100.0**	

Tables 62 and 63 contain data representing the levels of implementation and impact of students' taking tests on the books that they read. The least common response was Significant Implementation, 17.3%. Significant Implementation was only reported 1.9% fewer times than Not Implemented, 19.2%. The most common response was Minimal Implementation at 34.6%. Significant Impact was the least common response at 17.3%, and Moderate Impact was the most common response at 34.6%.

TABLE 62. Frequency Counts, Percentages, and Cumulative Percentages for Principals' Responses to Part III, Question 3: Students Take Tests on the Books They Read (Implementation: Students Take Tests on the Books They Read)

Level of Implementation	Frequency	Percentage	Cumulative Percentage
Not Implemented	10	19.2	20.0
Minimal Implementation	18	34.6	56.0
Moderate Implementation	13	25.0	82.0
Significant Implementation	9	17.3	100.0
Total Responding	50	96.2	
Missing	2	3.8	
Total	**52**	**100.0**	

TABLE 63. Frequency Counts, Percentages, and Cumulative Percentages for Principals' Responses to Part III, Question 3: Students Take Tests on the Books They Read (Impact: Students Take Tests on the Books They Read)

Level of Impact	Frequency	Percentage	Cumulative Percentage
No Impact	10	19.2	20.0
Minimal Impact	18	34.6	56.0
Moderate Impact	13	25.0	82.0
Significant Impact	9	17.3	100.0
Total Responding	50	96.2	
Missing	2	3.8	
Total	**52**	**100.0**	

The levels of implementation and impact of directing reading practice through student and teacher conferences are reported in Tables 64 and 65. All respondents implemented this reading improvement strategy. Responding principals reported 5.8% minimal implementation, 38.5% moderate implementation, and 51.9% significant implementation. All responding principals also felt that directing reading practice through student and teacher conferences had some impact. Most responding principals concluded that this reading improvement strategy had a significant impact, 59.6%, and 5.8% of responding principals believed that the student/teacher conferences had a minimal impact.

TABLE 64. Frequency Counts, Percentages, and Cumulative Percentages for Principals' Responses to Part III, Question 4: Students and Teachers Conference to Direct Reading Practice (Implementation: Students and Teachers Conference to Direct Reading Practice)

Level of Implementation	Frequency	Percentage	Cumulative Percentage
Not Implemented	0	0.0	0.0
Minimal Implementation	3	5.8	6.0
Moderate Implementation	20	38.5	46.0
Significant Implementation	27	51.9	100.0
Total Responding	50	96.2	
Missing	2	3.8	
Total	**52**	**100.0**	

TABLE 65. Frequency Counts, Percentages, and Cumulative Percentages for Principals' Responses to Part III, Question 4: Students and Teachers Conference to Direct Reading Practice (Impact: Students and Teachers Conference to Direct Reading Practice)

Level of Impact	Frequency	Percentage	Cumulative Percentage
No Impact	0	0.0	0.0
Minimal Impact	3	5.8	6.0
Moderate Impact	16	30.8	38.0
Significant Impact	31	59.6	100.0
Total Responding	50	96.2	
Missing	2	3.8	
Total	**52**	**100.0**	

The levels of implementation and impact of students' setting their own reading goals are shown in Tables 66 and 67. Most respondents, 42.3%, communicated that they moderately implemented this reading improvement strategy. Minimal Implementation, 25%, and Significant Implementation, 23.1%, were reported with close to the same frequency. The least frequent response was Not Implemented at 5.8%. The most common response for level of impact was Moderate Impact, 48.1%, and the

least common response was No Impact at 7.7%. Like Minimal Implementation and Significant Implementation, the percentages for Minimal Impact, 21.2%, and Significant Impact, 19.2%, were relatively close together.

TABLE 66. Frequency Counts, Percentages, and Cumulative Percentages for Principals' Responses to Part III, Question 5: Students Have Set Reading Goals (Implementation: Students Have Set Reading Goals)

Level of Implementation	Frequency	Percentage	Cumulative Percentage
Not Implemented	3	5.8	6.0
Minimal Implementation	13	25.0	32.0
Moderate Implementation	22	42.3	76.0
Significant Implementation	12	23.1	100.0
Total Responding	50	96.2	
Missing	2	3.8	
Total	**52**	**100.0**	

TABLE 67. Frequency Counts, Percentages, and Cumulative Percentages for Principals' Responses to Part III, Question 5: Students Have Set Reading Goals (Impact: Students Have Set Reading Goals)

Level of Impact	Frequency	Percentage	Cumulative Percentage
No Impact	4	7.7	8.0
Minimal Impact	11	21.2	30.0
Moderate Impact	25	48.1	80.0
Significant Impact	10	19.2	100.0
Total Responding	50	96.2	
Missing	2	3.8	
Total	**52**	**100.0**	

Tables 68 and 69 contain the data for the levels of implementation and impact of students' keeping track of their progress toward their reading goals. The most common response for level of implementation was Moderate Implementation at 40.4%, and the most common response for level of impact was Moderate Impact at 44.2%. The least common response for level of implementation was Not Implemented at 13.5%. No Impact and Significant Impact tied for the least common response at 15.4%.

TABLE 68. Frequency Counts, Percentages, and Cumulative Percentages for Principals' Responses to Part III, Question 6: Students Keep Track of Their Progress toward Their Reading Goals (Implementation: Students Keep Track of Their Progress toward Their Reading Goals)

Level of Implementation	Frequency	Percentage	Cumulative Percentage
Not Implemented	7	13.5	14.0
Minimal Implementation	12	23.1	38.0
Moderate Implementation	21	40.4	80.0
Significant Implementation	10	19.2	100.0
Total Responding	50	96.2	
Missing	2	3.8	
Total	**52**	**100.0**	

TABLE 69. Frequency Counts, Percentages, and Cumulative Percentages for Principals' Responses to Part III, Question 6: Students Keep Track of Their Progress toward Their Reading Goals (Impact: Students Keep Track of Their Progress toward Their Reading Goals)

Level of Impact	Frequency	Percentage	Cumulative Percentage
No Impact	8	15.4	16.0
Minimal Impact	11	21.2	38.0
Moderate Impact	23	44.2	84.0
Significant Impact	8	15.4	100.0
Total Responding	50	96.2	
Missing	2	3.8	
Total	**52**	**100.0**	

The levels of implementation and impact of posting students' achievement of reading goals in classrooms, hallways, and/or the library are listed in Tables 70 and 71. This reading strategy was not implemented by 48.1% of respondents. Not Implemented was the most common response. The least common response was Significant Implementation at 11.5%. This response was only 2% less frequent that the response Minimal Implementation, 13.5%. The most common response for level of impact was No Impact at 46.2%. The least common response was Minimal Impact at 13.5%. This frequency of this response was close to that of Significant Impact at 15.4%.

TABLE 70. Frequency Counts, Percentages, and Cumulative Percentages for Principals' Responses to Part III, Question 7: Students' Achievement of Reading Goals Is Posted in Classrooms, Hallways, and/or the Library (Implementation: Students' Achievement of Reading Goals Is Posted in Classrooms, Hallways, and/or the Library

Level of Implementation	Frequency	Percentage	Cumulative Percentage
Not Implemented	25	48.1	50.0
Minimal Implementation	7	13.5	64.0
Moderate Implementation	12	23.1	88.0
Significant Implementation	6	11.5	100.0
Total Responding	50	96.2	
Missing	2	3.8	
Total	**52**	**100.0**	

TABLE 71. Frequency Counts, Percentages, and Cumulative Percentages for Principals' Responses to Part III, Question 7: Students' Achievement of Reading Goals Is Posted in Classrooms, Hallways, and/or the Library (Impact: Students' Achievement of Reading Goals Is Posted in Classrooms, Hallways, and/or the Library)

Level of Impact	Frequency	Percentage	Cumulative Percentage
Not Impact	24	46.2	48.0
Minimal Impact	7	13.5	62.0
Moderate Impact	11	21.2	84.0
Significant Impact	8	15.4	100.0
Total Responding	50	96.2	
Missing	2	3.8	
Total	52	100.0	

Tables 72 and 73 contain the data representing the levels of implementation and impact where students were given more than 30 minutes a day during school for sustained silent reading. This strategy was not implemented at 32.7% of responding schools. Not Implemented was the most common response. Minimal Implementation and Moderate Implementation of this reading improvement strategy were

reported by 17.3% of responding principals. These responses tied for least frequent response. This strategy was significantly implemented by 26.9% of responding schools. The most common response for level of impact was Significant Impact, 32.7%, which was only 1.5% greater than the response No Impact, 30.8%. The least common response for level of impact was Minimal Impact at 13.5%.

TABLE 72. Frequency Counts, Percentages, and Cumulative Percentages for Principals' Responses to Part III, Question 8: Students Are Given More than 30 Minutes a Day During School for Sustained Silent Reading (Implementation: Students Are Given More than 30 Minutes a Day During School for Sustained Silent Reading)

Level of Implementation	Frequency	Percentage	Cumulative Percentage
Not Implemented	17	32.7	34.7
Minimal Implementation	9	17.3	53.1
Moderate Implementation	9	17.3	71.4
Significant Implementation	14	26.9	100.0
Total Responding	49	94.2	
Missing	3	5.8	
Total	**52**	**100.0**	

TABLE 73. Frequency Counts, Percentages, and Cumulative Percentages for Principals' Responses to Part III, Question 8: Students Are Given More than 30 Minutes a Day During School for Sustained Silent Reading (Impact: Students Are Given More than 30 Minutes a Day During School for Sustained Silent Reading)

Level of Impact	Frequency	Percentage	Cumulative Percentage
Not Impact	16	30.8	34.7
Minimal Impact	7	13.5	53.1
Moderate Impact	10	19.2	71.4
Significant Impact	17	32.7	100.0
Total Responding	50	96.2	
Missing	2	3.8	
Total	**52**	**100.0**	

Tables 74 and 75 contain the results for the level of implementation of impact of students' receiving certificates for reading books. The most common response for the level of implementation was Not Implemented, 36.5%, and the least common response for level of implementation was Minimal Implementation, 15.4%. Responding principals, 36.5%, most frequently concluded that students' receiving certificates for reading books had No Impact. The least common response for level of impact was Minimal Impact, 17.3%. Moderate Impact,19.2%, was only 1.9% more frequently chosen than Minimal Impact.

Table 74. Frequency Counts, Percentages, and Cumulative Percentages for Principals' Responses to Part III, Question 9: Students Receive Certificates for Reading Books (Implementation: Students Receive Certificates for Reading Books)

Level of Implementation	Frequency	Percentage	Cumulative Percentage
Not Implemented	19	36.5	28.0
Minimal Implementation	8	15.4	54.0
Moderate Implementation	11	21.2	76.0
Significant Implementation	12	23.1	100.0
Total Responding	50	96.2	
Missing	2	3.8	
Total	**52**	**100.0**	

TABLE 75. Frequency Counts, Percentages, and Cumulative Percentages for Principals' Responses to Part III, Question 9: Students Receive Certificates for Reading Books (Impact: Students Receive Certificates for Reading Books)

Level of Impact	Frequency	Percentage	Cumulative Percentage
No Impact	19	36.5	38.0
Minimal Impact	9	17.3	56.0
Moderate Impact	10	19.2	76.0
Significant Impact	12	23.1	100.0
Total Responding	50	96.2	
Missing	2	3.8	
Total	**52**	**100.0**	

The level of implementation and impact of students' earning rewards other than certificates for reading books are shown in Tables 76 and 77. Responding principals selected each of the categories for level of implementation with relatively the same frequency. Rewards other than certificates for reading books were not given at 26.9% of responding schools. This was the most common response followed by Significant Implementation at 25%. The least common response was Moderate Implementation at 21.2%. This response was only 1.9% less frequent than the response of Minimal Impact, 23.1%. Responding principals concluded that this reading improvement strategy had No Impact at a frequency of 30.8%. Twenty-five percent of responding principals concluded that this reading improvement strategy had a Moderate Impact; 23.1% of responding principals found that it had a Significant Impact; and 17.3% of responding principals determined that it had a Minimal Impact. Minimal Impact was the least common response.

TABLE 76. Frequency Counts, Percentages, and Cumulative Percentages for Principals' Responses to Part III, Question 10: Students Earn Rewards Other than Certificates for Reading Books (Implementation: Students Earn Rewards Other than Certificates for Reading Books)

Level of Implementation	Frequency	Percentage	Cumulative Percentage
Not Implemented	14	26.9	28.0
Minimal Implementation	12	23.1	52.0
Moderate Implementation	11	21.2	74.0
Significant Implementation	13	25.0	100.0
Total Responding	50	96.2	100.0
Missing	2	3.8	
Total	**52**	**100.0**	

TABLE 77. Frequency Counts, Percentages, and Cumulative Percentages for Principals' Responses to Part III, Question 10: Students Earn Rewards Other than Certificates for Reading Books (Impact: Students Earn Rewards Other than Certificates for Reading Books)

Level of Impact	Frequency	Percentage	Cumulative Percentage
No Impact	16	30.8	32.0
Minimal Impact	9	17.3	50.0
Moderate Impact	13	25.0	76.0
Significant Impact	12	23.1	100.0
Total Responding	50	96.2	
Missing	2	3.8	
Total	**52**	**100.0**	

Analysis of Data for Research Question Three

The categories for levels of implementation and impact were combined on Table 78 and Figure 6. The new categories are: No and Minimal Implementation, Moderate and Significant Implementation, No Impact and Minimal Impact, and Moderate and Significant Impact. This was done to summarize the data collected

from principals of schools who did not implement AR. An examination of Table 78 and Figure 6 finds the percentage for level for implementation and percentage for level for impact of each AR-like reading strategy to be similar for most AR-like reading strategies. These similar results are consistent across reported levels of implementation and impact in Part I and II of the Principals Questionnaire. The highest percentages reported are 96.2% and 94.2% at the moderate to significant levels of implementation and impact on the new combined categories for students reading books at their independent reading level. The next reading strategies received around the 90 percentile for implementation and impact. These included students selecting their own books and student/teacher conferences to direct reading practice.

TABLE 78. Principals' Perceptions from Schools Not Using AR for Part III of the Principal Questionnaire for Combined Categories: Not and Minimal Implementation, Moderate and Significant Implementation, No Impact and Minimal Impact, and Moderate and Significant Impact

AR-Like Strategies	Not/Mi Impl	Mod/Sig Impl	No/Min Impact	Mod/Sig Impact
Books on Ind Reading Level	0.0%	96.2%	1.9%	94.2%
Student/Teachers Conference	5.8%	90.4%	5.8%	90.4%
Select own books	7.7%	88.4%	5.7%	90.4%
Student Set Reading Goals	30.8%	65.4%	28.9%	67.3%
Students Track Progress	36.6%	59.6%	36.6%	59.6%
Other Rewards	50.0%	46.2%	48.1%	48.1%
Certificates	51.9%	44.3%	53.8%	42.3%
SS Reading	50.0%	44.2%	44.3%	51.9%
Take Test on Books	53.8%	42.3%	53.8%	42.3%
Student Progress Posted	61.6%	34.6%	59.7%	36.5%

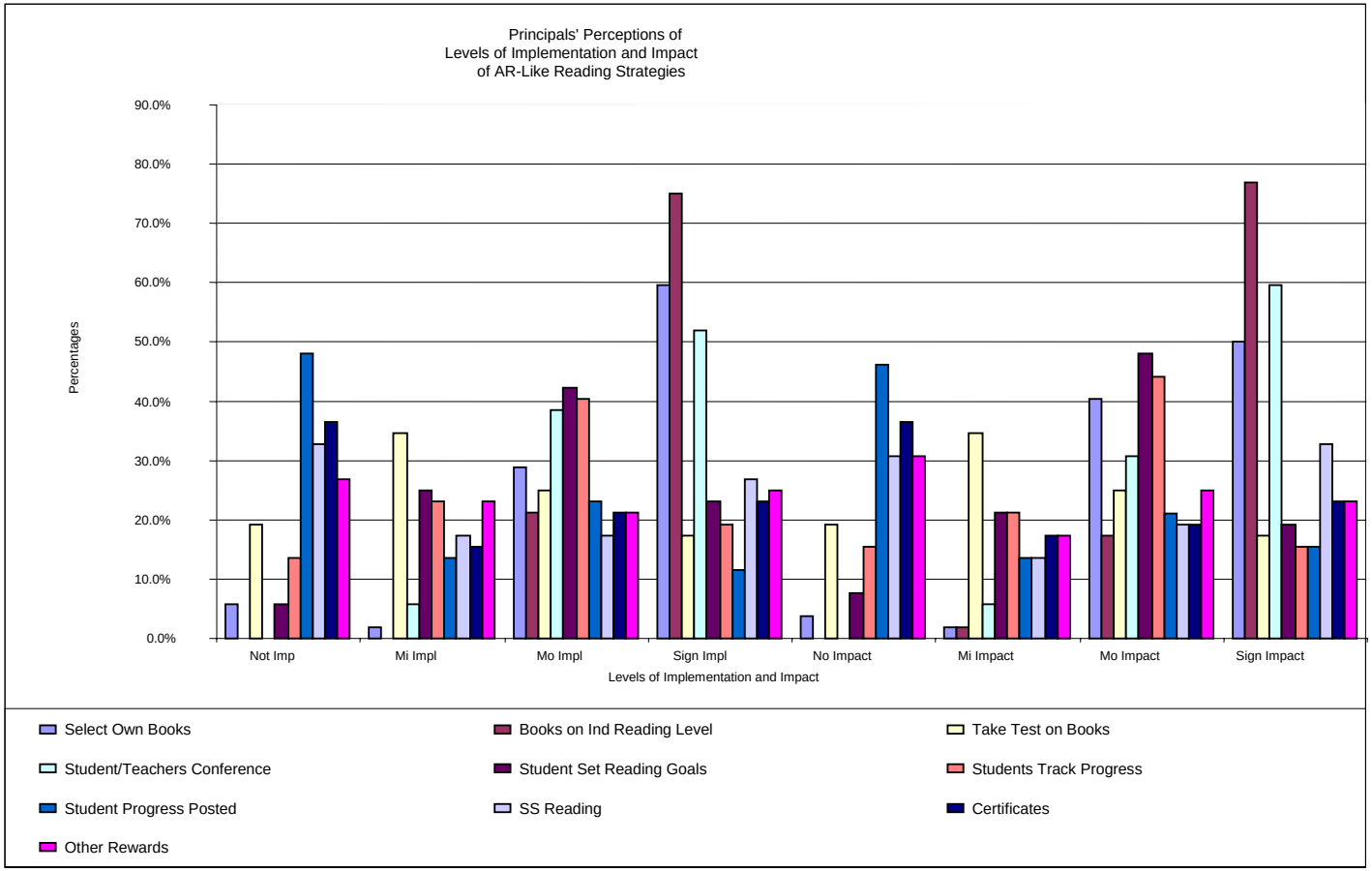

FIGURE 6. Comparison of the Principals' Perceptions of Levels of Implementation and Impact of AR-Like Reading Strategies

Certificates and rewards were implemented in about half of the schools. Student progress was reported in the hallways and libraries in about one-third of the schools. The use of more than 30 minutes of sustained silent reading during the school day was reported at the moderate to significant level of implementation by 44.2% of the principals. The principals, however, reported the level of impact for this activity to be 51.9%. This 7.7% difference calls for further study because it is one of the highest differences between the level of implementation and level impact found in this study.

The top three AR-like reading strategies were ranked at the moderate to significant level of impact by over 90% of principals of non-AR schools. These key reading strategies included: students read books on their independent reading level, the use of student/teacher conferences, and students select their own books. These three strategies do not require expenditures of budget funds. The use of other rewards and certificates for motivating students to read, sustained silent reading, students take tests on the books they read and students' progress posted were ranked at moderate to significant levels of implementation and impact by less than 50% of non-AR principals. Similar AR strategies, however, were reported by 70% or more principals of AR schools at the moderate to significant levels of implementation and impact. These findings seem to indicate a difference between educational philosophies of principals of schools using the AR program and schools where the AR program is not used. The use of extrinsic motivators to promote student success in reading seems to be at the root of this difference in levels of implementation and impact since schools where AR is not implemented do not use extrinsic motivators to the degree that they were used in AR schools.

Research Question Four

Review of Data for Research Question Four

Research Question Four was constructed to answer the following question: "Are there significant differences between selected AR and non-AR schools in the principal's perceptions of the level of implementation and level of impact of selected reading strategies? "

The findings for Research Question 4 address Purpose 1: To identify the principal's perception of the levels of implementation and impact of selected reading strategies used by selected elementary schools in Texas to improve student success in reading. Questions 1 through 9, Part I of the Principal Questionnaire were used to answer this research question.

Table 79 compares the subject factors of mean and standard deviation of responding principals' perceptions of the implementation of selected reading strategies used by AR. The mean derived from the subject factors of mean are calculated by an average of the principals' responses to each item on the questionnaire. The responses for Not Implemented/No Impact were represented by one point, while Significant Implementation/Significant Impact was represented by four points. Participation of teachers in professional development had the highest overall mean of 3.73. The lowest overall mean was 1.63 for Reading Counts. For schools using AR, the highest mean was 3.71 in professional development; and the lowest mean was 1.17 in Reading Counts. For schools using other reading programs, the highest mean

was 3.81 in professional development. Not surprisingly, the lowest mean for non-AR schools was 1.25 in the AR category. IREAP had a mean of 1.63 for both AR and non-AR schools.

TABLE 79. Comparison Between-Subject Factors of Mean and Standard Deviation of the Principals' Perceptions of the Implementation of Selected Reading Strategies Used by AR and Non-AR Schools

Selected Reading Strategy Used	Use AR	Mean	Std. Deviation	N
Reading Textbooks	Yes	3.15	.843	200
	No	2.73	.866	52
	Total	**3.06**	**.863**	**252**
Literature Circles	Yes	2.44	1.155	200
	No	3.02	.896	52
	Total	**2.56**	**1.129**	**252**
Classroom Libraries	Yes	3.33	.694	200
	No	3.67	.513	52
	Total	**3.40**	**.675**	**252**
Parent Participation	Yes	2.92	.843	200
	No	3.04	.816	52
	Total	**2.94**	**.838**	**252**
Professional Development	Yes	3.71	.545	200
	No	3.81	.398	52
	Total	**3.73**	**.519**	**252**
IREAP	Yes	1.63	1.000	200
	No	1.63	.950	52
	Total	**1.63**	**.988**	**252**
Reading Counts	Yes	1.17	.586	200
	No	1.75	1.064	52
	Total	**1.29**	**.746**	**252**
AR	Yes	3.69	.691	200
	No	1.25	.682	52
	Total	**3.18**	**1.204**	**252**
Other Computer Programs	Yes	2.07	1.248	200

The standard deviations for reading textbooks were close together: .843 for AR schools, .866 for non-AR schools, and .863 total standard deviation. For literature circles, the standard deviation for AR schools, 1.155, was higher than that of non-AR schools, .896. The total standard deviation for literature circles was 1.129. Class-room libraries had a standard deviation of .694 in AR schools and .513 in non-AR schools. The total standard deviation for this category was .675. Parent participation was another category that had close standard deviations: .843 for AR schools, .816 for non-AR schools, and .838 total standard deviation. Non-AR schools had a standard deviation of .398 for professional development, which was .147 lower than the standard deviation of .545 for AR schools and .121 lower than the total standard deviation of .519. For IREAP, AR schools had a standard deviation of 1.000 and non-AR schools had a standard deviation of .950. The total standard deviation for this category was .988. AR schools had a much lower standard deviation for Reading Counts, .586, than that of non-AR schools, 1.064. The total standard deviation for this category was .746. For AR, the standard deviations for both AR, .691, and non-AR schools, .682, were close together. The total standard deviation for this category, 1.204, was much larger than that of AR and non-AR schools. The standard deviations for other computer programs were relatively close together. The standard deviation for AR schools was 1.248 and for non-AR schools was 1.126. The total standard deviation was 1.230.

Table 80 contains the results from Levene's Test of Equality of Error Variances for the principal's perceptions of the implementation of selected reading strategies used by AR and Non-AR schools. Levene's Test was used to compare the data

collected from AR schools and non-AR schools to determine whether variances in the results for each group were homogeneous. The null hypothesis was that the variances of the groups were equal. Significance was tested at p = .05 level. The null hypothesis was rejected for literature circles, p = .000; classroom libraries, p = .004; professional development, p = .014; and Reading Counts, p = .000. Results were significant beyond the .05 level for literature circles, p = .000; classroom libraries, p = .004; and Reading Counts, p = .000.

TABLE 80. Levene's Test of Equality of Error Variances[a] for the Principals' Perceptions of the Implementation of Selected Reading Strategies Used by AR and Non-AR Schools

Selected Reading Strategy Used	F	df1	df2	Sig.
Reading Textbooks	.576	1	250	.449
Literature Circles	24.573	1	250	*.000
Classroom Libraries	8.544	1	250	*.004
Parent Participation	.626	1	250	.429
Professional Development	6.113	1	250	.014
IREAP	.030	1	250	.863
Reading Counts	71.342	1	250	*.000
AR	1.222	1	250	.270
Other Computer Programs	3.883	1	250	*.050

[a]Tests the null hypothesis that the error variance of the dependent variable is equal across groups (SPSS).
*Indicates results significant at or beyond the .05 level

In addition to the use of Levene's Test of Equality of Error of Variances the Tests of Between-Subject Effects was used to further confirm the significant results found

in this study. The results of the test of between-subject effects for the principals' perceptions of the implementation of selected reading strategies used by AR and non-AR schools are displayed in Table 81. The test of between-subject effects was used to compare the means of each selected reading improvement category for AR schools and non-AR schools to determine whether differences in these means were significant or if the results were obtained by chance. The null hypothesis was that there was no difference between the means of the AR and non-AR schools. All significant results were significant at or beyond the .05 level. Results were significant for reading textbooks, p = .002, literature circles, p = .001, classroom libraries, p = .001, Reading Counts, p = .000, AR, p = .000, and other computer reading programs, p = .050.

TABLE 81. Tests of Between-Subject Effects for the Principals' Perceptions of the Implementation of Selected Reading Strategies Used by AR and Non-AR Schools

Selected Reading Strategy Used	df	Mean Square	F	Sig.
Reading Textbooks	1	7.253	10.089	*.002
Literature Circles	1	13.846	11.303	*.001
Classroom Libraries	1	5.000	11.435	*.001
Parent Participation	1	.629	.896	.345
Professional Development	1	.394	1.464	.227
IREAP	1	.004	.004	.950
Reading Counts	1	13.883	27.553	*.000
AR	1	244.694	514.483	*.000
Other Computer Programs	1	5.156	3.439	.065

*Indicates results significant beyond the .05 level

Table 82 contains the data representing the subject factors of mean and standard deviation of the principals' perceptions of the impact of selected reading strategies used by AR and non-AR schools. The highest total mean, 3.80, AR school mean, 3.79, and non-AR school mean, 3.79, were in professional development. The lowest total mean, 1.30, and lowest AR school mean, 1.19, were in Reading Counts. The lowest non-AR school mean, 1.17, was in AR.

TABLE 82. Comparison Between-Subject Factors of Mean and Standard Deviation of the Principals' Perceptions of the Impact of Selected Reading Strategies Used by AR and Non-AR Schools

Selected Reading Strategy Used	Use AR	Mean	Std. Deviation	N
Reading Textbooks	Yes	3.04	.811	198
	No	2.75	.926	52
	Total	**2.98**	**.843**	**250**
Literature Circles	Yes	2.52	1.208	198
	No	3.17	.923	52
	Total	**2.65**	**1.183**	**250**
Classroom Libraries	Yes	3.34	1.208	198
	No	3.67	.513	52
	Total	**3.41**	**.672**	**250**
Parent Participation	Yes	2.93	.893	198
	No	3.12	.832	52
	Total	**2.97**	**.882**	**250**
Professional Development	Yes	3.79	2.028	198
	No	3.81	.445	52
	Total	**3.80**	**1.815**	**250**
IREAP	Yes	1.64	.997	198
	No	1.63	.950	52
	Total	**1.64**	**.986**	**250**
Reading Counts	Yes	1.19	.640	198
	No	1.71	1.016	52
	Total	**1.30**	**.762**	**250**
AR	Yes	3.46	.758	198
	No	1.17	.550	52
	Total	**2.99**	**1.177**	**250**
Other Computer Programs	Yes	2.04	1.223	198
	No	1.71	1.126	52
	Total	**1.97**	**1.209**	**250**

For reading textbooks, the standard deviations were .811 for AR schools, .926 for non-AR schools, and .843 overall. The standard deviation was greater for AR schools, 1.208, than that of non-AR schools, .923, and that of the total standard deviation, 1.193, in literature circles. Classroom libraries had a lower standard deviation in non-AR schools, .513, than in AR schools, 1.208. The total standard deviation for classroom libraries was .672. The standard deviations for parent participation were relatively equal: .893 for AR schools, .832 for non-AR schools, and .882 for total standard deviation. The standard deviation for non-AR schools was .445 in professional development. This was much lower than the standard deviation for AR schools, 2.208, in the same category. The total standard deviation for professional development was 1.815. IREAP was another category that had close standard deviations. The standard deviation was .997 for AR schools, .950 for non-AR schools, and .986 for total standard deviation. AR schools had a lower standard deviation for Reading Counts, .640, than non-AR schools had, 1.016. The total standard deviation for Reading Counts was .762. As expected, the standard deviation for use of AR in non-AR schools, .550, was lower for use of AR than that of AR schools, .758, and the total standard deviation, 1.177. These data were affected by the fact that some principals indicated that their schools were not AR schools, but these same principals also indicated that they implemented the program at minimal levels. In written comments these principals indicated the AR program was used with special populations. The standard deviations for other computer programs were relatively close. The standard deviation for AR schools was 1.223, for non-AR schools was, and for total standard deviation was 1.209.

Table 83 contains the results of Levene's Test of Equality of Error Variances for the principal's perceptions of the impact of selected reading strategies used by AR and Non-AR schools. As explained above, Levene's Test was used to compare the data collected from AR schools and non-AR schools to determine whether differences in the results for each group were significant or if the results were obtained by chance. The null hypothesis was that the variances for the dependent variable were equal across groups. Significance was tested at p = .05 level. Results were significant for reading textbooks, p = .012, literature circles, p = .000, classroom libraries, p = .003, Reading Counts, p = .000, and AR, p = .000.

TABLE 83. Levene's Test of Equality of Error Variances for the Principals' Perceptions of the Impact of Selected Reading Strategies Used by AR and Non-AR Schools

Selected Reading Strategy Used	F	df1	df2	Sig.
Reading Textbooks	6.420	1	248	.012
Literature Circles	21.786	1	248	*.000
Classroom Libraries	9.180	1	248	*.003
Parent Participation	.827	1	248	.364
Professional Development	.818	1	248	.367
IREAP	.104	1	248	.747
Reading Counts	47.053	1	248	*.000
AR	31.696	1	248	*.000
Other Computer Programs	2.194	1	248	.140

[a]Tests the null hypothesis that the error variance of the dependent variable is equal across groups (SPSS).
*Indicates results significant at or beyond the .05 level

The results of the test of between-subject effects for the principals' perceptions of the impact of selected reading strategies used by AR and non-AR schools are reported in Table 84. As stated above, the test of between-subject effects was used to compare the means of each selected reading improvement category for AR schools and non-AR schools to determine whether differences in these means were significant or if the results were obtained by chance. The null hypothesis was that there was no variance in the means of the AR and non-AR schools. Results were significant for a p value less than or equal to .05. Results were significant for reading textbooks, p = .027, literature circles, p = .000, classroom libraries, p = .002, Reading Counts, p = .000, and AR, p = .000.

TABLE 84. Tests of Between-Subject Effects for the Principals' Perceptions of the Impact of Selected Reading Strategies Used by AR and Non-AR Schools

Selected Reading Strategy Used	df	Mean Square	F	Sig.
Reading Textbooks	1	3.473	4.967	.027
Literature Circles	1	17.827	13.361	*.000
Classroom Libraries	1	4.475	10.268	*.002
Parent Participation	1	1.426	1.839	.176
Professional Development	1	.009	.003	.959
IREAP	1	.000	.000	.991
Reading Counts	1	11.120	20.676	*.000
AR	1	216.269	416.759	*.000
Other Computer Programs	1	4.318	2.989	.086

*Indicates results significant at or beyond the .05 level

Analysis of Data for Research Question Four

Question Four compares the levels of implementation and impact for the selected reading strategies ranked in Part I of the Principal Questionnaire between schools using the AR program and schools that do not use the AR program. There were no differences found for the levels of implementation and impact for the following reading strategies: professional development for teachers, parent participation, and IREAP. These findings indicate that the reported levels of implementation and impact of these strategies were at similar levels for schools that use the AR program and for schools that do not use the AR program. Professional development, in reading strategies other than AR professional development, for teachers received the highest level of implementation and impact from principals of all schools in this study and was also found to have a mean of 3.71 and 3.81 reported by principals of AR and non-AR schools, respectively. Principals in this study consistently responded that the use of professional development for teachers in reading had significant impact toward the improvement of student success in reading.

The levels of implementation and impact of literature circles, classroom libraries, and Reading Counts, however, were found to vary significantly at or beyond the.05 level. The use of other computer reading programs was found to be significant at the .05 level for level of implementation, but was not found to be significant for level of impact. The analysis of data gathered from the principals' perceptions indicates that principals of schools that do not use the AR program implemented literature circles, classroom libraries, and Reading Counts at significantly higher levels than schools that use the AR program. It appears that principals of schools that do not use the AR

program implement reading strategies that involve their students with literature in various ways.

Principals of schools that use AR implemented other computer reading programs at significantly higher levels than principals of non-AR schools. The results of Between-Subject Effects indicate the use of reading textbooks as a reading strategy was found to be significant at p =.05. More principals of AR schools use reading textbooks as a strategy than principals of non-AR schools. This finding is consistent with the findings discussed above because it was expected that the schools using literary circles and classroom libraries might not use reading textbooks in their reading programs.

Research Question Five

Review of Data for Research Question Five

Research Question Five was designed to answer the following question, "Are there significant differences between the principal's perceptions of the level of implementation and level of impact of AR recommended strategies used in selected AR elementary schools and AR-like reading strategies used in selected non-AR schools in Texas? "

Purpose 2 of the research to determine the principal's perception of the extent selected elementary schools in Texas follow AR and AR-like recommended practices was addressed by answering Research Question Five. Principals' responses to Part II, Section B, Questions 1 through 10 and Part III, Questions 1 through 10 of the Principal Questionnaire were used to answer Research Question Five. Questions 1

through 10 of Part II were replicated in Part III of the Principal Questionnaire because the strategies these questions represented could be implemented in schools not using the AR program. The question stems in each part of the questionnaire were designed to compare the implementation procedures and impact of the reading strategies that were recommended for use by the publishers of the AR program to similar reading strategies used in schools that did not use AR.

Table 85 contains the lists the questions stems used to answer Research Question Five. The responses from Questions 1 through 10 of Part II, Section B and Part III of the Principal Questionnaire were totaled to respond to Research Question Five. The null-hypothesis was that there would be no difference found in the implementation and impact of AR and AR-like reading strategies between the selected group of schools using AR and the selected group of schools not using AR. The dependent variables represented by Questions 1 through 10 for AR and non-AR schools were totaled to calculate this parameter. A univariate analysis of variance comparing the implementation of AR and AR-like reading strategies indicates an equal variance assumed using the Levene's Test for Equality of Variances with $F = 6.022$ and significant at .015. Results were significant for a p value less than .05. These results indicate that there were significant differences found between AR and non-AR schools implementation of the selected reading strategies. Because responses for level of implementation and level of impact were similar for Questions 1 through 10 for Part II, Section B and Part III, similar results were obtained for level of impact.

TABLE 85. Question Stems and Percentage of Principal's Perceptions of the Levels of Implementation Used to Compare AR and AR-Like Reading Strategies

AR Reading Strategies	Moderate/ Significant Implementation	AR-like Reading Strategies	Moderate/ Significant Implementation
Students select their own AR books.	94.0%*	Students select their own books for independent reading.	88.4%
Student's AR reading levels are determined by using Star Reading Program.	74.5%	Students read books on their independent reading level.	96.2%*
Students take AR Reading Practice Quizzes.	77.0%*	Students take tests on the books they read.	42.3%
Students and teachers use AR reports in conferences to direct reading practice.	66.5%	Students and teachers conference to direct reading practice.	90.4%*
Students have set reading goals in the AR program.	78.5%*	Students have set reading goals.	65.4%
Students keep track of their own AR points.	73.0%*	Students keep track of their progress toward their reading goals.	59.6%
Students' achievement of reading goals are posted in classrooms, hallways, and/or the library.	69.0%*	Students' achievement of reading goals are posted in classrooms, hallways, and/or the library.	34.6%
Students are given more than 30 minutes a day during school for AR sustained silent reading.	60.0%*	Students are given more than 30 minutes a day during school for sustained silent reading.	44.2%
Students receive certificates for earning AR points.	60.0%*	Students receive certificates for reading books.	44.3%
Students earn rewards other than certificates for AR points.	85.0%*	Students earn rewards other than certificates for reading books.	46.2%

*Indicates the highest percentage level of implementation between AR and AR-like recommended strategies

Summary of Data for Research Question Five

The results of Levene's Test for Equality of Variances indicated that there were significant variances between the principals reported levels of implementation and impact of AR and AR-like reading strategies. Levels of implementation and impact were totaled to discover if significant variances existed. For clarity of reviewing the data, percentages of levels of implementation were used to analyze the differences between levels of implementation of similar reading strategies selected for implementation by principals in AR and non-AR schools. Table 85 contains the list of the question stems with the percentage levels of moderate to significant implementation used to answer Research Question Five.

In a one-to-one comparison of the similar AR recommended reading strategies and AR-like recommended reading strategies, more principals of AR schools indicated they use levels of moderate to significant implementation than principals of non-AR schools. This result was expected because principals of schools using the AR program were expected to use AR recommended strategies to a higher degree than principals of schools that do not use the AR program.

For the reading strategies, students read books on their independent reading level and students and teachers conference to direct reading practice were ranked by principals of non-AR schools for moderate to significant levels of implementation at 96.2% and 90.4% and 74.5% and 66.5% reported by AR schools. This result indicates that students participating in the AR program may read books to gain points rather than read books on their independent reading level. The higher percentage of student/teacher conferences in schools that do not use AR may also be a factor

influencing more students reading books on their independent reading level in non-AR schools.

The greater involvement of teachers to direct reading activities would seem to have a greater positive impact on student success in reading. The greater teacher involvement in non-AR was indicated by the difference between the principals responses for the questions on student/teacher conferences and the differences to the responses for students taking tests on the books they read. From AR principals, the response was 77% moderate/significant implementation and from non-AR principals, 42.3%. This difference seems to indicate that instead of taking tests, students respond to their teachers about the books they read. This student/teacher involvement should result in students being rewarded in a more intrinsic way rather than receiving the more extrinsic rewards of certificates, tracking points, and posting their achievements in classrooms and hallways. The use of these extrinsic methods of reinforcing independent reading was reported by principals of AR schools at almost twice the rate of principals from non-AR schools. These differences center on a student's motivation to read and the involvement of the teacher in the process. It should also be noted that AR does recommend that teachers conference with students to set reading goals. In response to Research Question Five, there were significant differences between the recommended AR and AR-like strategies that principals of AR and non-AR schools selected to implement.

Research Question Six

Review of Data for Research Question Six

Research Question Six was constructed to determine:, "What selected reading strategies have the highest reported level of implementation and level of impact by principals in selected elementary schools in Texas?"

Results from Research Question One were used to answer Research Question Six. This research question addresses Purpose 1 of this study. Table 86 lists the highest and next highest percentages for level of implementation and impact for the selected reading strategies used in Part 1, Questions 1 through 9 of the Principal Questionnaire.

TABLE 86. Percentage Levels of Implementation and Impact for Selected Reading Strategies Used in Part 1, Questions 1 through 9 of Principal Questionnaire Sorted by Highest Percentage Implemented

Reading Strategy	Highest Percentage/ Level of Implementation	Next Highest Percentage/Level of Implementation	Highest Percentage/ Level of Impact	Next Highest Percentage/Level of Impact
Professional Development	75.8/Significant	22.2/Moderate	71.8/Significant	24.2/Moderate
AR	59.1/Significant	17.9/Not Impl	48.8/Significant	20.6/Moderate
Classroom Libraries	49.6/Significant	41.3/Moderate	50.4/Significant	40.1/Moderate
Parental Involvement	42.9/Moderate	27.8/Significant	36.5/Moderate	32.1/Significant
Reading Textbooks	37.3/Significant	34.9/Moderate	41.4/Moderate	30.2/Significant
Literature Circles	32.1/Moderate	26.2/Not Impl	32.1/Significant	27.4/Moderate
Other Computer Programs	56.3/Not Impl	19.4/Significant	56.0 No Impact	17.9/Significant
IREAP	66.7/Not Impl	17.5/Moderate	66.7/No Impact	17.5/Moderate
Reading Counts	85.3/Not Impl	7.9/Moderate	84.5/No Impact	7.5/Moderate

The use of professional development for teachers in reading was the most implemented reading strategy. Professional development in reading for teachers was reported at the significant level of implementation by 75.8% of the principals and 71.8% related that use of this strategy had significant impact. This strategy was reported most frequently at the highest levels of implementation and impact. With this reported percentage of implementation and impact, professional development for teachers appears to be essential to developing a quality reading program.

The second most implemented strategy was the use of the AR program with 59.1% implementation at the significant level and 48.8% impact at the significant level. There was a 10.3% percentage point difference in the principals' perceptions between the level of implementation and the level of impact for AR as a reading strategy. Generally, the principal's perceptions of level of implementation and level of impact in this study were similar. This difference in the reported level of implementation and level of impact of the use of AR may be a result of the lack of AR professional development for teachers in schools using AR.

The use of classroom libraries was ranked third in level of implementation, 49.6% and second in level of impact, 50.4%. When the data from Table 86 for the significant and moderate levels of implementation and impact were collapsed, the percentage of implementation of classroom libraries was 92.9% and percentage of impact was 90.5%. Table 86 is sorted by the percentage level of implementation.

Summary of Data for Research Question Six

The reading strategies with the highest level of implementation in rank order were: Professional development in reading instruction for teachers, the use of the AR

program, the use of classroom libraries, parental involvement with the school's reading program, use of a textbook reading program, and the use of literature circles. Reading Counts, IREAP, and other computer reading programs were not implemented at any level by over 56% of schools returning questionnaires. Levels of impact for reading strategies were generally the same except that classroom libraries were ranked above the AR program in level of impact.

A review of Figure 7 reveals the relationships between the levels of implementation and levels of impact for selected reading strategies and reveals trends in the data gathered from the principals' responses. The similarity of the levels of implementation and levels of impact become obvious as do the reading strategies with the highest levels of implementation and impact. The bars in the figure represent the levels of implementation of the selected reading strategies. The lines in the figure represent the levels of impact. By following the bars for significant implementation and the line for significant impact, the relationship between the two are established.

In answer to Research Question Six, the top three reading strategies were the implementation of professional development for teachers, the use of the AR program and the use of classroom libraries. The order of the strategies, however, changes when level of impact is considered. The order of level of impact for the highest ranked reading strategies by principals of successful schools in Texas were professional development for teachers, the use of classroom libraries, and the AR program.

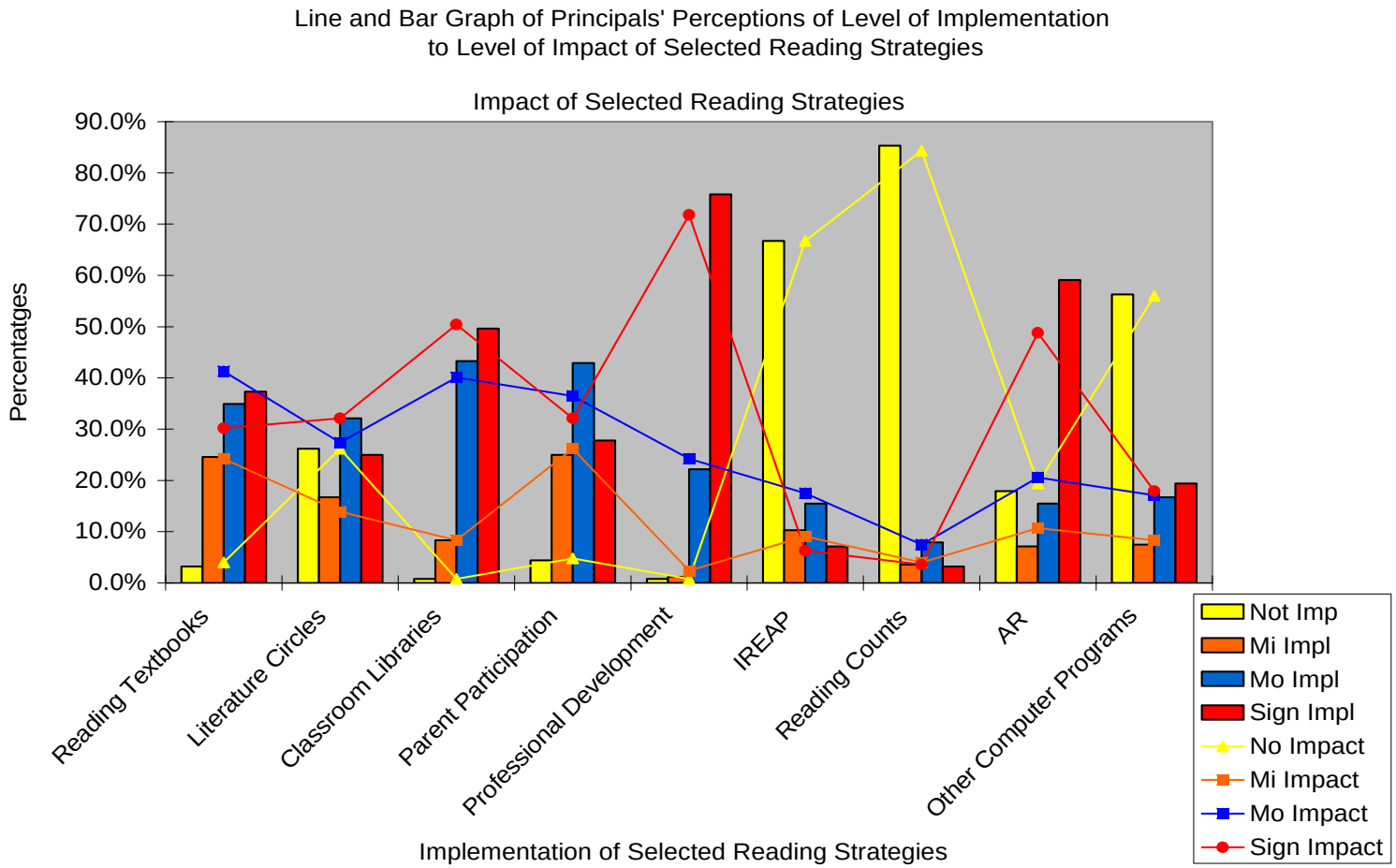

FIGURE 7. Line and Bar Graph of Principals' Perceptions of Level of Implementation and Level of Impact of Selected Reading Strategies

The charts and figures used in Chapter IV summarize and clarify the data collected from the Principal Questionnaires. Analysis of the data provided some statistically significant findings and revealed trends that should be helpful for principals seeking to evaluate their schools' reading programs. Following in Chapter V is a summary of findings, conclusions, and recommendations.

CHAPTER V

SUMMARY OF FINDINGS, CONCLUSION, AND RECOMMENDATIONS

Summary of Findings

For many years in Texas, student success in reading has been measured by test results. First, as measured by the Texas Assessment of Basic Skills (TABS), then by the Texas Assessment of Academic Skills (TAAS) and currently as measured by the Texas Assessment of Knowledge and Skills (TAKS), educators in Texas are held accountable by their school boards and the public that the results of these tests show improving student success in reading as well as other subject areas. With the passage of the *No Child Left Behind Act*, this accountability is now occurring on the national level. School districts are evaluated for student achievement at the building level. School principals are held accountable and hold great responsibility for educational decision making (Chernow & Chernow, 1992). How principals use funds to purchase programs, implement curriculum, and employ learning strategies is critical to the level of accomplishment of each student (McEwan, 1997). Research to help principals determine which programs and strategies promote student success in reading is important for informed decision making when setting budget priorities.

For the purposes of this research, a review of literature was conducted to determine strategies that were currently being used to promote student success in reading. A questionnaire was developed to gather the perceptions of principals regarding the level of implementation and the level of impact of each of the reading

strategies. From the review of literature, the Accelerated Reader program (AR) was determined to be a program about which researchers and educators maintained varied points of view (Campbell, 2001; Chenoweth, 2001; International Reading Association, Inc., 1999b; McEwan, 2002; Persinger, 2001; Vollands, Topping, & Evans, 1999). The discussion centered on whether the AR program increased student success in reading.

Principals of schools with grades three through five whose schools earned the Gold Performance Acknowledgement (GPA) for Continuous Improvement in Reading (CIR) were considered to be principals of schools with successful reading programs. These schools are not always high performing campuses; however, all schools earning this acknowledgement have shown improvement in reading scores using matched test takers over a two-year period. Of the more than 4,000 elementary schools in Texas, 721 schools earned the GPA for CIR. The entire population of 721 school principals was mailed the questionnaire. Two hundred fifty-two principals contributed to the research by returning the questionnaire. The responses of the principals of these selected elementary schools who have documented success in their reading programs provided concrete data for analysis. This chapter includes a summary of the results, implications of the findings, discussion of the limitations of the study, and suggestions for further study.

This study had two purposes: (1) to identify the principal's perception of the levels of implementation and impact of selected reading strategies used by selected elementary schools in Texas to improve student success in reading and (2) to determine the principal's perception of the extent selected elementary schools in

Texas follow AR and AR-like recommended practices. The reading strategies were selected for this study because they frequently occurred in the review of literature to improve student success in reading. The use of reading textbooks, literature circles, classroom libraries, parent participation, professional development for teachers, and computer software were all strategies that the literature suggested were being used to increase student achievement in reading. A further search of the literature was made to determine the types of computer software being used in elementary schools. From this review of literature, the use of the AR program was found to be a topic of controversy among educators. A section on reading strategies specific to AR was therefore included in this study. Reading Counts, IREAP, and other computer reading programs were included to discover their level of implementation and impact in elementary school reading programs. The following is a summary of findings for each of the six research questions:

Research Question One

Research Question One, "What are the principal's perceptions of the level of implementation and the level of impact of selected reading strategies implemented by selected elementary schools in Texas?"

This research question addresses the level of implementation and level of impact of the selected reading strategies. The principals' responses to Part 1, Questions 1 through 9 were used to answer this question. The Percentages of Principals' Perceptions of Levels of Implementation and Impact of Selected Reading Strategies on Part I for the Principal Questionnaire are shown in Table 87. An overview of this

data revealed that principals' responses for level of implementation are similar to their responses for level of impact. This suggests that there will not be significant differences between levels of implementation and levels of impact. It also seems that the responding principals perceive that the amount of success gained from using a particular reading strategy is related to the amount of effort put into execution of the strategy.

TABLE 87. Percentages of Principals' Perceptions of Levels of Implementation and Impact of Selected Reading Strategies on Part I for the Principal Questionnaire

Reading Strategies	Not Impl.	No Impact	Min. Impl.	Min. Impact	Mod. Impl.	Mod. Impact	Sign. Impl.	Sign Impact
Reading Textbooks	3.2%	4.0%	24.6%	24.2%	34.9%	41.3%	37.3%	30.2%
Literature Circles	26.2%	26.2%	16.7%	13.9%	32.1%	27.4%	25.0%	32.1%
Classroom Libraries	0.8%	0.8%	8.3%	8.3%	43.3%	40.1%	49.6%	50.4%
Parent Participation	4.4%	4.8%	25.0%	26.2%	42.9%	36.5%	27.8%	32.1%
Professional Development	0.8%	0.8%	1.2%	2.4%	22.2%	24.2%	75.8%	71.8%
IREAP	66.7%	66.7%	9.1%	9.1%	17.5%	17.5%	6.3%	6.3%
Reading Counts	85.3%	84.3%	3.6%	4.0%	7.9%	7.5%	3.2%	3.6%
AR	17.9%	19.4%	7.1%	10.7%	15.5%	20.6%	59.1%	48.8%
Other Computer Programs	56.3%	56.0%	7.5%	8.3%	16.7%	17.1%	19.4%	17.9%

Of the nine reading strategies included on the Principal Questionnaire, professional development for teachers in reading had the highest levels of implementation and impact. Of the 252 principals of schools earning the Gold Performance Achievement (GPA) for Continuous Improvement in Reading (CIR) who participated

in the study, 75.8% implement professional development for teachers as a strategy to improve instruction in reading. The principals reported that professional development was implemented at a significant level in their schools. Over 71% of the principals indicated that professional development for teachers in reading had significant impact on student success in reading. This finding is consistent with the statements of Albert Lee Snow (2003) in *Practical Advice for Principals*, that providing quality staff development is an important strategy to improve students' academic performance (p. 37). With this high level of implementation and impact, focused, quality, professional development in reading appears to be a necessary expense to improve instruction and student achievement in reading.

The second most implemented selected reading strategy is Accelerated Reader (AR). Fifty-nine percent of principals indicated that AR is implemented at a significant level in their schools with 48.8% reporting significant impact from the program. Only 17.9% of selected elementary school principals indicated that they do not implement AR at any level in their schools. The fact that principals reported a smaller percentage of impact than the reported level of implementation of AR is a reason to look closely at the implementation of AR recommended reading strategies. This finding is supported by critics of the AR program. An article on the Website of the International Reading Association states that funding and time often keep schools from sufficient staff development for teachers using the AR program to properly implement AR (International Reading Association, Inc., 1999b). Determining which AR strategies were implemented and evaluating the level of impact for each of these

strategies should help to discover why principals perceived that the implementation level of AR did not have a corresponding level of impact.

The use of classroom libraries, parental involvement, reading textbooks, and literature circles were ranked as listed in Table 87. Over one-third of principals implement these strategies in their schools and reported moderate to significant levels of impact in their reading programs. Twenty-five percent of principals participating in the survey reported the significant implementation of literature circles; however, 32.1% of principals reported the impact of literature circles as a reading strategy had significant impact. The higher reported level of the principals perceived impact of literature circles is consistent with the beliefs of Duffy (2003), Gambrell (2001), and Calkins (2001). It is the consciences of these educators that literature circles motivate students to read and share information learned from the materials they read. This higher level of reported impact of the implementation of literature circles along with the supporting literature is worthy of note. Since the cost of implementing literature circles into classroom instruction would be negligible it is recommended that principles investigate the use of this reading strategy to improve student success in reading.

Reading Counts and other computer reading programs were not implemented by a large number of respondents. Internet, Reading, Encoding, Annotating, and Pondering (IREAP), was not implemented by 66.7% of the selected schools reporting. The lack of implementation of these reading strategies does not necessarily mean they would not be effective if implemented at higher levels. The lack of implementation

of the IREAP program could be because of the lack of familiarity of principals with this strategy.

Because the levels of implementation and impact of use of professional development, AR, and classroom libraries were reported at high percentage levels, these strategies should be reviewed by principals to determine if the uses of these strategies are beneficial. The first purpose of this study which was to determine the principal's perception of the levels of implementation and impact of selected reading strategies was addressed by the findings in Question One.

Research Question Two

Research Question Two asked, "What are the principal's perceptions of the level of implementation and the level of impact of AR recommended reading strategies in selected elementary schools in Texas?" Research Question Two addressed the first part of Purpose 2, which was to determine the principal's perception of the extent to which AR recommended practices were used in selected elementary schools in Texas. Of the 16 AR recommended reading strategies, four of the strategies were reported to be implemented at the significant level by more than 50% of responding principals. The strategies were: self-selection of books by students by 73.0%, the use of rewards for AR points earned by 68%, students take AR Practices Quizzes on computers by 62.5, and the use of the STAR Program to measure the student's appropriate reading level by 52.5%. These strategies are frequently promoted by AR in their publications and considered to be critical elements of the AR program. Because principals of schools with successful reading programs implement these AR recommended

strategies, principals of schools where the AR program is used should review their programs to determine if these strategies would improve their reading programs.

The use of AR correlated textbooks, students receiving grades on their report cards for AR points, and the use of AR correlated magazines were not implemented by over 50% of the principals reporting. Giving grades for AR points is not recommended by AR. With only 20.5% of reporting principals indicated that grades were given for AR points on student report cards in their schools, use of this strategy should not be implemented by principals considering the AR program. Both the use of AR correlated textbooks and magazines are relatively new to the AR program and have costs associated with their implementation which may contribute to the low level of implementation of these strategies. Use of these strategies is not recommended. It seems that there should be less costly activities for students to engage in rather than using textbooks and magazines that were designed to correlate with the AR program.

The use of AR school stores, AR Literacy Skills Tests, and AR professional development for teachers were reported at significant levels of implementation by 30.0%, 25.0%, and 22.0 %, respectively. All three of these strategies add additional costs to school budgets. The AR Literacy Skills Tests evaluate and promote students' ability to think critically about the books they read. These tests were created by AR in response to criticism of the AR Practice Tests evaluating students at low levels of Bloom's Taxonomy. The low level of implementation of this strategy that focuses on critical thinking is disappointing.

The use of AR professional development for teachers was significantly or moderately implemented by only 50% of AR schools. The use of professional development as an overall strategy to improve instruction in reading, however, was reported by principals 75.8% at the significant level and 22.2% at the moderate level of implementation. With the two levels combined, 98% report using professional development for teachers to improve instruction in reading. While principals appear to see the importance of professional development in reading for teachers, half of the principals using AR provide no or minimal professional development for their teachers using AR. Appropriate training for teachers using AR seems necessary. AR recommends professional development opportunities in its promotional materials, *Maximize the Success of Your Accelerated Reader Program with Resources and Training for Teachers Using Accelerated Reader* (2001-2002). The implications of these findings are that the AR program would be more effective if teachers received training to implement the AR program.

Another question concerning the implementation and impact of the AR program is the use of rewards to motivate students to read. Certificates were used at the significant to moderate level by 60% of schools. AR rewards other than certificates were used at the significant level by 68% and at the moderate level by 17% of schools. Extrinsic rewards were used in the majority of schools using the AR program. The levels of impact of using rewards other than certificates were 61% at the significant level and 22% at the moderate level. These data represent a 7% difference in the significant level of implementation. This difference is cause for concern considering the controversy over the use of external rewards as motivators

(Cameron & Pierce, 1994; Gambrell, et al., 1996; Kohn, 1993, 1996; Lepper et al., 1996; Ryan & Deci, 1996; Sutherland, 1993).

The principals' responses to implementation and impact of AR reading strategies are summarized in Figures 8 and 9. The most obvious observation when reviewing these figures is the principals' perception of the benefits of student/teacher conferences to direct independent reading and the impact of sustained silent reading.

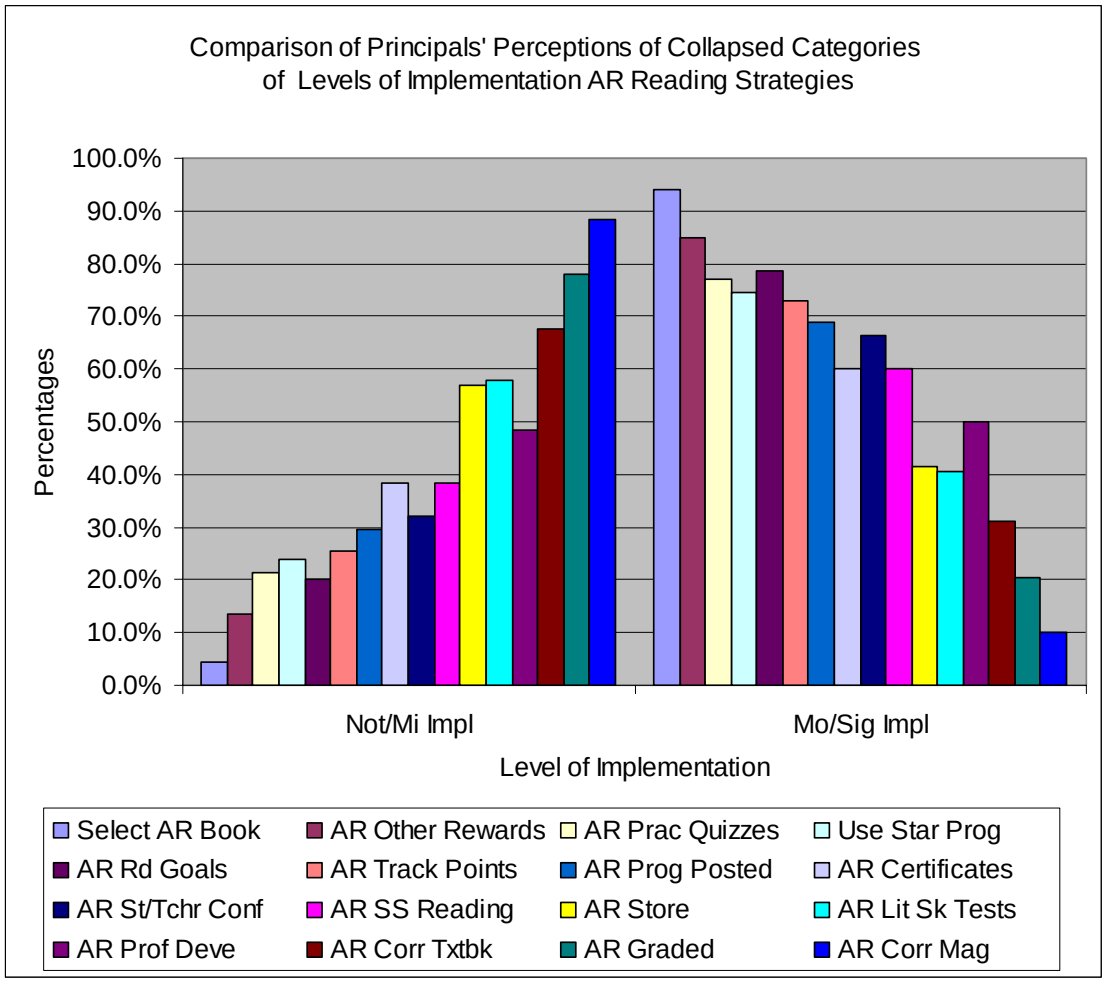

FIGURE 8. Comparison of Principals' Perceptions of Collapsed Categories of Levels of Implementation of AR Reading Strategies

The use of student/teacher conferences requires planning on the part of the teacher to create time for conferences; however, this is a low-cost strategy to implement. According to Pam Chomsky-Higgins (1998) in *Practice What We Know*, the student/teacher conference allows valuable one-on-one interaction and discussion between student and teacher.

Additionally, the data indicate that more principals reported a significant level of impact of over 30 minutes a day of sustained silent reading than reported a significant level of implementation. This perception of reporting principals that sustained silent reading impacts student success in reading is consistent with the findings in the review of literature that sustained silent reading has a positive impact. Principals should review the literature on sustained silent reading carefully because the research indicates that simply providing increased reading time does not always increase the effectiveness of sustained silent reading (Byrnes, 2000; Chomsky-Higgins, 1998; International Reading Association, Inc., 1999a).

On Part II of the questionnaire, the percentages of principals reporting significant levels of implementation corresponded with their reported levels for impact. In general, the levels of implementation were only slightly greater than the percentages for levels of impact reported. The exceptions with higher percentages for significant impact than significant implementation illustrated in Figure 9 were: AR student/teacher conferences to set reading goals and the use of sustain silent reading. Evaluation of these responses suggests that increased implementation of these strategies would be beneficial. In schools where the AR program is used, these

findings suggest that principals should work with teachers to identify time in the school day for implementation of AR student/teacher conferences and sustained silent reading to increase the impact of the AR program.

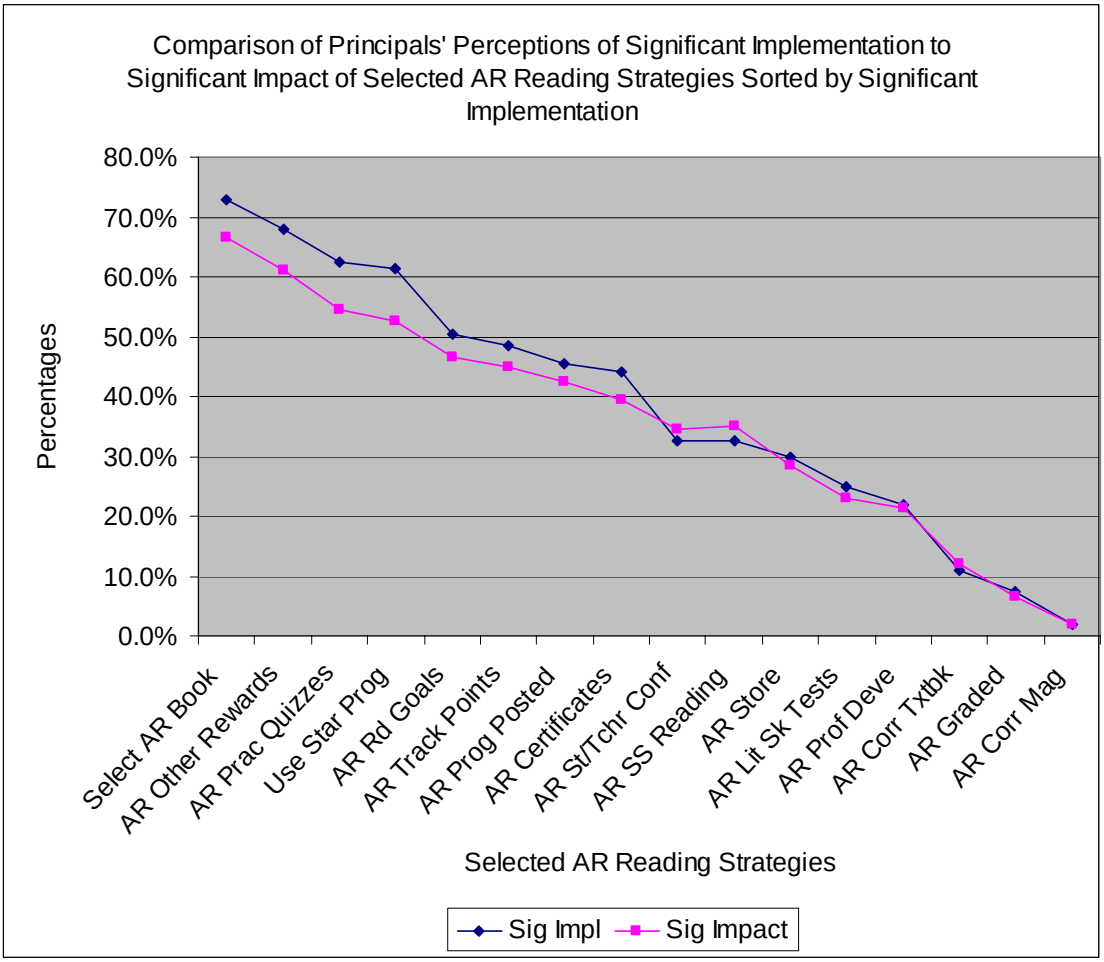

FIGURE 9. Comparisons of Principals' Perceptions of Significant Implementation to Significant of Selected AR Reading Strategies Sorted by Significant Implementation

The AR strategies with the highest percentage levels of implementation and impact were students self-select the AR books they read, the use of rewards for AR points earned, students take AR practice quizzes on computers, and the use of the STAR program to measure the student's appropriate reading level. As illustrated in Figure 9, however, principals using the AR program reported their perceptions that the levels of impact of these AR recommended strategies falls below the levels of impact of these strategies. Because of these findings and because of the controversy over the effectiveness of the AR program in educational literature, implementation of AR strategies should be carefully considered by principals using the AR program or principals considering implementation of the AR program (International Reading Association, Inc., 1999b; McEwan, 2002; Persinger, 2001; Vollands et al., 1999).

Research Question Three

Research Question Three asked, "What are the principal's perceptions of the level of implementation and the level of impact of AR-like recommended reading strategies in selected non-AR schools?"

Part III of the Principal Questionnaire was used to answer Research Question Three. The schools of the 52 principals, who indicated on Part I of the Principal Questionnaire that they did not use AR in their reading programs, were considered to be non-AR schools. These schools made up 20.63% or about one-fifth of schools in the study. Purpose 2, to determine the principal's perception of the extent to which AR and AR-like recommended practices were used in selected elementary schools in Texas was addressed by this research question.

The AR-like reading strategies used on the questionnaire were determined by replication of AR reading strategies without using the AR program. The data representing the levels of implementation and impact of AR-like reading strategies are summarized in Table 88. In general, the levels of reported implementation and impact of AR-like reading strategies were similar. Strategies with a lower reported level of implementation than impact included: student/teacher conference, posting of student reading goals, and sustained silent reading. The use of student/teacher conferences to direct the student's independent reading practice should be considered by principals because of its high percentage of implementation and even higher level of impact. This ranking of the implementation and impact of the student/teacher conference was similar to the ranking of this reading strategy by principals who used the AR program.

TABLE 88. Percentages of Principals' Perceptions of Levels of Implementation and Impact of Selected AR-like Reading Strategies on Part III of the Principal Questionnaire Sorted by Level of Implementation

AR-Like Strategies	Not Impl	Min. Impl	Mod. Impl	Sig. Impl	No Impact	Min. Impact	Mod. Impact	Sig. Impact
Books on Ind. Reading Level	0.0	0.0	21.2	75.0	0.0	1.9	17.3	76.9
Select own books	5.8	1.9	28.8	59.6	3.8	1.9	40.4	50.0
Student/ Teachers Conference	0.0	5.8	38.5	51.9	0.0	5.8	30.8	59.6
SS Reading	32.7	17.3	17.3	26.9	30.8	13.5	19.2	32.7
Other Rewards	26.9	23.1	21.2	25.0	30.8	17.3	25.0	23.1

TABLE 88. Continued

AR-Like Strategies	Not Impl	Min. Impl	Mod. Impl	Sig. Impl	No Impact	Min. Impact	Mod. Impact	Sig. Impact
Student Set Reading Goals	5.8	25.0	42.3	23.1	7.7	21.2	48.1	19.2
Certificates	36.5	15.4	21.2	23.1	36.5	17.3	19.2	23.1
Students Track Progress	13.5	23.1	40.4	19.2	15.4	21.1	44.2	15.4
Take Test on Books	19.2	34.6	25.0	17.3	19.2	34.6	25.0	27.3
Student Progress Posted	48.1	13.5	23.1	11.5	46.2	13.5	21.2	15.4

Posting student reading scores was reported at a higher level of impact, but it was reported at the lowest percentage of implementation reported. Posting students reading scores in classroom and hallways is a form of publicly ranking students and should not be considered. This recommendation is supported by Jay R. Campbell (2001) and Edwards Deming (1992) in his speech at the conference for Shaping America's Future III: Proceeding of the National Forum on Transforming Our System of Education Youth. Additionally, posting students goals does not allow for students' privacy nor does use of the strategy encourage students who are less capable readers. The use of student/teacher conferences which focuses on helping the students to set and track their goals and methods to achieve the goals is preferable.

Seventy-five percent of the principals reported a significant level of implementation for students reading books on their independent reading level. Almost 60% implemented student selection of books at the significant level. These strategies rank

one and two in significant level of implementation. The top two strategies for significant level of impact, however, were students reading books on their independent reading level at 76.9% and student/teacher conferences at 59.6%. When students are allowed to read books on their independent reading level they experience the intrinsic reward of success (Ryan & Deci, 1996). Researchers also support the idea of a "strong link to motivation to read' with students being allowed to self-select the materials they read" (Gambrell, 2001, p. 137) and support student/teacher conferences (Chomsky-Higgins, 1998). Considering the large percentage of principals reporting the significant level of implementation and impact of these three strategies and the supporting literature, these strategies should be considered by principals for implementation in their school's reading programs.

The data in Figure 10 illustrates the relationships between the levels of implementation and impact of AR-like reading strategies. Similar to the reported perceptions of AR schools principals, the principals of non-AR schools report the use of student/teacher conferences and sustained silent reading at higher levels of impact than the levels of implementation. Following in response to Question Four, additional similarities and differences between selected AR and AR-like reading strategies are discussed.

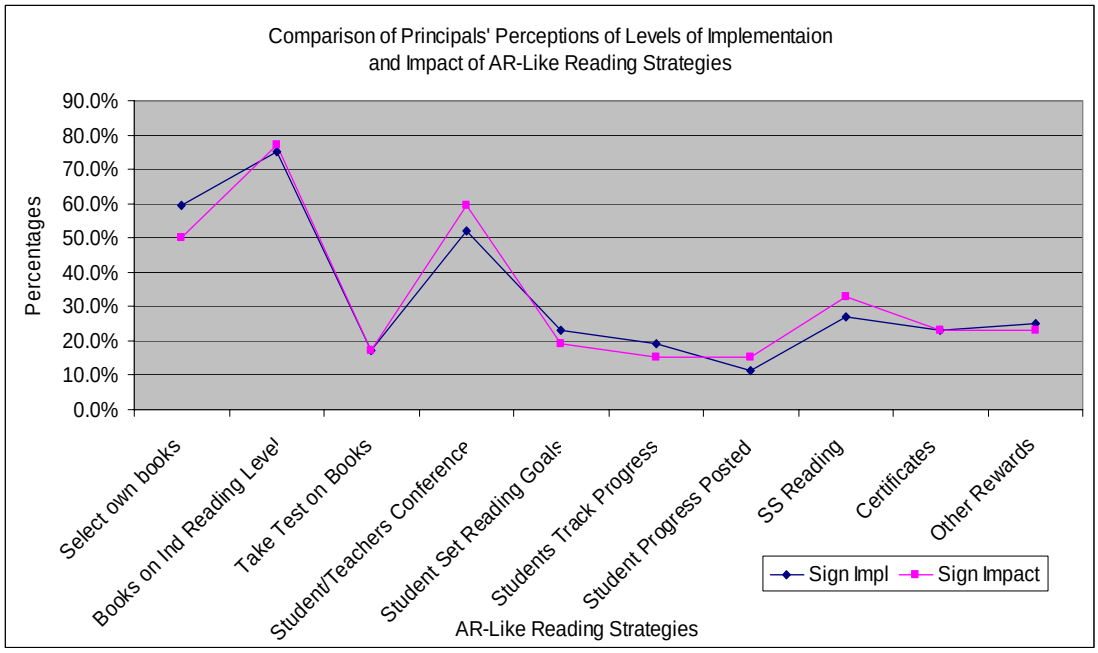

Figure 10. Comparison of Principals' Perceptions of Levels of Implementation and Impact of AR-Like Reading Strategies

Research Question Four

Research Question Four asked, "Are there significant differences between selected AR and non-AR schools in the principal's perceptions of the level of implementation and level of impact of selected reading strategies?"

Levene's Test of Equality of Error Variances was one of the methods used to analyze the data for this research question. Significant differences were found between the responses of principals of schools using the AR program and principals of schools that did not use the AR program. The null hypothesis was rejected at p = .05 for the use of professional development, p = .014. Results indicated significant differences beyond the p = .05 for the use of literature circles, p = .000; the use of classroom libraries, p = .004; and the use of Reading Counts, p = .000. The use of

other computer reading programs was found to be p = .050. Similar results were indicated for level of impact from Levene's Test of Equality of Variances. Significant differences were found beyond p = .05 for the use of literature circles, classroom libraries, AR, and Reading Counts. The use of reading textbooks was reported to be p = .012.

Analysis of data using the Between-Subject Factors of Means supported the above results. A review of Figure 11 Comparison of Principals' Perceptions of Between-Subject Factors of Means of Implementation of Selected Reading Strategies Used by AR and Non-AR Schools makes these results easier to interpret. The significant differences of implementation rankings by principals were reported as follows:

1. Principals of AR schools implemented the following reading strategies at higher levels: Reading textbooks, the AR program, and the use of other computer reading programs.
2. Principals of non-AR schools implemented the following reading strategies at higher levels: professional development, literature circles, classroom libraries, Reading Counts.

The differences discovered for the use of AR and Reading Counts were expected since the independent variable was the use of AR. Schools using AR would not be expected to use the similar program, Reading Counts. It is interesting that the use of reading textbooks was greater in schools that use AR. Literature circles and classroom libraries were implemented to a greater degree in non-AR schools. Literature circles give students the opportunity to interact with their teacher and fellow students to discuss the books they read while students using AR interact with the computer.

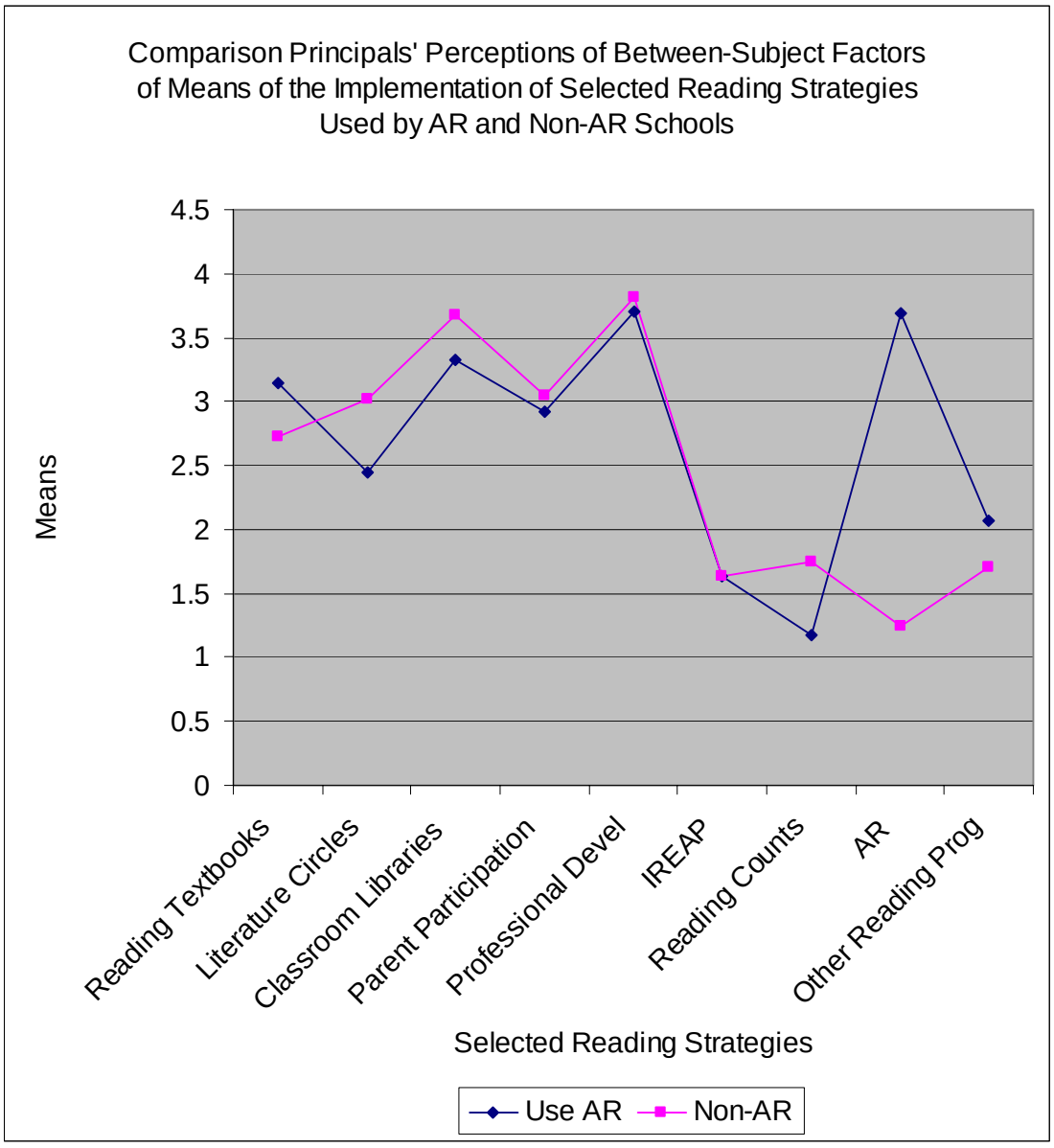

FIGURE 11. Comparison of Principals' Perceptions of Between-Subject Factors of Means of the Implementation of Selected Reading Strategies Used by AR and Non-AR Schools

This distinction is one that principals of AR schools should address. While AR has benefits, the interaction provided by the use of literature circles should not be neglected. The differences in the use of literature circles, classroom libraries, and reading textbooks in AR and non-AR schools are points for discussion and further study is necessary. The degree of implementation and impact of parent participation and professional development were similar between AR and non-AR schools.

The Internet, Reading, Encoding, Annotating, and Pondering (IREAP) program in which students use the Internet to share critical thinking experiences with teachers and other students were not implemented at significant levels by either AR or non-AR schools. Because schools that already have Internet connectivity the cost of implementing this strategy would be negligible and the level of discussion and thinking about literature would be increased, principals should investigate implementing this reading strategy. By using the Internet, the population of respondents increases for students using IREAP (Manzo et al., 2002). Additionally, the use of IREAP allows the student to interact with the computer and have personal contact with individuals over the Internet. Students should be informed, however, of Internet rules for personal safety before using IREAP.

The use of other computer reading programs was reported more frequently at AR schools. This result could be attributed to the fact that schools using the AR program would be more familiar with using computers as part of the educational process.

Research Question Five

Research Question Five asked, "Are there significant differences between the principal's perceptions of the level of implementation and level of impact of AR

recommended strategies used in selected AR elementary schools and AR-like reading strategies used in selected non-AR schools in Texas?"

Data from Research Questions Two and Three were used to address this question. The stems of the questions in Part III for non-AR schools were written to mirror recommended AR reading strategies and were labeled AR-like Reading Strategies. Levene's Test for Equality of Variance was used to discover variances between the level of implementation and level of impact of AR recommended strategies used in selected AR elementary schools and AR-like reading strategies used in selected non-AR schools in Texas. Results were considered to be significant at a p value of less or equal to .05. These results point to the differences in the reading strategies used in schools that use AR and schools that do not use the AR program.

The significant levels of implementation and impact were used to consider this question. A review of Figure 12 which compares the principals' perceptions reported at the significant levels of implementation and impact revealed the differences between reading strategies used in AR and non-AR schools. Generally, the levels of implementation and impact were strongly correlated within the categories of AR and non-AR schools. The differences, however, between the implementation and impact of AR and AR-like recommended strategies are clearly observed in Figure 12. A higher percentage of principals of non-AR schools reported implementing the following strategies: Students read books at their independent reading level and the use of student/teacher conferences to direct reading practice. These findings cause concern that students in AR schools are not having student/teacher conferences to direct their

independent reading and may select books to read that are below their independent reading level to gain more points and prizes.

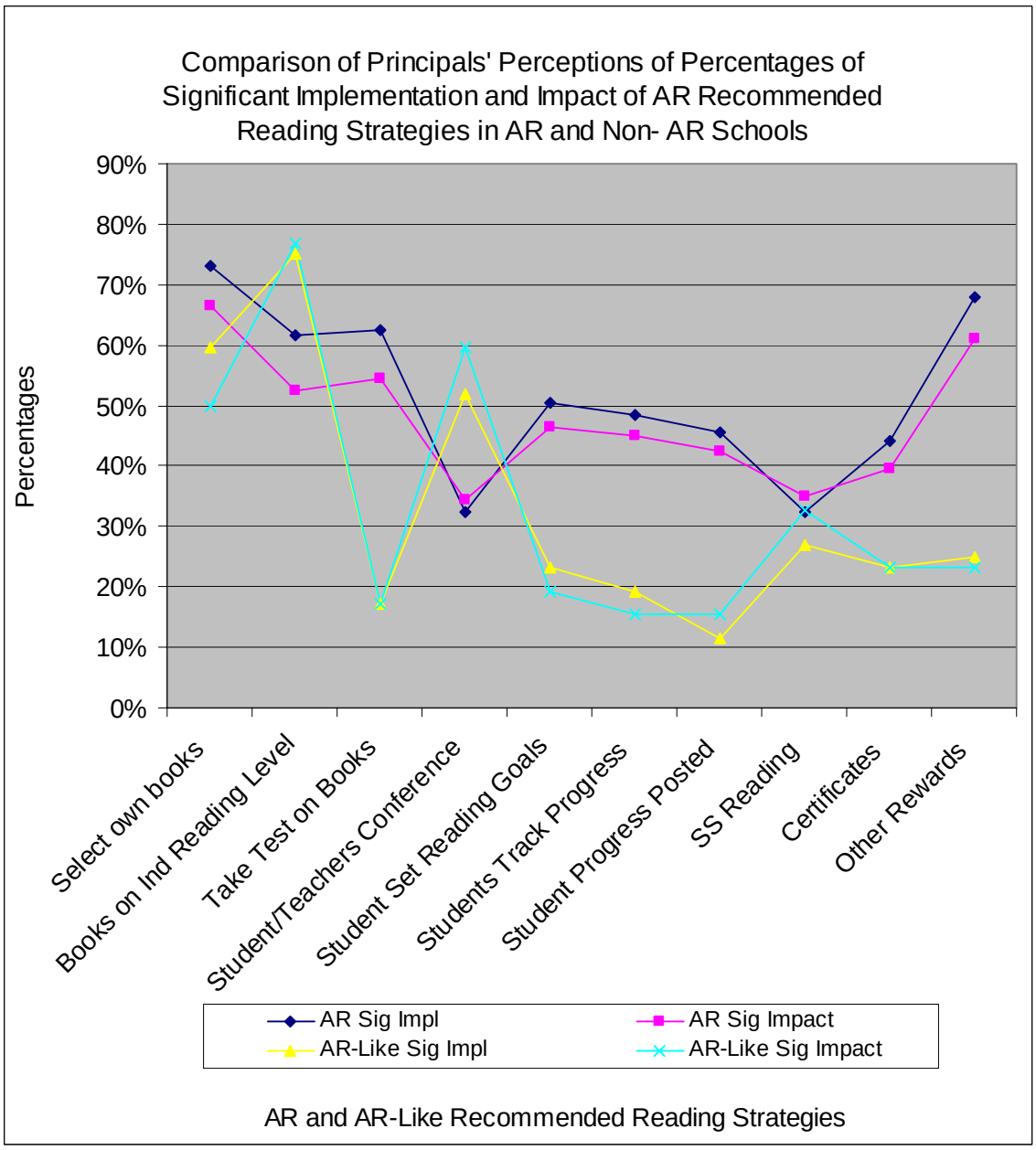

FIGURE 12. Comparison of Principals' Perceptions of Percentages of Significant Implementation and Impact of AR-Recommended Selected Reading Strategies in AR and Non-AR Schools

Interestingly, while the implementation of student/teacher conferences to direct reading is lower in AR schools, the reported impact of student/teacher conferences in AR schools was similar to the reported level implementation and impact in non-AR schools. In both AR and non-AR schools the principals' perceptions were that the level of impact of the student/teacher conference and sustained silent reading was greater than the level of implementation. This implies that greater use of student/teacher conferences to direct reading would be beneficial.

A higher percentage of principals of AR schools reported that they implemented the following strategies: students select own books, students take tests on the books they read, students set reading goals, students track progress, students' progress is posted in hallways, classrooms, and/or the library, students are given certificates for earning AR points, and students receive rewards other than certificates for reading. Analysis of Research Question 5 provides data supporting the controversy between educators surrounding AR which was discussed in the review of literature. The differences in the finding in this study between the implementation practices of AR and non-AR schools mirror the differences between the motivational theories supported by of Cameron and Pierce (1994) in their meta-analysis and the motivational theories supported by Kohn (1996), Lepper et al. (1996), Ryan and Deci (1996), and Deming's (1992) *Shaping America's Future III*.

Gambrell et al.'s (1996) research revealed access, choice, familiarity, and social interaction as key features of literacy learning. Their findings are similar to the reading strategies that were found in this study to be implemented at higher levels by non-AR schools. The differences discovered in this study between the reading

strategies that were implemented at higher levels at schools using AR and non-AR schools reveal critical issues that need to be addressed by educators. These differences center around the motivators used to encourage students to read. The discrepancies between the strategies that were more frequently implemented by principals of AR schools and those implemented by principals of non-AR schools focus students on dissimilar reasons to read.

Research Question Six

Research Question Six asked, "What selected reading strategies have the highest reported level of implementation and level of impact by principals in selected elementary schools in Texas?"

This question combined the responses of principals from AR and non-AR principals for the nine selected reading strategies in Part I of the questionnaire. Table 89 contains the rank order list of reading strategies used to answer Research Question Six. This table contains a listing of the principals' perceptions for the highest level of implementation and impact in rank order. These are important findings for principals to consider for their reading programs.

TABLE 89. Listings of Highest and Next Highest Percentage/Level of Implementation and Impact for Selected Reading Strategies Used in Part 1, Questions 1 through 9 of Principal Questionnaire Sorted by Highest Percentage Implemented

Reading Strategy	Highest Percentage/ Level of Implementation	Next Highest Percentage/ Level of Implementation	Highest Percentage/ Level of Impact	Next Highest Percentage/ Level of Impact
Professional Development	75.8/Significant	22.2/Moderate	71.8/Significant	24.2/Moderate
AR	59.1/Significant	17.9/Not Impl	48.8/Significant	20.6/Moderate
Classroom Libraries	49.6/Significant	43.3/Moderate	50.4/Significant	40.1/Moderate
Parental Involvement	42.9/Moderate	27.8/Significant	36.5/Moderate	32.1/Significant
Reading Textbooks	37.3/Significant	34.9/Moderate	41.4/Moderate	30.2/Significant
Literature Circles	32.1/Moderate	26.2/Not Impl	32.1/Significant	27.4/Moderate
Other Computer Programs	56.3/Not Impl	19.4/Significant	56.0 No Impact	17.9/Significant
IREAP	66.7/Not Impl	17.5/Moderate	66.7/No Impact	17.5/Moderate
Reading Counts	85.3/Not Impl	7.9/Moderate	84.5/No Impact	7.5/Moderate

The three reading strategies that were most frequently implemented at the significant level were professional development, the AR program and classroom libraries. The order of the reading strategies for highest percentages of significant impact were professional development, classroom libraries, and the AR program. Principals wanting to improve their schools' reading programs should consider that providing professional development for their teachers could improve student success in reading. Over 70% of principals reported their perception that implementing professional development for teachers has a significant level of impact toward

improving student success in reading. This finding is supported in the literature by Albert Snow, a principal with 24 years of experience. In his book, *Practical Advice for Principals*, Snow (2003) relates that many states require a specific number of hours for staff development. Along with Snow, Schumaker and Sommers (2000) also recognizes professional development for teachers and principals as an important strategy to improve students' academic performance.

The implementation of classroom libraries was also supported by the findings of this study. Almost 90% of principals reported using classroom libraries at significant/moderate levels of implementation and over 90% report significant/moderate levels of impact for this reading strategy. The importance of classroom libraries to improve student success in reading is supported in educational literature. From Gerald G. Duffy (2003), a member of the Reading Hall of Fame, to Linda Gambrell (2001) and Lucy McCormick Calkins (2001), many educational researchers agree that literature rich environments are crucial to motivating students to read.

Results of this study give principals seeking to improve their reading programs the opportunity to consider the information gathered from principals of school earning the Texas Education Agency's Gold Performance Acknowledgment (GPA) for Continuous Improvement in Reading (CIR). The AR program was reported to be widely used. Although the AR program was implemented at the significant level by almost 60% of reporting school principals, less than 50% of those principals ranked the AR program at the significant level of impact. The reported lack of impact of this strategy, however, reinforces the disagreements among researchers surrounding AR discussed in the review of literature (Campbell, 2001; Chenoweth, 2001; International

Reading Association, Inc., 1999b; McEwan, 2002; Persinger, 2001; Vollands et al., 1999). Because the findings of this study support the questions raised regarding the effectiveness of the AR program, principals should determine if the budget monies spent to implement AR in their schools are the best use of their budgets.

Conclusion

This study had two purposes: (1) to identify the principal's perception of the levels of implementation and impact of selected reading strategies used by selected elementary schools in Texas to improve student success in reading and (2) to determine the principal's perception of the extent selected elementary schools in Texas follow AR and AR-like recommend practices. The review of literature supported the principal's role as instructional leader, curriculum decision maker, and day-to-day involvement with teachers and the instructional processes (Chernow & Chernow, 1992; McEwan, 1997; Robbins & Alvy, 2003). Therefore, after a review of the literature, the questionnaire in this study was designed to collect data regarding the principals' perceptions of the levels of implementation and impact of reading strategies selected from a the review of literature. To discover which reading strategies were perceived by the principals from schools with successful reading programs, questionnaires were sent to principals of schools receiving the Texas Education Agency's Gold Performance Acknowledgement for Continuous Improvement in Reading in 2002. The data collected to answer the purposes of this study resulted in many interesting findings.

Generally, responses to all sections of the Principal Questionnaire indicated that the levels of implementation and impact of the selected reading strategies were reported at similar levels by principals of the selected elementary schools. These findings suggest that the amount of time and energy put into implementation of a strategy resulted in a similar level of impact or improvement toward student success in reading. Principals should expect that time spent to implement reading strategies should yield similar results for selected reading strategies in their schools. The use of professional development, classroom libraries, and the AR program received the highest ranking for levels of implementation by principals of successful schools in Texas.

The AR recommended strategies ranked at the significant level by more than 50% of principals of AR schools include: self-selection of AR books by students, the use of rewards for AR points, students take AR practice quizzes, and the use of the STAR program to determine students reading levels. These strategies seem to be the core for most schools using the AR program. These AR recommended strategies appear to be the easiest to implement since use of these strategies only require student time and a minimal amount of teacher time. It seems that the AR program may be popular because this program as implemented in most of the reporting schools requires little teacher time. Principals of AR schools may consider the time students spend reading with a small amount of teachers time a benefit. The fact that principals ranked the impact of the AR program at a lower level than they ranked their level of implementation contradicts this consideration, however.

The AR-like recommended strategies ranked at the significant level by more than 50% of principals of non-AR schools include: students read books on their independent reading level, students self-select books, and the use of student/teacher conferences to direct reading practice. Two of these AR-like strategies match the AR recommended strategies implemented most frequently in AR schools. The difference, however, is the use of the student/teacher conference to direct student reading practice is the core of the differences between the use of the AR program and the use of other reading strategies. It should be noted that the principals of AR schools ranked the use of student/teacher conference at high levels of impact, but low levels of implementation. The implementation of student/teacher conferences requires teachers to spend one-on-one time with students and moves the reward for reading interaction with a computer to interaction with a teacher. Teachers are able to lead the student to react to the literature and enhance the students' ability to interact with the literature as they read. Use of the student/teacher conference should lead to improvement in student success in reading because the teacher can give immediate feedback to the student. A computer can give immediate feedback to the student, but not at the level of the teacher. To increase the impact of the AR program, principals of AR schools should implement the student/teacher conference.

Significant differences were also found in the levels of significant implementation of reading strategies in AR and non-AR schools. Besides the obvious difference of using AR, principals of AR schools implemented the use of reading textbooks and other computer reading programs at levels that were significantly higher than non-AR principals, while, non-AR principals implemented professional development, litera-

ture circles, classroom libraries, and Reading Counts at significantly higher levels than the principals of AR schools. It should be noted that the use of professional development was ranked highly by both categories of principals, but non-AR principals ranked the implementation of professional development at significantly higher levels. AR principals did not report high levels of professional development for their teachers in the AR program. These findings point toward a philosophy of teaching and appear to be involved with the importance of the teacher in the process of reading. Parental involvement and the use of IREAP had low levels of implementation. Additionally, these strategies did not have significant variations of implementation between AR and non-AR schools. It seems principals of both AR and non-AR schools are missing the benefit of using parental involvement to promote student success in reading. And, it seems that IREAP was a strategy that either category of principals did not implement. This lack of implementation could be related to the fact that principals were not aware of this strategy.

Professional development, literature circles, and classroom libraries involve the teacher as a source of learning. The implementation practices for the use of reading textbooks could involve student teacher interaction. Student/teacher interaction would be increased if the reading textbooks were based on a comprehensive reading approach (Pressley, 1998; St. John et al., 2003). The use of other computer reading programs is less likely to involve student/teacher interaction. The significant findings in this study give principals data for determining how their budgets could be allocated to improve student success in reading in their schools.

In schools across the state earning the Texas Education Agency's Gold Performance Acknowledgement for Continuous Improvement in Reading in 2002 whose principals participated in this study, the use of professional development in reading was determined to be the most significant strategy toward improving student success in reading. Eighty percent of these schools returning the questionnaire used the Accelerated Reader Program and twenty percent did not. The variations between which AR recommended reading strategies and the AR-like recommended reading strategies selected by principals for implementation is based on the role of the teacher as a facilitator of learning. The schools where AR was implemented also implement reading strategies that limit the amount of student/teacher interaction; while schools where AR was not implemented used strategies that required more student/teacher interaction. Besides the budget concerns principals face when determining which reading strategies they can afford to implement, principals must decide which strategies would have the most impact on developing successful readers.

Recommendations for Improving Student Success in Reading

Recommendations for improving student success in reading were supported by the review of literature and by the findings in this study. A review of the findings of the research questions result in the following recommendations to principals to improve student success in reading.

1. Provide teachers with opportunities for professional development because over 70% of principals reported a significant impact of the use of professional development for teachers to improve student success in reading.

2. Implement student/teacher conferences to direct reading practice because principals of both AR and non-AR schools reported use of this strategy at higher levels of impact than the level of reported implementation.
3. Allow students to self-select the books on their independent reading level for independent reading practice because over 90% of AR principals and non-AR principals report moderate to significant impact of this reading strategy.
4. Consider the use of literature circles, classroom libraries and reading text-books. These reading strategies were found to be implemented differently at statistically significant levels in AR and non-AR schools. Principals in AR schools implemented the use of reading textbooks at significantly higher levels. Principals of non-AR schools implemented literature circles and class-room libraries at significantly higher levels.
5. Review the use of rewards and posting of goals to determine if these practices increase students' success in reading. Because of the controversy in the literature over differences in opinions surrounding motivational theories, this practice should be evaluated (Cameron & Pierce, 1994; Deming, 1992; Kohn, 1996; Lepper et al., 1996; Ryan & Deci, 1996).
6. Assess computer reading programs to determine if there are less costly options available because 20% of the principals receiving the Texas Education Agency's Gold Performance Acknowledgement for Continuous Improvement in Reading reported they did not implement AR, and principals of AR schools reported the level of impact of the AR program at lower levels than the level of reported implementation.

7. In schools using the AR program, principals should review implementation practices for greater impact. In this study, principals using AR reported their perceptions that the level of implementation of AR does not equal the level of impact and the findings of this study indicate that some of the AR recommended reading strategies had greater levels of impact than reported levels of implementation. Examples include professional development in AR, the use of the student/teacher conference, and sustained silent reading. In addition, the use of classroom libraries was also reported to have high levels of impact.

Recommendations for Further Study

The data gathered from the questionnaire contained valuable information for further study. The following is a list of possible further research.

1. What is the level of state recognition of schools earning the Texas Education Agency's Gold Performance Acknowledgement (GPA) for Continuous Improvement in Reading (CIR) in 2002? (I.e., schools must be rated Exemplary, Recognized, Academically Acceptable, or Acceptable to receive the GPA for CIR.) Since schools that are Acceptable or higher can receive this award, it would be interesting to learn if the reading strategies are implemented differently in schools earning different levels of state recognition.
2. What is the demographics profile of schools earning the GPA for CIR? This study would give us valuable information concerning the levels of implemen-

tation and impact of reading strategies used in schools with different demographic profiles.

3. What is the demographic profile of schools that use AR? This study would provide a demographic profile of schools where the AR program is implemented as a reading strategy.
4. Does the length of time AR is used impact student success in reading? This study would provide information on the length of time schools should use AR before expecting improvement in students' success in reading.
5. How could sustained silent reading be implemented into the school day? This study would provide information to principals to allow for the increase use of this strategy.
6. Is the AR program implemented differently in schools that did not receive the GPA for CIR? This study would provide more data to compare the effectiveness of AR recommended strategies.

Summation

This study had two purposes: (1) to identify the principal's perception of the levels of implementation and impact of selected reading strategies used by selected elementary schools in Texas to improve student success in reading and (2) to determine the principal's perception of the extent selected elementary schools in Texas follow AR and AR-like recommended practices. The reading strategies to improve student success in reading selected for this study frequently occurred in the review of literature. Questionnaires designed to measure the principals' perceptions

of the level of success of the selected reading strategies were mailed to the principals of 721 elementary schools in Texas whose schools received the Gold Performance Acknowledgement (GPA) from the Texas Education Agency (TEA) for Continuous Improvement in Reading (CIR) on the Texas Assessment of Academic Skills (TAAS) in 2002. Analysis of the data collected from the 252 returned questionnaires identified the principals' perceptions of the characteristics of a successful reading program in selected Texas elementary schools. These findings indicate to maximize their budgets while improving student success in reading principals should consider implementing the following reading improvement strategies:

1. Provide professional development in reading for their teachers,
2. Implement student/teacher conferences to direct reading practice,
3. Allow students to self-select books on their independent reading level for independent reading practice,
4. Consider implementing the use of literature circles, classroom libraries, and reading textbooks,
5. Review the use of rewards and posting of goals to determine if these practices increase student success in reading,
6. Assess computer reading programs to determine if less costly options are available, and schools using the AR program, should review implementation practices for greater impact.

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APPENDIX A

QUESTIONNAIRE

PRINCIPAL QUESTIONNAIRE

FOR ELEMENTARY SCHOOLS
EARNING THE GOLD PERFORMANCE ACKNOWLEDGEMENT
FOR COMPARABLE IMPROVEMENT IN READING

INDIVIDUAL RESPONSES WILL BE HELD CONFIDENTIAL

Since your school has improved reading scores, we would like to document the strategies you have implemented. Please take the next five to ten minutes to answer the following questions regarding practices used at your campus to improve student success in reading. We hope the results of this research will provide information that will assist you in determining how to spend your reading budget for next year. **Check the box below if you would like to receive the results of this study.** Please return the questionnaire by **Wednesday, December 10** in the stamped self-addressed envelope provided. Thank you in advance for your time and your contribution to improving reading scores in Texas!

☐ I would like to receive the results of this study.

PART I: Please circle the level of implementation of the following reading strategies in your school and the level of impact of these strategies toward improving student success in reading.

1. **Our school uses a reading textbook program to improve student success in reading.**

LEVEL OF IMPLEMENTATION			
Not Implemented	Minimal Implementation	Moderate Implementation	Significant Implementation
LEVEL OF IMPACT			
No Impact	Minimal Impact	Moderate Impact	Significant Impact

2. **Our school uses Literature Circles to improve student success in reading.**

LEVEL OF IMPLEMENTATION			
Not Implemented	Minimal Implementation	Moderate Implementation	Significant Implementation
LEVEL OF IMPACT			
No Impact	Minimal Impact	Moderate Impact	Significant Impact

3. Our school has classroom libraries to improve student success in reading.

LEVEL OF IMPLEMENTATION			
Not Implemented	Minimal Implementation	Moderate Implementation	Significant Implementation
LEVEL OF IMPACT			
No Impact	Minimal Impact	Moderate Impact	Significant Impact

4. Parents in our school are part of the program to help improve student success in reading.

LEVEL OF IMPLEMENTATION			
Not Implemented	Minimal Implementation	Moderate Implementation	Significant Implementation
LEVEL OF IMPACT			
No Impact	Minimal Impact	Moderate Impact	Significant Impact

5. Our teachers participate in professional development to improve instruction in reading.

LEVEL OF IMPLEMENTATION			
Not Implemented	Minimal Implementation	Moderate Implementation	Significant Implementation
LEVEL OF IMPACT			
No Impact	Minimal Impact	Moderate Impact	Significant Impact

6. Our school uses Internet, Reading, Encoding, Annotating, and Pondering (IREAP) to improve student success in readings.

LEVEL OF IMPLEMENTATION			
Not Implemented	Minimal Implementation	Moderate Implementation	Significant Implementation
LEVEL OF IMPACT			
No Impact	Minimal Impact	Moderate Impact	Significant Impact

7. Our school uses Reading Counts to improve student success in reading.

LEVEL OF IMPLEMENTATION			
Not Implemented	Minimal Implementation	Moderate Implementation	Significant Implementation
LEVEL OF IMPACT			
No Impact	Minimal Impact	Moderate Impact	Significant Impact

8. Our school uses Accelerated Reader (AR) to improve student success in reading.

LEVEL OF IMPLEMENTATION			
Not Implemented	Minimal Implementation	Moderate Implementation	Significant Implementation
LEVEL OF IMPACT			
No Impact	Minimal Impact	Moderate Impact	Significant Impact

9. Our school uses another computer reading program other than AR to improve student success in reading.

LEVEL OF IMPLEMENTATION			
Not Implemented	Minimal Implementation	Moderate Implementation	Significant Implementation
LEVEL OF IMPACT			
No Impact	Minimal Impact	Moderate Impact	Significant Impact

Name of other computer reading program used:

_____ .

If your school uses Accelerated Reader, proceed to Part II on page 4.

If your school <u>does not</u> use, Accelerated Reader, <u>proceed to part III on page 8</u>.

You do not need to complete Part II.

Part II. If your school uses AR, circle the appropriate responses:

Section A.

1. **How many years have you used AR in your school?**

   1 year 2 years 3 years 4+ years

2. **Please circle all the grade levels in your school using AR.**

   K 1 2 3 4 5

3. **Circle the position of the person making the final decisions concerning the implementation practices for AR at your school.**

   Principal Asst. Principal Counselor Librarian Other: _____

Circle the level of implementation of practices for AR in your school and the level of impact of these AR practices toward improving student success in reading.

Section B.

1. **Students select their own AR books.**

LEVEL OF IMPLEMENTATION			
Not Implemented	Minimal Implementation	Moderate Implementation	Significant Implementation
LEVEL OF IMPACT			
No Impact	Minimal Impact	Moderate Impact	Significant Impact

2. **Students' AR reading levels are determined by using Star Reading Program.**

LEVEL OF IMPLEMENTATION			
Not Implemented	Minimal Implementation	Moderate Implementation	Significant Implementation
LEVEL OF IMPACT			
No Impact	Minimal Impact	Moderate Impact	Significant Impact

3. **Students take AR Reading Practice Quizzes.**

LEVEL OF IMPLEMENTATION			
Not Implemented	Minimal Implementation	Moderate Implementation	Significant Implementation
LEVEL OF IMPACT			
No Impact	Minimal Impact	Moderate Impact	Significant Impact

4. Students and teachers use AR reports in conferences to direct reading practice.

LEVEL OF IMPLEMENTATION			
Not Implemented	Minimal Implementation	Moderate Implementation	Significant Implementation
LEVEL OF IMPACT			
No Impact	Minimal Impact	Moderate Impact	Significant Impact

5. Students have set reading goals in the AR program.

LEVEL OF IMPLEMENTATION			
Not Implemented	Minimal Implementation	Moderate Implementation	Significant Implementation
LEVEL OF IMPACT			
No Impact	Minimal Impact	Moderate Impact	Significant Impact

6. Students keep track of their own points earned for reading in the AR program.

LEVEL OF IMPLEMENTATION			
Not Implemented	Minimal Implementation	Moderate Implementation	Significant Implementation
LEVEL OF IMPACT			
No Impact	Minimal Impact	Moderate Impact	Significant Impact

7. Students' achievement of AR reading goals are posted in classrooms, hallways, and/or the library.

LEVEL OF IMPLEMENTATION			
Not Implemented	Minimal Implementation	Moderate Implementation	Significant Implementation
LEVEL OF IMPACT			
No Impact	Minimal Impact	Moderate Impact	Significant Impact

8. Students are given more than 30 minutes a day during school for AR sustained silent reading.

LEVEL OF IMPLEMENTATION			
Not Implemented	Minimal Implementation	Moderate Implementation	Significant Implementation
LEVEL OF IMPACT			
No Impact	Minimal Impact	Moderate Impact	Significant Impact

9. Students receive certificates for earning AR points.

LEVEL OF IMPLEMENTATION			
Not Implemented	Minimal Implementation	Moderate Implementation	Significant Implementation
LEVEL OF IMPACT			
No Impact	Minimal Impact	Moderate Impact	Significant Impact

10. Students earn rewards other than certificates for AR points.

LEVEL OF IMPLEMENTATION			
Not Implemented	Minimal Implementation	Moderate Implementation	Significant Implementation
LEVEL OF IMPACT			
No Impact	Minimal Impact	Moderate Impact	Significant Impact

11. Our school has a school store for students to spend earned AR points.

LEVEL OF IMPLEMENTATION			
Not Implemented	Minimal Implementation	Moderate Implementation	Significant Implementation
LEVEL OF IMPACT			
No Impact	Minimal Impact	Moderate Impact	Significant Impact

12. Students receive grades on their report cards for AR points.

LEVEL OF IMPLEMENTATION			
Not Implemented	Minimal Implementation	Moderate Implementation	Significant Implementation
LEVEL OF IMPACT			
No Impact	Minimal Impact	Moderate Impact	Significant Impact

13. Teachers received professional development training in AR.

LEVEL OF IMPLEMENTATION			
Not Implemented	Minimal Implementation	Moderate Implementation	Significant Implementation
LEVEL OF IMPACT			
No Impact	Minimal Impact	Moderate Impact	Significant Impact

14. Students take AR Literacy Skills Tests.

LEVEL OF IMPLEMENTATION			
Not Implemented	Minimal Implementation	Moderate Implementation	Significant Implementation
LEVEL OF IMPACT			
No Impact	Minimal Impact	Moderate Impact	Significant Impact

15. Our school uses AR testing correlated with our textbook series.

LEVEL OF IMPLEMENTATION			
Not Implemented	Minimal Implementation	Moderate Implementation	Significant Implementation
LEVEL OF IMPACT			
No Impact	Minimal Impact	Moderate Impact	Significant Impact

16. Our school uses AR testing correlated with popular educational magazines.

LEVEL OF IMPLEMENTATION			
Not Implemented	Minimal Implementation	Moderate Implementation	Significant Implementation
LEVEL OF IMPACT			
No Impact	Minimal Impact	Moderate Impact	Significant Impact

You do not need to complete Part III. Thank you for completing the questionnaire. If your school uses additional reading strategies that are not identified above, please list them on the back of this page. Please return the questionnaire in the stamped, self-addressed envelope provided.

PART III. If your school <u>does not use Accelerated Reader,</u> complete the following pages.

Please circle the level of implementation of the following <u>reading strategies</u> used in your school and the level of impact of these strategies toward improving student success in reading.

1. **Students select their own books for independent reading.**

LEVEL OF IMPLEMENTATION			
Not Implemented	Minimal Implementation	Moderate Implementation	Significant Implementation
LEVEL OF IMPACT			
No Impact	Minimal Impact	Moderate Impact	Significant Impact

2. **Students read books on their independent reading level.**

LEVEL OF IMPLEMENTATION			
Not Implemented	Minimal Implementation	Moderate Implementation	Significant Implementation
LEVEL OF IMPACT			
No Impact	Minimal Impact	Moderate Impact	Significant Impact

3. **Students take tests on the books they read.**

LEVEL OF IMPLEMENTATION			
Not Implemented	Minimal Implementation	Moderate Implementation	Significant Implementation
LEVEL OF IMPACT			
No Impact	Minimal Impact	Moderate Impact	Significant Impact

4. Students and teachers conference to direct reading practice.

LEVEL OF IMPLEMENTATION			
Not Implemented	Minimal Implementation	Moderate Implementation	Significant Implementation
LEVEL OF IMPACT			
No Impact	Minimal Impact	Moderate Impact	Significant Impact

5. Students have set reading goals.

LEVEL OF IMPLEMENTATION			
Not Implemented	Minimal Implementation	Moderate Implementation	Significant Implementation
LEVEL OF IMPACT			
No Impact	Minimal Impact	Moderate Impact	Significant Impact

6. Students keep track of their progress toward their reading goals.

LEVEL OF IMPLEMENTATION			
Not Implemented	Minimal Implementation	Moderate Implementation	Significant Implementation
LEVEL OF IMPACT			
No Impact	Minimal Impact	Moderate Impact	Significant Impact

7. Students' achievement of reading goals is posted in classrooms, hallways, and/or the library.

LEVEL OF IMPLEMENTATION			
Not Implemented	Minimal Implementation	Moderate Implementation	Significant Implementation
LEVEL OF IMPACT			
No Impact	Minimal Impact	Moderate Impact	Significant Impact

8. Students are given more than 30 minutes a day during school for sustained silent reading.

LEVEL OF IMPLEMENTATION			
Not Implemented	Minimal Implementation	Moderate Implementation	Significant Implementation
LEVEL OF IMPACT			
No Impact	Minimal Impact	Moderate Impact	Significant Impact

9. Students receive certificates for reading books.

LEVEL OF IMPLEMENTATION			
Not Implemented	Minimal Implementation	Moderate Implementation	Significant Implementation
LEVEL OF IMPACT			
No Impact	Minimal Impact	Moderate Impact	Significant Impact

10. Students earn rewards other than certificates for reading books.

LEVEL OF IMPLEMENTATION			
Not Implemented	Minimal Implementation	Moderate Implementation	Significant Implementation
LEVEL OF IMPACT			
No Impact	Minimal Impact	Moderate Impact	Significant Impact

Thank you for completing the questionnaire. If your school uses additional reading strategies that are not identified above, please list them on the back of this page. Please return the questionnaire in the stamped, self-addressed envelope provided.

APPENDIX B

PILOT STUDY COVER LETTER

The enclosed questionnaire has been approved by HISD Department of Research and Accountability. A copy of the approval letter and a copy of my proposal have also been included. If you have recently returned the questionnaire which was mailed in October, thank you for your participation.

The questionnaire is part of a pilot study being sent to the 47 elementary school principals in the Houston Independent School District whose schools received the Gold Performance Acknowledgement for Comparable Improvement in Reading in 2002. If you have suggestions to improve the directions or recommendations that would make the questions clearer, please state them in the space below or on the questionnaire.

I will be revising the questionnaire before mailing it to the remaining 700+ Texas elementary school principals whose schools received the Gold Performance Acknowledgement for Comparable Improvement in Reading in 2002. You may contact me at oelmore@houston.rr.com. Please return the questionnaire by Wednesday, December 10, 2003.

Thank you for your help.

Olivia Elmore
Doctoral Candidate
Texas A&M University

APPENDIX C

QUESTIONNAIRE TRANSMITTAL LETTER

1428 Moritz Drive
Houston, Texas 77055
oelmore@houston.rr.com
713-932-7577

October 22, 2003

PRINCIPAL
TEXAS EL
14249 SCHOOL RD
CITY, TX

Dear Principal,

The enclosed questionnaire is intended to identify reading strategies used in your school to improve student success in reading. We are particularly desirous of obtaining your response since your school received this prestigious recognition. This questionnaire is being sent to 721 elementary school principals whose schools received the Gold Performance Acknowledgement for Campus Comparable Improvement in Reading for 2002 from the Texas Education Agency. **Completing the questionnaire will take five to ten minutes**. Check the appropriate box on the questionnaire, and we will send the results of our study to you.

The information gained from this questionnaire will become part of my doctoral dissertation for Texas A&M University. The purpose of this study, *Analysis of the Principal's Perceptions of the Implementation and Impact of the Accelerated Reader and Other Reading Strategies Used by Texas Gold Performance Elementary Schools*, is to identify the implementation practices and impact of reading strategies used in Texas elementary schools with documented improvement in reading scores. Dr. Bryan R. Cole, Professor and Department Head of the Department of Educational Administration and Human Resource Development is chairing my committee. Please contact me at the above address or Dr. Cole at 979-845-2716 or b_cole@tamu.edu if you have any questions concerning the study.

To participate in the study, you should complete the questionnaire **by Wednesday, November 5** and return it in the stamped, self-addressed envelope enclosed. Please feel free to answer any or part of the questionnaire. There are no negative consequences for not participating in the study. All responses will be kept confidential with results reported numerically. The questionnaires will be destroyed when the study is completed.

By returning the questionnaire, you understand that you are agreeing to participate in the study and that this research study has been reviewed and approved by the Institutional Review Board-Human Subjects in Research, Texas A&M University. For research-related problems or questions regarding subjects' rights, you can contact the Institutional Review Board through Dr. Michael W. Buckley, Director of Support Services, Office of Vice President for Research at 979-458-4067 or mwbuckley@tamu.edu.

Congratulations for improving student success in reading on your campus, and thank you for your contribution to this study. I look forward to hearing from you.

Sincerely,

Olivia Elmore
Enc.

VITA

Olivia Carol Elmore
1428 Moritz Drive
Houston, TX 77055

Education

2005	Doctor of Philosophy, Educational Administration, Texas A&M University, College Station, TX
1994	Master of Education, Education Administration, Houston Baptist University, Houston, TX
1989	Bachelor of Arts, Elementary Education and History, Houston Baptist University, Houston, TX

Certification (State of Texas)

Superintendent (Life)
Mid-Management Administrator (Life)
Elementary Self-Contained Grades 1-8 (Life)
Elementary History Grades 1-8 (Life)

Experience

2004 – Present	Head of School, First Baptist Academy, Houston, TX
2001 – 2004	Middle School Principal, First Baptist Academy, Houston, TX
1994 – 2001	Director of Curriculum and Technology, Second Baptist School, Houston, TX
1993 – 1994	Middle School Principal, Second Baptist School, Houston, TX

This dissertation was typed and edited by Bill A. Ashworth, Jr.