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The Effects of Motivational Independent Reading Programs on Elementary At-Risk Students' Reading Skills

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by

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Doctor of Education

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Declaration of Originality

I do hereby declare and attest to the fact that this is an original study based solely upon my own scholarly work here at Lindenwood University and that I have not submitted it for any other college or university course or degree here or elsewhere.

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Dr. Cynthia Bice, Committee Chair — Date

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Abstract

Teaching literacy is a challenging process that incorporates the functional and structural aspects of language with the comprehension of its content. Educators are often unable to successfully identify the appropriate strategies that are best-suited to communicate these distinctive components of literacy to students. Students from backgrounds of low socio-economic status are more likely to face challenges in acquiring literacy due to the cultural exceptions attached to their community and to the lack of resources available to them in the home and in schools that have less funding.

The research study seeks to investigate these issues through comparing and contrasting the outcomes of two programs designed to improve literacy among elementary school students. These programs, the Accelerated Reader (AR) and the Reading Counts (RC), are currently in use in the Riverview Gardens School District (RGSD) of North St. Louis County, Missouri. Students in the RGSD have historically demonstrated below-average literacy and reading comprehension on the standardized Missouri Assessment Program test, and students have historically come from households that are below the national average for economic security. This researcher hypothesized that at-risk students using AR supplemental reading assistance will have a greater rate of improvement in the reading analysis section of the Scholastic Reading Inventory (SRI) when compared to at-risk students using RC supplemental reading assistance. The method selected for the study is a causal-comparative study. The design is a multistrand research experiment in which quantitative research data were collected from two distinct sample populations and the results contrasted for similarities and differences.

Comparing and contrasting the gains in literacy between the two schools as demonstrated by the annual Scholastic Reading Inventory (SRI) test, the study can be used to recommend either the AR or the RC program for use in assisting students from at-risk populations to gain and attain literacy. The results suggest that both programs improved reading skills. Recommendations for future research include a larger and more diverse sample population.

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List of Abbreviations

AR	Accelerated Reader
DESE	Department of Elementary and Secondary Education
HOSTS	Helping One Student to Succeed
MAP	Missouri Assessment Program
NCES	National Center for Education Statistics
RC	Reading Counts
ROAR	Reach Out and Read
RR	Reading Recovery
SRI	Student Reading Inventory
TOAST	Title One After School Tutorial

Chapter I – Introduction

Background

Declining scores in reading are thought to be attributed to multiple background factors within the school and within the students' families such as socio-economic status (MCDC, 2000). Those background factors that fall within the scope of education are reviewed in this study with the intention of recognizing problematic issues that distorted or otherwise reduced the ability of the elementary schools' at-risk students to achieve acceptable (or, ideally, above average) reading achievement. Background factors that influence the socio-economic status of at-risk students are interconnected and are mainly controlled by the parents. Subsequently, the conditions that place at-risk students for academic difficulty are complex and cannot be easily resolved. Jenkins (2004) defined at-risk students as those who are economically disadvantaged and in danger of not achieving academic success due to social and economic factors. D'Agostino and Murphy (2004) revealed that relatively low achievement levels of underprivileged students have been a longstanding concern of American educators. At-risk students commonly fall behind their less at-risk peers as early as the beginning of first grade. It is this practitioner's experience that many children of poverty come to school with little exposure to books due to parents who were not successful in school themselves. Alawiye and Williams (2005) asserted, in many schools, the number of children unable to read and understand grade level material is growing at an alarming rate.

Research clearly demonstrates the link between students living in the lower socio-economic level and poor reading achievement. Luftig (2003) maintained that the issue of reading achievement for children and youth at economic and educational risk continues to

be an important topic in education. Further data continues to show that economically disadvantaged children continue to experience difficulties in reading (Luftig). Kim (2006) insisted The No Child Left behind Act of 2001 officially recognized that the socio-economic conditions experienced by at-risk students placed them at a disadvantage when compared to students who were from advantageous socio-economic backgrounds. The plight of at-risk students is now formally recognized in public education: however, in spite of overall improvements in tolerance, awareness, and the availability of resources, at-risk students continue to demonstrate lower levels of academic achievement when contrasted with students from higher socio-economic backgrounds leading educators to theorize that the remedy to poor reading achievement is not found within the school setting (Luftig).

More reading interventions are needed outside of school to provide at-risk students with the experiences and opportunities they do not receive at home. Gilliam and Gerla (2004) maintained in order to resolve problems that lie beyond the scope of the school's authority and to help the student attain improved standards of reading performance, educators have begun offering supplemental programs that target shortcomings in the student's home environment. Interventions that have shown to be helpful to at-risk students are (a) reading interventions, (b) after school tutoring, and (c) parental involvement (Gilliam & Gerla).

Jayroe (2005) confirmed after thirty years of research that parental involvement in children's learning is a critical link to achieving a high quality education for every student. Therefore, if educators expect more children to be successful in literacy experiences at school, then they need to strive to form lasting partnerships with parents.

An attempt in resolving the problem of declining reading achievement scores in the Riverview Gardens School District (RGSD) was initiated in 1997 as administrators reviewed reading programs with the goal of selecting the program that would best target challenges in reading comprehension experienced by disadvantaged students. Over the next 10 years, a series of programs were selected and implemented to help at-risk students improve reading comprehension, word recall, recognition, and English language cognition. Reading interventions were utilized by RGSD to improve reading achievement. The first reading intervention to be adopted was Reading Recovery, which was used for only three years, but was discontinued because of the high cost. Fitzgerald and Ramsbotham (2004) defined Reading Recovery as a well established individualized supplemental first grade reading intervention program designed to accelerate progress for the lowest achieving students. Marie Carbo Reading was the second reading intervention adopted to help the students but was used for only four years. The Maria Carbo Reading intervention has been shown to improve sight word knowledge and reading fluency using recorded books (Carbo, 1997). It was discontinued because it involved using tape recorders that were continually breaking. The third reading intervention adopted was a set of two computer-based motivational reading interventions, Accelerated Reader (AR) and Reading Counts (RC). Both have been used for the past six years, and both are still in use at the time of this writing. Lewis & Clark Elementary adopted AR. Cuddeback and Ceprano (2002) described AR as a computer-based reading and management program designed for students in grades K-12. Moline Elementary School adopted RC; a computer-based reading program intended to boost reading ability and help develop a love of reading. Hunter (2005) stated this program provides leveled, measurable,

independent reading practice for K-12 students. Additional reading interventions initiated included after-school tutoring and monthly reading events that involved the community and students in language comprehension.

In spite of these reading programs, MAP test scores of the students from RGSD were consistently low and demonstrated a gradual state of decline (DESE, 2007). The AR and the RC programs are the two programs that have been implemented and maintained within the schools for the longest overall duration and are therefore most likely to have had the greatest impact on the students' performance in reading. The AR is a guided reading comprehension intervention in which teacher-facilitated assistance, Information Technologies (IT), and a carefully selected program are offered for students from Kindergarten through the 12th grade. The AR program contains six components as follows; (a) sustained silent reading, (b) appropriate reading level, (c) free choice of books, (d) reading comprehension tests, (e) earning points, (f) extrinsic rewards (Haycock, 2005).

The RC program is a for-profit service offered by Scholastic Books. It provides a framework for reading intervention that (a) allows students to select their own reading material and (b) provides strategies for monitoring reading comprehension and tracking students' academic progress (Hunter, 2995). Assessment of these programs to explore their overall influence on the students may help clarify how, why, and to what extent student achievement is attained.

This study explored two reading programs to identify their impact on the at-risk student population at two elementary schools. Both the AR and RC programs are designed to target students' early reading comprehension, but the AR program integrates

features to supplement the students' background experiences while the RC program is embedded into the existing curriculum. Comparing and contrasting the effectiveness of these two programs between two similar populations of at-risk elementary school students may add to the understanding of the overall effectiveness of supplemental programs.

Purpose

The purpose of this study was to compare two reading interventions to determine which one was more effective with at-risk students. Computer-based independent, motivational reading programs were utilized, the AR program and the RC program. Students reading levels were monitored and compared to determine which program produced significantly improved reading skills as measured by the Scholastic Reading Inventory (SRI), a computer-adaptive assessment.

Problem Statement

In 1997, educators noted a decline of the Missouri Assessment Program (MAP) reading scores for many of the at-risk students who attend the Riverview Gardens School District (RGSD), (DESE, 2007). Located in North St. Louis County, Missouri, RGSD is comprised of one high school, two middle schools, and nine elementary schools. The community served by the RGSD is predominantly comprised of families living near or below the poverty level (MCDC, 2006). The two elementary schools in RGSD Lewis & Clark Elementary School and the Moline Elementary School serve student populations that come from economically disadvantaged families (MCDC, 2000). At Lewis and Clark 98 percent of the students qualify for the free or reduced lunch program, and 91 percent of the students at Moline qualify for the same program. Scores from the 2005 MAP

indicated 70.6 percent of the fourth grade students from Lewis & Clark were in the lowest categories, Step 1 and Progressing, and Moline students' scores for the 2005 MAP indicated 74.7 percent of the fourth grade students were in the lowest categories, Step 1 and Progressing (DESE, 2006). Finally, RGSD has limited funds to address the requirements of a school population that is composed mostly of at-risk students. Thus, it is essential that these funds are used for the most effective programs.

Hypothesis

At-risk students using AR supplemental reading assistance will have higher scores in the reading analysis section of the SRI when compared to at-risk students using RC supplemental reading assistance.

Rationale for the Study

Musti-Rao and Cartledge (2007) professed inner-city schools are now provided with a greater abundance of resources than what they received even two decades ago. Further, steps have been taken to recruit and retain highly-qualified administrators and teachers to schools with populations of at-risk students. Researchers and educators are now seeking to identify how the students' home environment and the experiences therein might impact their academic performance. They seek to identify factors that are disincentives to learning and reading achievement.

Motivating disadvantaged students to increase reading achievement is multifaceted. Educators may benefit from using and integrating many interventions to address the needs of every student. The responsibility of the educator should be to discover interventions that will best complement the requirements of the students. In the elementary grades, the assigned lessons are simple and that it is relatively easy to

incorporate techniques such as sounding out words and echo reading to help students learn to read more fluently. Teachers monitor the students work through observation as they complete the task. In the intermediate levels, grades 4 through 6, however, lessons are obviously more complex. It has been the primary investigator's experience as an elementary educator that fewer interventions are used and the students become more independent as they complete the tasks assigned in these upper elementary grades.

At RGSD, it is in grades four through six where disadvantaged student achievement gap begins to grow (DESE, 2006). It is the experience of the researcher that the children who do not have added support at home do not understand the importance of studying lessons and reading each night. If these students are going to advance in reading achievement, the educators should create an atmosphere that will encourage students to read more.

Independent Variable

In this study, the independent variable was the type of independent motivational computer reading program being implemented; AR was adopted for the students enrolled at Lewis & Clark School, and RC was adopted for students enrolled in Moline School. Both AR and RC are computer–based, motivational and independent reading improvement programs.

Dependent Variable

Student achievement, as measured by the Scholastic Reading Inventory (SRI) scores, was the dependent variable. SRI is a computer-adaptive assessment used to determine how well students read and comprehend literature and expository text at varying difficulties (Reed, Marchand, Martella, & Kolts, 2007). The reading levels were

stated in the Lexile Level Framework, a system for measuring students' reading levels and matching readers to text (Reed et al.). These scores were compared and analyzed to determine if one program produces more significantly improved reading levels than the other.

Definitions of Terms

At-risk student. Students in danger of not attaining predetermined benchmarks to denote academic success due to known factors that impede education and academic performance. In the context of this paper, "at-risk" students are those who have been impacted by social, cultural, and economic factors.

Benchmark. A base score used to evaluate progress.

Disadvantaged students. Students from families living in low socioeconomic communities.

Emergent readers. Students who are just beginning to read but do not possess the ability to read with fluency or understanding.

Lexile Level. A system for measuring students' reading levels and matching readers to text. "The Lexile score measures students' performance within a range of Beginning Reader (BR) to 1700+. Readers earned a score, and their reading level average was determined by adding 50 and subtracting 100 (e.g., SRI Lexile = 1200; reading range = 1100 -1250)" (Reed, Marchand, Martella & Kolts, 2007, p. 57).

Literacy. Reading comprehension at a level adequate for understanding

Missouri Assessment Program (MAP). The yearly standardized testing for Missouri students.

Oral literacy. Also known as spoken or audible literacy, oral literacy refers to the ability to comprehend spoken information. The term is also applied to a person's ability to speak fluently (Hunter, 2005).

Parental involvement. The active role taken by parents and applied to their child's education.

Recreational reading. Reading activities done mainly for enjoyment, entertainment and appreciation.

Remedial reading program. Tutorial interventions designed to develop the literacy skills of low-performing students.

Scholastic Reading Inventory. *A* computer-adaptive assessment used to determine how well students read and comprehend literature and expository text at varying difficulties. The SRI focuses on comprehension skills including identifying details in a passage, identifying cause and effect relationships and sequencing of events, drawing conclusions, and making comparisons and generalizations. Based upon the students' answers as they were taking the test, the computer moves to easier or more difficult questions. The Scholastic Reading Inventory provides a Lexile Level for each pupil.

STAR test. Computer generated reading assessment.

Written literacy. When literacy is discussed, comprehension of the written word is most likely the subject of debate. Written literacy refers to the process of reading and writing information. The degree to which a student is literate is assessed when determining literacy (Hunter, 2005).

Zone of Proximal Development. The level of difficulty that leads to optimal learning.

Summary

Four background factors that affect the reading achievement of at-risk students were reviewed. The first factor was how the low socio-economic level of children negativity affects at-risk students. The second factor was the relationship between students living in the lower socio-economic level and poor reading achievement. The third factor was the need for more reading interventions outside of school to provide at-risk students with experiences and opportunities not received at home. The fourth factor was the lack of parental involvement in at-risk students' education. Knowledge of background factors facing at-risk students as they strive to improve reading achievement is advantageous to solving this dilemma.

The first objective of Chapter II is to review the history of literacy and literacy acquisition. The second objective is the investigation of the efficacy of reading improvement and motivational reading interventions in search of valuable reading interventions to support struggling students. The third objective is the assessment and evaluation of reading interventions, such as the AR and RC programs used in this study.

Chapter II-Review of Literature

Literacy has been recognized as a critical factor in acquiring and sustaining economic achievement. Since the close of World War II, increasing the literacy rates of the American workforce has been a priority (Kozol, 1985). Improving literacy through targeting students at the primary and secondary school levels is a significant component of this policy, thus making education mandatory for all persons in the United States under the age of 16.

There are multiple definitions of literacy, and many of these definitions are interconnected because of the levels of cognition and cultural experiences influenced by literacy. Reading literacy, or printed literacy, refers to the comprehension of the written word, while oral literacy refers to comprehension of the spoken word. Literacy studies have also shown that literacy has strong connections to the social, cultural, and economic status of the individual, and that the representation of literacy as exclusively applied to the written word purposefully separates many of the components that are associated with comprehension and thus confuses an appropriate and comprehensive understanding of literacy (Street, 1993). Thus, while the current study seeks to explore students' comprehension of written content, literacy is best examined as comprised of several distinctive components that are part of the whole. This chapter shall explore these issues in respect to literacy comprehension, literacy comprehension among at-risk students, and how literacy improvement programs influence literacy comprehension.

History of Literacy, Education, and Cultural Status in the United States

Literacy needs to be appreciated as a stepping stone in a child's path toward social and economic success. In the United States, literacy has long been identified as a critical

aspect of a child's education and has also been identified as a necessary element in attaining a desirable standard of living. These traits have persisted throughout the country's history as there are historical precedents to establish literacy as a valuable and accepted component of American culture. Sticht (2002) noted that "the nineteenth century became the prime example of how more literacy begets still more literacy," referring to how the culture of the United States became more permissive of books and literacy following the close of the Civil War (p. 126). Significant gains in literacy were made during this period as printed materials became more plentiful and were recognized as a form of entertainment (Sticht). These gains reached saturation prior to the First World War, as those persons who had access to education and the resources necessary to acquire printed materials gradually incorporated literacy into their lives; by the 1920s, those who were in the upper socioeconomic classes were expected to know how to read, so this became a mainstay of their upbringing. The working classes, however, did not have the same resources available and, while literacy had increased, the level of literacy attained was not demonstrated at the same levels as was observed in the upper classes (Sticht).

The Second World War also led to another period of emphasis on literacy in American culture. America's advantages as a country were derived from the capabilities of its workforce, and thus it became necessary to promote education for the workers (Street, 1993). Literacy programs were introduced into schools and, in the 1960s, Adult Basic Education was made available to those adult students who sought to improve their professional and personal lives through attaining basic educational skills. However, it was not fully appreciated that literacy, education, and the student's lifelong standard of

living were linked until the 1980s when public policy groups began to profile the developed nations of the world. It was found that poverty and the circumstances surrounding a cultural setting in which poverty is a defining characteristic of daily life are not fully appreciated by persons in developed countries and who also have attained education. In a position paper introduced by the World Bank, Tilak (1989) connected patterns of education and economic positions among civilizations throughout the world. Tilak began by suggesting that "there has been an education explosion in all countries of the world, but that the increased availability of education has not led to corresponding economic growth" (p. 1). However, when patterns of education distribution are analyzed, there are corresponding patterns of economic growth; namely, a threshold of education that needs to be obtained before there are improvements in the economic status of the citizens. If this threshold is not met by a sufficient percentage of the population, then the overall economic status of the population will not increase. It is certainly true that some persons who had good fortune or were able to obtain higher education can still excel within this setting, but the overall economic status of a community cannot be changed until the majority of persons who reside and work within that community have passed this education threshold.

Of the myriad of individual components of education that play a role in passing this threshold, Tilak (1989) wrote, literacy is not only important but can be seen as a critical benchmark that can be used to evaluate a population's overall educational status and how close it is to reaching the threshold where the saturation of education corresponds to improvements in economic growth. During the education explosion that occurred from 1960 to 1985, Tilak reported that "adult literacy increased in the

developing countries by 21 percentage points" (p. 3). Similarly, during this same period, the enrollment of students in primary school "increased by 25 percentage points" (p. 3). He cautioned his readers from over-attributing the significance of these findings and noted that "this tremendous growth is of course to be seen against the relatively small bases at which these developing economies started. Nevertheless, the findings reflect significant achievement" (p. 3). Once the threshold of literacy has been met by a majority of persons within a given community, members of these communities are able to transform their economic earning power and, finally, transform the economic security and the culture of their communities.

The study of literacy in developing countries is of critical importance to developed countries such as the United States because certain areas of developed countries have characteristics that are similar to those of developing or underdeveloped countries. In his classic book, *Illiterate America*, Kozol (1985) compared impoverished areas of the United States to third-world countries. However, Kozol was among the first who demanded that literacy and education be viewed independent of the other. Unlike Tilak's (1989) position paper, Kozol believed that literacy was not a benchmark that could be used to illustrate when education was prevalent within the population. Instead, he began his book by separating the concepts of education and literacy, noting that it is possible to graduate from school and still not have attained basic literacy.

> Fifteen percent of recent graduates of urban high schools read at less than sixth grade level. One million teenage children cannot read above the third grade level.... Eighty-five percent of juveniles are functionally illiterate... Half the heads of households below the poverty cannot read an eighth

> grade book... Over one third of mothers receiving welfare are functionally illiterate… Of 8 million unemployed adults, 4 to 6 million lack the skills to be retrained for hi-tech jobs. (p. 3)

Kozol's (1985) book was noteworthy in respect to this central thesis where he demands that the separation between attaining a basic level of education and a basic level of functional literacy be acknowledged, as he believed that a person can participate in education without having obtained literacy. Moreover, Kozol called attention to the fact that literacy prepared a person for higher education and job placement; without literacy, it was probable that a person could graduate from high school and attain employment but would permanently be without the ability to improve his or her life. For Kozol, there the fundamental link between education and literacy existed, where education was intended to lead to literacy, but the quality of education delivered to many students was simply insufficient to successfully establish literacy.

Yet while Kozol (1985) and Tilak (1989) differed in respect to the factors that contributed to literacy, a major point of interest to both authors is that communities in which literacy rates are low are historically impoverished communities. Kozol argued that literacy cost the United States billions of dollars per year primarily because of lost productivity from illiterate workers and from the need to redo the labor of illiterate workers for other persons. These costs then reached up from the impoverished levels of American society to affect the more affluent communities. He wrote that "affluent people tend to look upon illiteracy with comfortable detachment," as illiteracy is an abstract concept for them due to their background and their exposure to literacy training at an early age (p. 110). In the past, affluent parents have worked to separate their children

from the children of lower-income families, believing that doing so could help protect their children from the lowered standards present in the classrooms that serve these students (Kozol).

> Yet the transformation of American culture suggests that there is mobility in educational settings and sophisticated parents, on the other hand, have started to perceive that isolation of this sort is seldom possible today and that, where it still seems possible, the price that they will later pay for such shortsighted selfishness is greater than the short-term flairs. (pp. 110-111)

When this occurs, the opposite of Tilak's (1989) tipping point theory is likely to occur, where a threshold for illiteracy, rather than literacy, might take place. This is one explanation why communities in which illiteracy is dominant over literacy tend to expand, rather than contract, if direct intervention (e.g., the gentrification of the neighborhood) is not implemented.

A further review of the research will be presented at a later point in this chapter to help clarify why participation in education is not tantamount to overall gains in literacy. Suffice to say, the literature on literacy in the United States and its status in respect to the prevalence of public education helps demonstrate that while education and literacy might be linked, they are not in a manner that suggests increased access to education leads directly to gains in literacy. Ignoring the problems of illiteracy or believing that an increased access to education will lead to direct improvements in literacy rates are thus not effective solutions.

Poverty and Literacy Rates in America

In Chapter I and in the previous section, it was noted that a common theme in the literature on literacy is that persons who are illiterate are more likely to be impoverished and less likely to obtain high-paying jobs. This section shall explore this theme in detail to demonstrate why attaining written literacy is a pervasive challenge in communities with impoverished or low-income populations, such as the Riverview Gardens School District.

Despite widespread acknowledgement of the importance of reading, statistics continue to show that high percentages of students struggle with reading. For example, the National Center for Education Statistics (NCES) found that 40 percent of fourth graders and 32 percent of eighth graders did not meet the basic requirements for literacy (Reed, Marchand-Martella, & Kolts, 2007). Seventy-four percent of those who were unsuccessful at reading in the third grade continued to be unsuccessful in the ninth grade. The lack of grade level reading skills by the end of third grade was likely to compound leading to academic failure as students progressed through the grades (Burns, Senesac & Symington, 2004).

As was observed in the description of the cultural adoption of reading in the United States as described by Sticht (2002), it is highly probable that literacy rates are linked to the socio-economic status of the student or the student's family. Luftig (2003) stated

> The issue of reading achievement for children and youth at economic and educational risk continues to be an important topic in education. Data continues to show that economically disadvantaged children regardless of ethnicity continue to

> experience difficulties in reading. Such problems in reading achievement have been shown to be predictive of later academic failure, including problems in mathematics and school drop-outs. (p. 1)

The role of the student's socioeconomic status should not be underestimated, as there are expectations attached to socioeconomic status in the United States (Sticht, 2002). Persons in the upper classes raise children with the expectation that these children will attain secondary or postsecondary education, and literacy is essential to these goals. The children are raised in a setting in which literacy is integrated into the daily routine even before the child is sent to school (Sticht).

Different socio-cultural expectations are attached to students from low income or impoverished communities. In 1986, Graff suggested "there were legacies of communal status that affected the level of literacy gained by the student, where the expectations of persons living within a specific community are passed on to the children within the community" (p. 61). This is similar to Kozol's (1985) argument that persons in affluent communities have a comfortable detachment from illiteracy because they maintain the expectation that their children will become literate. The children in low-income households, however, might be part of a community in which illiteracy is an accepted norm, and the legacy of illiteracy is maintained through cultural influences that dissuade a developing child from reading (p. 61). Graff suggested that impoverished communities have an outlook towards literacy that is incongruous with their lifestyle; illiterate impoverished persons recognize that literacy and education are necessary to make positive lifestyle changes but believe that they are unable to integrate literacy into their existing lifestyle. This is especially true in communities with a unique cultural identity,

such as that established by racial or other ethnic traits. Over time, literacy is transformed within the community from a desirable goal to a negativism, where pursuing literacy is seen by some as a betrayal of the norms of the community.

However, this is not a universally accepted condition. Even in circumstances where cultural norms suggest that the community has embraced a culture of illiteracy, leaders within the community strive to increase access to education and improve literacy rates among the community, especially among its children. Unfortunately, the adult members of impoverished and low-income communities tend to have obligations on their time that are not shared by persons in affluent communities. This is especially true if the adult caregivers need to prioritize other activities other than language literacy within the household, such as working multiple jobs to earn a living wage (Gray & Herr, 1998). Efforts to improve literacy within the community frequently run into barriers such as these, including the lack of resources available to the families to invest in early child care or materials that can help improve literacy (Duncan & Brooks-Gunn, 2000). Even if a parent does want to encourage literacy in their own children, this is difficult to achieve when the parent does not have basic education or basic literacy of his or her own (Kozol, 1985).

The outcome of poverty on children is significant and troubling. There are strong and consistent links between poverty and negative outcomes for children's physical health, mental and emotional status, and educational development. Ducan and Brooks-Gunn (2000) noted that

> in terms of physical health, the risk for poor relative to non-poor children is 1.7 times as high for a low birth-weight, 3.5 times as high for lead poisoning,

> 1.7 times as high for child mortality, and 2.0 times as high for a short stay hospital episode. (p. 188)

These outcomes are because of the lack of preventative care that is available for persons living at or near the poverty level, which creates an environment in which the child is at risk for childhood development problems and emergency care crises. Similar results are noted by Gunn with respect to academic achievement, where

> The risk for poor children is 2.0 times as high for grade repetition, and 1.4 times as high for having a learning disability.... For other conditions, these risk rations are: 1.3 times as high for parent emotional problems, 3.1 times as high for teenage birth, 6.8 times as high for reported cases of child abuse and neglect, and 2.2 times as high for experiencing violent crime… (p. 188)

Not all children born into poverty will experience these risks, but the risks are higher because of their status as members of an impoverished or low-income community. While the degree to which a child in poverty is impacted depends upon the number of circumstances experienced, the relatively low achievement of underprivileged students has been a concern of American educators (Forster, Grant & Hollas, 2002). Aristotle (2007) stated that disadvantaged students commonly fall behind their more advantaged peers as early as first grade.

The problem of motivating disadvantaged students to increase reading achievement is complex, as each student is unique and the conditions that have influenced a student's academic progress depend upon multiple factors associated with

in-school and out-of-school conditions. Quick and Schwanenfllugel (2004) stated in their analysis of supplemental remedial reading programs that

> Enhancing motivation to read is important for several reasons: First, children who are motivated to read are more likely to spend more time reading, which has been directly linked to improved reading achievement second, scales of reading motivation account for approximately 10percent of the variance in reading performance measures Thus, improvement in reading motivation in children who are having difficulty learning to read seems important in mediating the predictable cycle of frustration, failure, and avoidance that is typical amongst young struggling readers. (p. 12)

Here, the challenges associated with motivation suggest that students who are receptive to encouragement and can be motivated will engage in a self-propagating cycle of literacy success. Students who demonstrate aptitude and ability and receive encouragement for their progress are more likely to engage in desired behaviors that promote ongoing literacy (Quick & Schwanenfllugel, 2004). It is necessary to communicate to students that literacy is an act worthy of the investment of time and effort required to make progress, as motivation appears to be essential to students' academic success. Faced with repeated failure, students with minimal reading skills often lose self confidence and the motivation to keep trying (Webre, 2005). Typically, students from disadvantaged families enter school with minimal exposure to books, poems and even nursery rhymes (Webre). Such problems in reading achievement have been shown to be predictive of later academic failure. Webre also stated many of these students often lose self confidence and the ability to feel successful and, as a result, often become

passive learners because of repeated experiences with failure. Over time, repeated experiences generate increased negative attitudes, beliefs, and expectations. Teachers should be encouraged to consider motivation in terms of students' perceptions of the value of the learning task and their ability to succeed (p. 292).

A second study examined the efficacy of reading improvement and motivational programs to ascertain whether such programs can help struggling readers become motivated independent readers. Researchers categorized the literature on motivation in literacy and the impact of motivation on student achievement by assessing the following themes: (a) standardized testing, (b) teacher quality, (c) after-school program, (d) parent involvement, (e) reading and study skills, (f) computer games, and (g) simulations. The literature demonstrated that no one area or program was able to consistently motivate students to engage in academic improvement. The researchers concluded that no single research study, teaching method, or reading strategy will have the same impact as an array of strategies implemented by a number of constituent groups working together in cooperation to achieve a common goal (Flowers, 2007). Unfortunately, the resources required for investment in a single reading literacy program are expensive and require an in-depth transformation of the pedagogical culture in which multiple programs need to be implemented. As many of these transformations must occur outside of the school, it is necessary to incorporate these external domains into any multi-program strategy designed to improve literacy. Literacy is critical for success in today's world as technological advances place an increasing demand on higher levels of reading than ever before (Burns & Senesac, 2004). Advances in identifying the cultural components of literacy have not, however, led to any real gains in improving literacy rates within the United States.

The Emergence of Constructivism and Comprehension Instruction in Literacy Research

Until the early 1980s, exploration into literacy and language comprehension tended to follow an autonomous model wherein literacy was treated independent of social context, an autonomous variable whose consequences for society and cognition can be derived from its intrinsic character (Street, 1993). The autonomous conceptualization of literacy is what is still used as the dominant model in most forms of public education wherein literacy is perceived as a concept that can be taught in isolation and without connection to a broader spectrum of events. Yet in the 1980s, researchers and pedagogical theorists began experimenting with the ideological model of literacy in which literacy was a construction generated not from facts but from context (Street, 1993). The study of language, particularly the acquisition of second languages, was a major reason that the ideological model began to take shape, as researchers noted that it was easier for language learners to acquire information if they were able to incorporate it into an existing framework (Street). Barriers to language acquisition were soon identified as a consequence of treating language as an autonomous construction; when language was made relevant and applicable to the student, it became more accessible and could be integrated into the students' existing framework.

Studies into literacy began to address these same principles in order to identify where the limits on comprehension and cognition were found. Clay (1993) found that early literacy achievement was treated as systematic and followed a dominant behaviorist paradigm. Within the behaviorist model, each piece of information was given to the student and used in a gradual progression of information when the students built upon known information by adding new or unfamiliar information to the framework (Clay).

Through applying a constructivist paradigm instead of the behaviorist model, students could help expand their comprehension of information by constructing information that is related to literacy in context, not just the independent elements that comprise words, sentences, and paragraphs (Yager, 2000).

The most important aspect of literacy as a component-based process, Cooper (1993) wrote, was recognizing that language was not an a priori concept. Cooper (1993) suggested that literacy using a constructivist approach helped demonstrate the significance of literacy within basic setting rather than suggesting that language could be imparted to a student without introducing a setting or a corresponding framework. This framework could be part of the learner's primary cultural or social setting, such as the language that was spoken at home, or could be part of an auxiliary setting, such as students who acquired basic literacy while also learning the vocabulary of a second language. When it was recognized that the learner attempted to integrate language into his or her existing socio-cultural framework, it enabled the student learner to apply the formative basics of language construction to the written word. Subsequently, Cooper (1993) argued, written literacy and oral literacy should not be approached as separate constructions but rather needed to be examined as part of a process in which learning one served to compliment learning the other.

Within the constructivist model, literacy is achieved through comprehending the context of the word or the passage. Au's (1998) article, "Social Constructivism and the School Literacy Learning of Students with Different Backgrounds," argued that literacy is a process, not a skill. To fully comprehend the written word, the student needs to develop an understanding of the elements of oral, social, cultural, and economic literacy.

In order to develop literacy, Au believed that schools need to incorporate "the goal of instruction, the role of the home language, instructional materials, classroom management and interactions with student, relationships with the community, instructional methods, and assessment" (p. 297). If these are left out of the educational process, Au stated that students are learning literacy as a separate concept, not as an expression of culture. As literacy is inherently an expression of one or more forms of culture, separating the idea of literacy from the knowledge that literacy functions within these diverse but interconnected concepts therefore reduces the likelihood that the student will understand this information, and thus the student's comprehension of literacy will decline (Au).

Comprehension instruction has also been singled out as an important and overlooked aspect of literacy. Research into literacy, Duke and Pearson (2002) suggested, has recently been framed in terms of comprehension of content. For written literacy, learners are more likely to develop an engaged literacy when they adapt techniques that can be applied to the printed word as follows:

> Good readers are active readers. They have clear goals for their reading... They constantly evaluate whether the text is meeting their goals…Good readers look over the text before they read, noting the text and text sections that might be most relevant to their reading goals... Good readers frequently make predictions about what is to come… Continually making decisions about their reading, what to reread, and so on... Good readers construct, revise, and question the meanings they read... Good readers try to determine the meaning of unfamiliar words, concepts, and deal with inconsistencies or gaps... Compare, and integrate their

> prior knowledge with the text…Think about the authors of the text, their style, beliefs, and intentions...Monitor their understanding, making adjustments in their reading… Evaluate the text's quality and value, and react to the text both intellectually and emotionally…Good readers read different kinds of text differently. When reading narrative, they attend closely to the setting and characters…When reading expository text, they conduct and revise summaries of what they have read…For good readers, text processing occurs not only during reading but also during short breaks taken during reading...Comprehension is a consuming, continuous, and complex activity, but for good readers, is both satisfying and productive.... (pp. 205–206)

This list helps illustrate the single greatest problem in teaching literacy, Duke and Pearson (2002) continued, because the qualities that make a good reader appear difficult to imbue into the average student. The list reveals traits that imply that good readers are not made but are born, in that the skills that need to be applied to literacy are not merely procedural or formulaic but involve a deeper penetration of written content through becoming involved in the material. In this, Flowers (2007) agreed and suggested that developing literacy is similar to the development of an appreciation for art, in that the student must learn how to appreciate the whole of the piece in order to absorb its full intent. If this does not occur, then the student might acquire some or even most of the intent of the written piece or the author's purpose in writing it, but the sum of the written material will remain elusive.

Using this list as the starting point, Duke and Pearson (2002) then proceeded to argue that literacy should be subjected to the same discussions that have been applied to

language acquisition, where literacy should not be taken as the end result of teaching a student to read but is instead a separate skill altogether. In order to improve literacy, it is necessary to identify that a student's comprehension of written text must be balanced. Duke and Pearson believed that it is not enough to just offer good instruction in reading and in language and content acquisition, but that students need to receive comprehension instruction. Comprehension instruction, they write, is used to help train students to develop literacy and can be used simultaneously with other desirable skills learned within the classroom, such as building vocabulary, spelling, and grammar. In comprehension instruction, the objective is to do more than simply include instruction in specific comprehension strategies and opportunities to read, write, and discuss texts – it connects and integrates these different learning opportunities (p. 207). Duke and Pearson (2002) stated that model of comprehension instruction would incorporate the following five components:

1. "An explicit description of the strategy and when and how it should be used" (p. 208). The authors suggested that teachers need to instruct students in how the language lessons need to be applied, and that these should invoke qualities that are not typically approached in reading classes, such as asking the students to make predictions about future events based on the content of the text read thus far.
2. "Teacher and/or student modeling of the strategy in action" (p. 208). The teacher must lead by example. If predictive processes are the purpose of the lesson, then the teacher must say, "I am going to make predictions while I read this book. I will start with the cover here. Hmm… I see a picture of an owl. It looks like he –

I think it is a he – is wearing pajamas, and he is carrying candles. I predict it is going to be about this owl, and it is going to take place at nighttime" (p. 208).

3. "Collaborative use of the strategy in action" (p. 209). Duke and Pearson (2002) suggested that the class participation in the group strategy will help encourage students to recognize the value of a comprehension process and allow the students to collaborate and enhance these skills in themselves and their peers.
4. "Guided practice using the strategy with the gradual release of responsibility" (p. 209). Over time, the teacher gives the students greater autonomy to control their reading. This is contingent upon the students' mastering the skills that are necessary to cultivate independent literacy. Through these processes, the teacher helps the students learn how to read independent of continual supervision.
5. "Independent use of this strategy" (p. 209). The goal of a model of comprehension instruction is to promote independence in reading. Students should be able and willing to engage with printed text without teacher guidance, which in turn facilitates their skills as independent readers. The teacher will be able to evaluate this process by asking the students to complete projects (book reports, etc.) that are completed outside of the classroom.

Duke and Pearson (2002) recognized that teachers have to gradually facilitate independence in reading and reading comprehension among their students. This is a process that relies heavily upon the students' initial interactions with written text as guided by the educator. If the teacher selected appropriate content and guides the students in appropriate literacy comprehension strategies, then the student will be able to apply these independent of monitoring or oversight. In order to accomplish this, the teacher

needs to choose texts that are suited to the students' reading levels, assess the students' self-motivation, and predict barriers for learning before these arise. In respect to the latter, the teacher also needs to become familiar with each student's individualized learning habits so that the student's strengths can be used to enhance the reading comprehension process and the weaknesses minimized in lesson plans (Duke & Pearson, 2002).

Unfortunately, comprehension instruction has not received significant attention in the literature on literacy due to inherent challenges in implementation. As the original 16-item list provided by Duke and Pearson (2002) demonstrated, comprehension instruction is a challenging and involved process. Researchers seeking to successfully implement comprehension instruction in the classroom have found that there are barriers that prevent this from occurring. Richardson, Anders, Tidwell, and Lloyd (1991) found that the teachers' personal beliefs and practices preclude them from successfully implementing comprehension instruction in the classroom, especially when the teacher was expected to deliver text-based content to the students that was in conflict with his or her own beliefs and attitudes. This was attributed to the degree of personal involvement that a teacher has to invest in comprehension instruction, as the content of the text is a critical aspect of successful communication. When the teacher does not value or endorse the text, then it appears less likely that he or she will be able to successfully communicate strategies designed to appreciate its content to the students.

However, whether teaching comprehension instruction is intended for students at the primary school level is a matter of controversy (Mastropieri, Scruggs, & Graetz, 2003). The amount of time and effort that is invested in comprehension instruction is

taxing for both the students and the teacher (Mastropieri et al., 2003). While comprehension instruction has proven highly effective in promoting literacy among older students, it is not certain whether comprehension instruction is appropriate for younger students (Mastropieri et al., 2003). In this sense, comprehension instruction is part of the constructivist model of teaching literacy, but the components that lead to comprehension must be in place (e.g., spelling, grammar, and vocabulary) before this occurs. However, if this is the case, then it is highly likely that the student will pass through elementary school without receiving comprehension instruction, which Duke and Pearson (2002) believed is the fundamental period to learn literacy. The article by Mastropieri et al. was written to address the problems experienced by struggling students who had not mastered literacy comprehension in their normal coursework, suggesting that these students might have benefited from comprehension instruction at an earlier period in their academic careers. Nevertheless, researchers are still striving to make sense of the applicability of comprehension instruction and which students are most likely to benefit from it (Mastropieri et al., 2003).

Assessment of Reading Programs

There are multiple reading and literacy improvement strategies currently functioning in the United States. One literature review of these programs reported that no fewer than 40 major programs were in place in public education, making it impossible to count the number of programs that had fragmented off of or been adapted from these major programs for the purposes of a single school or classroom (Duke & Pearson, 2002). Subsequently, it is impossible to provide a description of all reading programs currently in use in the United States, or even of the 40 major programs that are in widespread use.

The literature will instead concentrate on selected programs that are designed to help improve literacy among student learners. These are the Reading Recovery program, strategies using recorded books, strategies that use improved Information Technologies, and literacy events in the school and community.

Reading Recovery. The intervention RR is well established as an individualized supplemental first grade reading intervention program designed to accelerate progress for the lowest achieving students. Fitzgerald and Ramsbotham (2004) believed the key focus of RR instruction is the development of cognitive and strategic processing systems that integrate meaning, visual, and sound cues while reading. Aristotle (2007) stated the RR program is based on several assumptions: (a) reading is a social activity, (b) reading is more than the behavior of reading words, (c) children begin to read by attending to printed text, and paying close attention to when they are learning to read Children are supported in the development of effective reading strategies, which are systematically noted, analyzed, and interpreted by the teacher. Using RR's thirty minute daily lessons, teachers provide individualized instruction that is continually sensitive to the particular child's strengths and weaknesses. The lessons follow the following standard format:

1) Rereading familiar books;
2) Taking a running record of an oral reading of the previous day's new book;
3) "Making and breaking," letter and word work using letters on a magnetic board;
4) Writing, during which the students composed one or two sentences and then analyze the sounds in words to build a vocabulary of known words; and
5) Introduction of a new book and oral reading of the book. (Fitzgerald & Ramsbotham, 2004).

With RR, the instructor maintains daily lesson records, including titles of all books read, letters and words that were studied, and observational notes made concerning the students. A running record, ongoing scores tracking how many words students read correctly, of daily oral text reading is kept for diagnostic purposes. As the student reads, the teacher notes all errors, including substitutions, omissions, and re-readings for diagnostic purposes. Greenlee and Brunner (2001) noted in a recent analysis of one-to-one reading programs for struggling readers that one-to-one interventions place severe practical limits on the number of students who can receive supplemental instruction. Not all children have been equally effective applying RR. D'Agostino and Murphy (2004) reported that approximately 35 percent of RR students in their sample did not reach average reading levels. In a comprehensive review of RR, Greenlee and Brunner (2001) estimated that between 10 percent and 30 percent of RR students do not experience acceleration and are dismissed from the program for various reasons. Unfortunately, there has been little effort to systematically study children who have not succeeded in this intervention (Hicks & Villaume, 2001).

Recorded books. For many young children and poor readers, a substantial time lag exists between when they see and say a word. This lapse produces slow, laborious reading that makes comprehension all but impossible. It is terribly difficult for students to recall what a passage was about when they have to spend so much effort figuring out the meaning or the pronunciation of each word (Carbo, 1996).

The Marie Carbo Reading program utilizes recorded books to help students improve their reading skills. Listening to recorded books has been shown to raise students' reading skills because of the verbalization of printed words at the correct pace,

proper phrasing, and expression. Students made fewer reading errors thereby diminishing the possibility of forming incorrect reading patterns (Carbo, 1996). Books are recorded in small segments so the student can listen and follow along with the reader. Each segment is replayed as many times as the student believes necessary before reading the portion back fluently to the teacher. Carbo (1996) has stated, "To be most effective, recorded books should be at the student's reading level and close to, or even slightly higher than, the student's language-comprehension level" (p. 3).

Carbo (2008) wrote words presented within high-interest books tend to be easier to learn and retain than when words were presented in isolation. High-interest books refer to books that have colored text and images as opposed to monochromatic, text-centered printing. Students decide the number of times to listen to a recording before they read it aloud giving them control of their own learning (Carbo, 1997). Another benefit of recorded books is each teacher's ability to record books from the classroom library or the school library without purchasing required books just for the program. Teachers can individualize this program to assist one student or the whole class. To judge whether a chosen book is of the appropriate level for a youngster, Maria Carbo (1996) has suggested these two rules:

> (a) students should not be able to read a book fluently before listening to the recording; and (b) after two or three times listening to a book recording, students should be able to read the passage back smoothly, without more than two or three errors. (p. 58)

Many students, especially at-risk readers, have strong learning needs and preferences that do not match traditional classroom environments or traditional methods of teaching.

Young children and at-risk readers in particular tend to be global, tactile, and kinesthetic learners. These children prefer and do well in classrooms that allow for movement, have some comfortable seating and varied lighting, and enable students to work with relative ease in different groupings (Carbo, 2008). Most important, research indicates that when students' environmental preferences are met, they are more likely to associate reading with pleasure, to read for longer periods, and, overall, to achieve higher scores in reading.

Computer-based reading program. The Accelerated Reader (AR) is a computer-based reading and management program designed for students in grades K-12 (Cuddeback & Ceprano, 2002). Ruby K. Payne (1998) stated in her book *A Framework for Understanding Poverty*

> Many schools have gone to the concept of an Accelerated Reader, a computer-based management program that provided tests to take over the book(s) they have read. Students were encouraged to read more. The program was designed so that students were not penalized for what their parents know or cannot provide for them. (p. 94)

In their study Cuddeback and Ceprano, 2002 affirmed

> The goal of AR is to provide measurable reading practice time for each participant. It purports to supplement any class-based reading curriculum by providing the teacher and each student in the class immediate feedback on how well reading material has been comprehended. (p. 89)

The data from the Accelerated Reader program measures three aspects of student's reading practice: quantity, quality, and challenge. Quantity is defined as the number of books read and the number of points earned. Quality is indicated by how well

students score on AR tests. The level of challenge refers to the relationship between the difficulty of books read and the student's tested reading ability (Cudddeback & Ceprano, 2002, p. 89). The AR program contains six components as follows: (a) sustained silent reading (b) appropriate reading level (c) free choice of books (d) reading comprehension tests (e) earning points, and (f) extrinsic rewards (Haycock, 2005).

The AR computer system is easy to implement. At schools that integrate the AR software, each computer in the school is equipped with AR software. Computer tests for AR are ordered for books previously purchased, and as new books are acquired, additional computerized tests are purchased. Each test costs approximately two dollars. There are over 27,000 books, both fiction and nonfiction, at different reading levels in the program. Books are easy to locate because each book is identified as an Accelerated Reader with its reading level, and the points to be earned for that particular book are well marked, such as Reading Level 4.5 Points 4.0 based on the length and difficulty of the book. The Reading Level 4.5 indicates the book is at the fourth grade fifth mouth reading range, and Points 4.0 indicate the students can earn four points by scoring a passing grade on the quiz.

Once students have access to the system, they select and read books in their reading zone. After reading the story at least once, the students take a computerized multiple choice test which usually contains ten to twenty questions. The test measures students' knowledge and comprehension of the story. After completing the test, the students are given immediate feedback regarding their score and questions answered incorrectly. The students earn points based on the difficulty level and how many

questions were answered correctly. The points accumulate to make the students eligible for a number of prizes.

The management system for AR allows teachers to create reports to track students' progress, number of books read, number of questions answered correctly, and number of points earned. Teachers can be fairly sure that students have read and basically comprehended the story with Accelerated Reader test products. Accelerated Reader provides continuous assessment and accountability for literature based reading, (Nummery, Ross & McDonald, 2006).

Proponents of AR believe that if used correctly, AR developed reading habits could provide students with a better quality of life, not just in school but outside of school, that will last a lifetime. Avid readers

> Chose to read because reading gave them pleasure.…Were skilled at finding books they wanted to read…Discussed books with friends…Discovered favorite authors and illustrators and sought out books by these writers and artists…Adjusted the rate at which they read, slowing down to enjoy the good parts and speeding up for the background information…Chose when and where they read and for what purpose…Re-read favorite books, and…Received no extrinsic rewards for reading. (Lamme, 2003, p. 37)

However, researchers do not all agree that AR motivates students. There was no difference in reading motivation between fourth-grade students who participated in Accelerated Reader with reading-related or non-reading -related rewards or even no rewards or incentives. Interest was affected by choice, characteristics of books, personal interests, and knowledge gained from books. Activities that motivate children to read

included giving children books, reading to children, and sharing books with children (Haycock, 2005).

A second computer-based reading program, Reading Counts (RC), is intended to boost reading ability and help develop a love of reading. This program provides leveled, measurable, independent reading practice for K-12 students (Hunter, 2005). The research showed

> Reading achievement is positively related to the amount of time students spend reading…. Students develop vocabulary and concept knowledge through extensive reading.… The best way to strengthen reading skills and foster the reading habit is to see that students get reading practice with books that were carefully selected and matched to reading level and interest…. Motivation is essential for maintaining students' sustained attention to reading…. In an effort to build comprehension skills, students read widely, respond to questions and talk about what they read…. Helping struggling readers requires a supportive literacy environment as part of a carefully planned intervention program…Families and communities have an important role in helping students become successful readers and…. Assessing and evaluation were necessary to monitor progress and adjust instruction. (Rush, 2004, pp. 37-38)

Over 36,000 different titles are features for RC, both fiction and nonfiction, at the different reading levels in the program. Each book is labeled RC on the spine, and the Lexile level and points were given for that particular book. Once students have access to the program, they select a book. After reading the book, a computer-generated quiz is taken independently providing the child with instant feedback. Instant, data-driven

reports are maintained by the computer for each student to keep educators informed (Rush, 2004). Teachers access the reports to monitor the progress students have made and decide when their intervention might be required. RC empowers students to read by allowing them to select topics of interest and the ability to generate reading lists at their Lexile level. Getting students excited about reading is more than half the battle. When students are motivated to read, they work harder to improve their skills. Even students who have had trouble reading in the past could still have the chance to succeed (Hunter, 2005).

Literacy Events in Schools and Communities

Schools and communities have found that it is possible to supplement the information from classroom literacy instruction with school-wide events that focus upon literacy. One such program, Project Reach Out and Read (ROAR), incorporates the community into the program through assisting the parents of kindergarten children to learn in-home activities that promote literacy and school success for their children (Gilliam, Gerla, & Wright, 2004). Project ROAR was designed to introduce the parents to basic techniques they could use with their children to assist in literacy development. Each participant was given ten dollars every time they attended a session. The project was divided into ten sessions titled respectively:

1. Introduction to the Program
2. Importance of Parent Involvement in Reading
3. Using the Public Library in Reading with Children
4. Storytelling in the Home
5. Choosing When, How and What to Read to Children

6. Making and Using Puppets in Reading and Storytelling
7. Making and Using Literacy Games with Children
8. Using the Newspaper and Circulars in Literacy Activities
9. Reading and Writing Poetry
10. Interviewing parents and group sharing. (Gilliam, Gerla, & Wright, 2004, p. 228)

The purpose of ROAR was to create a progressive, ongoing setting in which parents recognized the value of literacy for themselves and their students and helped foster an environment in which literacy was promoted. ROAR also had additional familial benefits because as parents learned in-home activities, they increased their interaction with their children. In one research study for ROAR, the target groups for this study were the parents of kindergarten students, but the researchers found that older students within these families began to demonstrate similar increased access to literacy (Gilliam et al., 2004). As the parents practiced with the kindergarten children, the older students also demonstrated increased improvement in their attitudes towards their personal academic achievement.

These benefits were witnessed not only in older children but within the family unit as a whole. The researchers observed that parents began taking their children to the public library and scheduling a reading time each day for the family at which time the television set was turned off (Gilliam et al., 2004). Participating in the program also helped some family members with their own learning. Thirty years of research shows that greater parental involvement in children's learning is a critical link to achieving a high quality education for every student (Jayroe, 2005). This positive relationship between

student achievement and parent involvement indicates a general direction for intervention. However, working with the simple notion that increasing parent involvement leads to increased achievement may be problematic for children with serious educational needs. This concern is based on the fact that parent involvement generally is a nonspecific intervention (Powell & Shinn, 2000).

One of the findings of ROAR is that parents are often unaware of the repercussions that their involvement in their children's lives can have upon their children's academic progress. The community event helped inform parents of at-risk students that there are positive outcomes associated with participating in literacy activities with their children. Furthermore, it was recognized that family members who participated began to take on a sense of responsibility for their children's academic achievement (Gilliam et al., 2004). Jayroe (2005) stated, "If educators expect more children to be successful in literacy experiences at school then they must strive to form lasting partnerships with parents" (p. 235). The need to involve parents into literacy programs is therefore significant and requires additional attention in the classroom.

Chapter 1 Reading Program

Determining the effectiveness of the Chapter 1 reading program was the target of a study by Alawiye and Williams (2005). The objective of the Chapter 1 Reading Program is to support schools and design remedial programs that assist low-achieving students in attaining academic parity with their grade level counterparts (Alawiye & Williams). The major strengths of the projects were identified, such as promoting self-esteem, fostering a love of reading, and providing specialized instruction. Problems identified included establishing a good working relationship between Reading Specialists

and the classroom teacher. Another dilemma was that the number of students who qualified for the program exceeded the number of students one Reading Specialist could help effectively. This problem is not atypical of such a population. Some researchers have concluded that students in the Chapter 1 reading programs make normal gains on standardized tests when compared to students who were exposed to only the regular curriculum and not served by the Chapter 1 program (Alawiye & Williams).

Many Chapter 1 programs rely on pull out schemes, which target remedial programs that are provided to low income families and low performing students. Usually, these programs provide additional instruction for the struggling students in reading, math, and language arts. Students are pulled out of the regular classroom to work with a Reading Specialist alone or in a small group for remedial reading instruction. Opponents of the pull out program believe the students are being isolated from the other students. Supporters of the program cite research indicating that after two years of instruction, students in the pull out program achieved improved growth in reading skills (Alawiye, & Williams, 2005).

After School Tutoring Programs

Three societal concerns have contributed to the recent growth in after-school programs: the lack of caregivers in the home after school, the belief that economically disadvantaged children can improve their learning given more time and opportunities, and the high rate of crime after school. Researchers of after-school programs also have indicated that, in comparison with middle-income children, low-income children are more in need of after-school opportunities and more likely to benefit from them. The history of after-school programs suggests that the current emphasis on after school

tutoring is due to the perceived failure of societal responsibilities to children, particularly within the family (Lauer, Akiba, Wilkerson, Snow, & Martin-Glenn, 2006).

As a way of addressing the growing number of students in need of individual reading support and to further their reading instruction, a school district in Philadelphia created Title One after School Tutorial program (TOAST). The overall goal of this program was to provide students with instruction and practice that was necessary to achieve higher academic performance (Sanderson, 2003). The after-school program was held two afternoons a week. The teachers attended staff development training to develop the rationale, objectives, and the framework for the tutoring program. Teachers decided that the primary focus would concentrate on three areas in which students needed extra academic assistance: reading comprehension, word recognition, and phonemic awareness (Sanderson). Collected data confirmed that with the after school program, students increased their sight word vocabulary, learned additional literacy skills and strategies for what to do when reading, and strengthened their comprehension abilities (Sanderson).

Helping One Student to Succeed (HOSTS) was a structured comprehensive literacy program intended to supplement curriculum being delivered in the classroom. Burns and Senesac (2004) stated, “Tutoring, as a supplement to classroom teaching, is generally considered the most powerful form of instruction for increasing reading achievement of underachieving students” (p. 89). The objective of the Helping One Student To Succeed tutoring program is not to replace general education instruction in reading, but rather to supplement it. The program delivers structured mentoring to a child who is identified as a struggling reader. The program focuses primarily on kindergarten through sixth grade students who are at risk of failure. The teacher delivers a structured

intervention to only one student. Instructional materials used are designed to match the individual's learning needs, developmental level, and interests. The goals include improving reading, writing, vocabulary, thinking, and study skills of the students (Burns & Senesac, 2004).

Current research and innovative studies have produced evidence that tutoring works. Additional research has found that tutoring results in improvement in reading comprehension, word recognition, and student attitudes towards reading. More specifically, surveys of targeted groups of students who were tutored in reading have shown significant improvement in students' motivation to read, self-confidence as readers, and their views of their individual control of their reading abilities (Sanderson, 2003). During tutoring, students worked in small groups, which created a relaxed environment in which to learn. The learners' strengths and weaknesses were identified so the tutoring could be targeted to meet the needs of the individual. In addition, when children were participating in the tutoring program, they were supervised and not home by themselves. After school programs were an important first step in the process of changing not only how teachers educate children but how the school and community must come together to ensure their success (Sanderson).

Evaluating Remedial Reading Programs

The assessment of reading programs is critical in demonstrating effectiveness. Remedial reading programs help to improve reading skills through a variety of instructional methods, as demonstrated by the range of programs reviewed here. The most important factor in improving reading efficacy is that the program must make gains in reading skill explicit to the students so that they are able to observe progress toward

personally relevant reading goals (Quirk & Schwanenflugel, 2004). “There are four key questions that can help in evaluating the effectiveness of a reading program:

> (a) Were reading materials interesting to students....? (b) Did students read fluently....? (c) Was reading modeled sufficiently....? (d) Did students comprehend at high levels what they read?” (Carbo, 1997, p. 64-68)

Several commonalities are found in all programs that have demonstrated significant or partial success in motivating students. The literature has shown that students make faster progress in reading if they are interested in what is being read. It appears that students need to feel interested, fascinated, and excited about the material if they are to become engaged in the content. Teachers also need to feel enthusiastic about the reading material in order to convey their own enthusiasm to students (Carbo, 1997). Students who struggle as they decipher words are unlikely to become motivated or competent readers. Fluency enables children to concentrate on the meaning of what they read rather than on the process of figuring out words. Quirk and Schwanenflugel (2004) stated improving reading fluency requires students to learn with reading methods that capitalize on their strengths and teachers to use many methods that model good reading.

Many students come to school having little experience with books, so it is vital that reading is modeled for them. This is essential especially for struggling readers. Non-fluent readers needed to spend most of their time hearing and seeing good reading modeled. Students can follow along in their books as they listen to a story to build fluency (Haycock, 2005). As students become fluent readers, the next step is to evaluate comprehension. Students need to be able to summarize, analyze, interpret, evaluate, identify, and predict. A high level of thinking skills need to be learned and practiced

throughout the school, whether or not students are fluent readers. These experiences are especially important for underachievers (Haycock). Evaluation is not an end-of-the-year event. It needs to be ongoing throughout the school year so that reading programs constantly improve (James, 2006).

Summary

The objective of this chapter was to investigate reading intervention programs. The literature on literacy and the programs designed to increase literacy were designed to provide additional instruction to students experiencing difficulty improving their reading. Each program was research-based and was beneficial to some of the students. Some programs incorporated motivational theory as part of the program's design, and in others, the research indicated that the program was successful in motivating students even though motivation was not a stated goal of the program.

In chapter three, the method for conducting this investigation is examined. This study covers a two year period, the 2004-2005 and 2005-2006 school years. The data from each individual year of the study will first be presented and then analyzed.

Chapter III - Methodology

The purpose of this study was to compare the reading levels of disadvantaged students who participated in the AR program with the reading levels of disadvantaged students who participated in the RC program to determine which program produces significantly improved reading skills as measured by SRI, a computer-adaptive assessment. In order to provide an accurate comparison of the data, students from the Lewis & Clark Elementary School and the Moline Elementary School received instruction using these programs. The schools have similar student populations in respect to overall size, geographic location, and socioeconomic backgrounds. This chapter provides a description of the method, instrument, and procedures used to gather and analyze the data.

Method

The method selected for the study was a non-experimental concurrent quantitative research method. The design was a multistrand research experiment in which quantitative data were collected from two distinct sample populations and the results contrasted for similarities and differences. The similarity contrast principle was applied to two separate units for analysis. During the comparison process, differences and similarities between the data were identified, analyzed, and presented. As the study took place at two different times, the comparison properties helped to clarify the four specific data sets used and the comparisons that were made between these data sets.

The method was selected as appropriate for the study because of the goal of the research experiment: to identify which reading program had the best overall positive impact upon the reading abilities of students over time. Two specific sample populations

consisting of students from the Lewis & Clark Elementary School and the Moline Elementary School were identified as having multiple points of comparison including size, geographic location, historical performance on academic test scores, and the demographic composition of the student bodies. There were 112 children who participated in the investigation the first school year. Eighty-four children were involved in the second study during the second school year. The students ranged from nine to twelve years of age. The process of determining effectiveness was achieved by comparing and contrasting scores generated by the SRI. These scores are supplemented through demographic data (e.g., age, race, gender) collected by the two schools during two distinct time periods. Subsequently, the comparison process of two specific sample populations during two specific times through a concurrent qualitative analysis strategy helped demonstrate which reading program resulted in the best overall improvements for the sample.

Instrumentation

Instrumentation for the study was the SRI offered to students to test progress in reading, namely information acquisition and comprehension. The SRI was considered an appropriate instrument as it is used to determine the mechanics of students' reading abilities, the degree of comprehension and retention a student applies to written text, and an expository test that can be applied at varying levels of student academic performance (Reed, Marchand, Martella, & Kolts, 2007). The SRI is measured in the Lexile Levels and typically administered once per quarter during the school year for the purposes of identifying and analyzing students' progress in reading.

The purpose of using the SRI as the instrument in the study was to offer results in a format that was familiar to administrators and teachers active in education, thus encouraging them to identify the significance of the findings through an accessible format. Convenience was a second reason for using the SRI as the appropriate instrument, as the students' reading comprehension was evaluated through the SRI at multiple points throughout the academic year.

Application of the SRI was done by using a computer-adaptive version of the test. The computer-adaptive version was selected due to its applicability and convenience of analysis; analysis strategies for purposes of comparing and contrasting data are built into the computer model of the SRI. No data is available on the analysis procedures that are used in the instrument's computer-adaptive version. When the SRI is administered by using a computer-adaptive version, a series of reports are generated and made available for testing and assessment purposes. These reports are the Intervention Grouping Report, Student Action Report, Growth Report, and the District and School Proficiency Report (Renaissance, 2008). Thus, the computer-adaptive version is useful as an instrument that can be applied not only to a single student or a single student population within a school but can facilitate comparison of student populations.

Instrumentation is also associated with the AR and the RC programs. Although AR and RC are both computer-based reading motivational programs intended to boost reading ability and help students develop a love of reading, the programs differ in procedures. AR employs a standard reading level scale; an example would be 4.5, meaning the reading level of a student presently in 4th grade

5th month of the school year. In contrast, the RC uses Lexile Levels Framework to match the students' reading ability and text difficulty. Lexile Framework is a research proven system for measuring students' reading levels and matching readers to text. The Lexile is unique because it uses a common metric to evaluate both reading ability and text difficulty. By placing both reader and text on the same scale, the Lexile allows educators to forecast the level of comprehension a student will experience with a particular text and to evaluate curriculum requirements based on each student's ability to comprehend the materials (Reed, Marchand, Martella, & Kolts, 2007). Both instruments are integrated into the respective supplemental reading instruction programs and are not subject to interference or manipulation by the researcher in the context of this study.

Sample

The sample population of this study was comprised of 196 fourth grade students attending public education in the RGSD, a suburban district in St Louis County, Missouri. The district was composed of eleven elementary schools, two middle schools and one high school. The Lewis & Clark Elementary School and the Moline Elementary School were selected for the study on the basis that the student populations in these schools were comparable in terms of size, socio-economic status, and ethnicity of students.

During this two-year study, 100% of the fourth grade students from Lewis & Clark and Moline School participated. During school year 2004-2005, the sample population was comprised of 112 students, 59 were enrolled at Lewis & Clark and 53 were enrolled at Moline. During school year 2005-2006, the sample population was

comprised of 84 pupils, 43 were enrolled at Lewis & Clark, and 41 were enrolled at Moline. The sample size for both years reflects a non-random selection of students from the fourth grades. All students in the fourth grade were eligible for inclusion in the study, indicating that 100% of the fourth graders in both schools (enrolled during both the pretest and the posttest each year) were included in the sample population. However, the school district reports high mobility of its student population due to factors such as parents changing jobs, better housing opportunities, and so forth; even while students might remain enrolled in the same school district, they might have moved out of one elementary school to another. Due to the problem of the high mobility rate in the district, fourth grade students were excluded from the study if they moved into or out of the sample populations by enrolling in the school after the pretest or by leaving the school before the posttest.

The demographic data for the research study pertains to the characteristics of the sample including enrollment ethnicity, the percentage of students who receive hot lunches at the elementary schools, and the rate of pupil attendance for these schools. The data demonstrates that a large proportion of students at both schools are of African American ethnicity, 99 percent at the Lewis & Clark Elementary School and 98 percent at the Moline Elementary School, respectively. When the data is compared to the enrollment ethnicity that is found in the general population of Missouri public schools, the data demonstrates that the RGSD has a disproportionally high number of students of African American ethnicity when compared to the student population throughout the state.

The demographic composition of students served by the Lewis & Clark and Moline schools is comprised of primarily a lower social economic minority population. The population of both schools consists of mostly African American children. Both schools had at least 91 percent of children who received free or reduced priced lunches and 93 percent of pupil attendance. Luftig (2003) stated economically disadvantaged children experience difficulties in reading; such problems in reading achievement have been shown to be predictive of later academic failure, including problems in mathematics and school drop-outs.

The data in Figure 1 demonstrates the ethnicity among the student enrollment within the Missouri Public Schools with the Riverview Gardens School District.

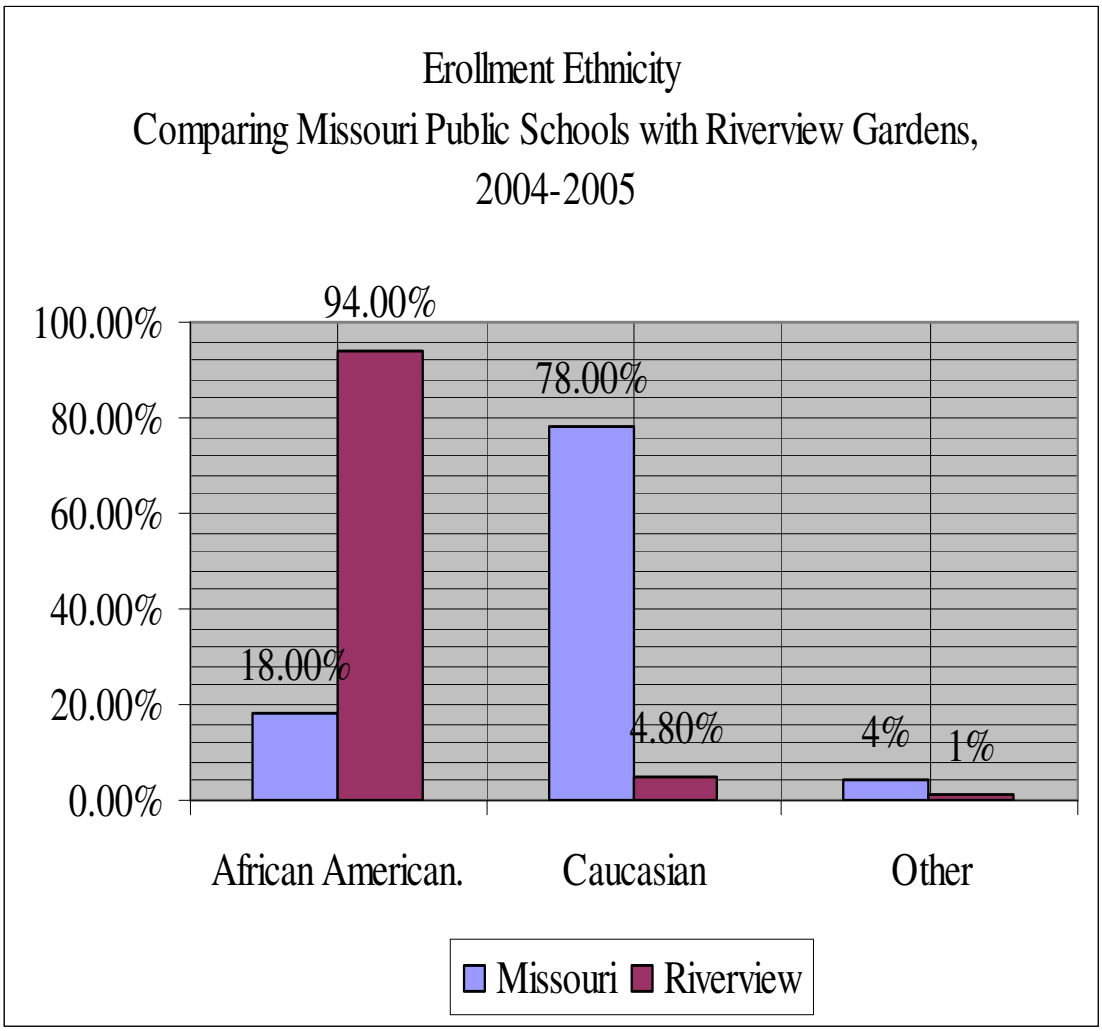

Figure 1. Enrollment ethnicity comparing Missouri Public Schools with Riverview Gardens 2004-2005.

Note: From DESE, 2006.

While the general distribution of African American students in public education in Missouri is predominantly Caucasian (78 percent), the Riverview Gardens School District is predominantly African American (94 percent).

The proportion of students who receive hot lunches that have been subsidized in whole or in part by assisted funds indicate that a number of students in these two

schools require assistance when compared to students in the rest of the state. Data from the Department of Elementary and Secondary Education (DESE, 2006) indicates that 41percent of students attending Missouri Public Schools qualified for the free or reduced lunch program (2007). Both schools in the study had a larger percentage of students eligible for the free or reduced lunch program when compared to the average percentage of students who attended Missouri Public Schools. Figure 2 presents a comparison of the percentage of students at each school who qualified for free or reduced lunch.

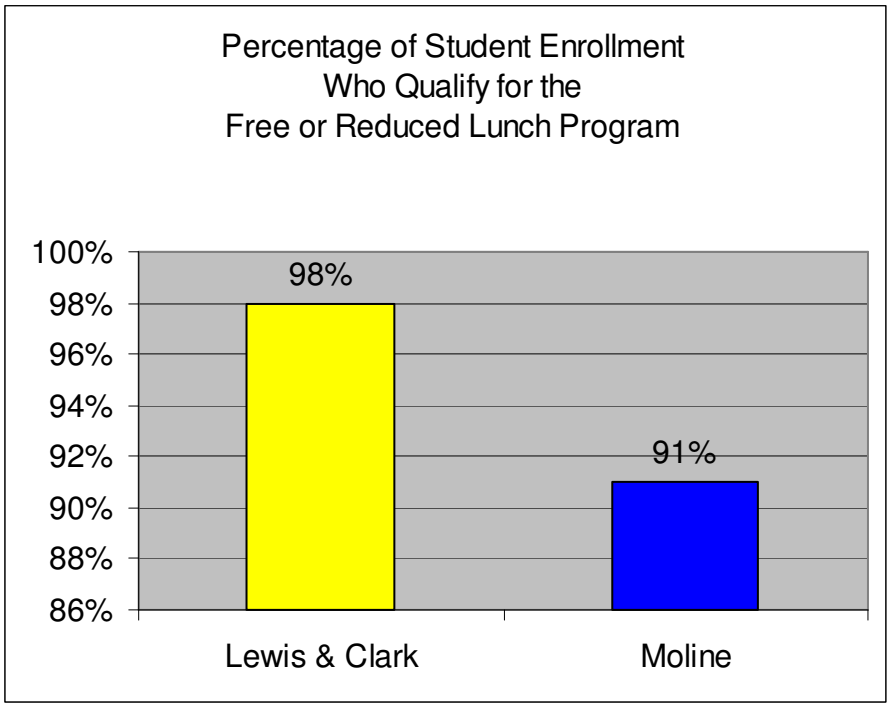

Figure 2. Percent of student enrollment who qualified for the Free or Reduced Lunch Program.

Note: From DESE, 2007.

At Lewis & Clark Elementary School, approximately 98 percent of the students qualified for assistance in acquiring hot lunches, while at Moline School 91 percent of the students qualified for assistance in acquiring hot lunches.

In respect to student attendance, the Missouri Department of Elementary and Secondary Education set the goal of 100 percent attendance for each student in each school, with exceptions for public health and personal welfare (DESE, 2006). Daily attendance is monitored to identify students who are at risk of academic failure from missing an unacceptable number of classes. Figure 3 presents a comparison of the daily attendance at each school.

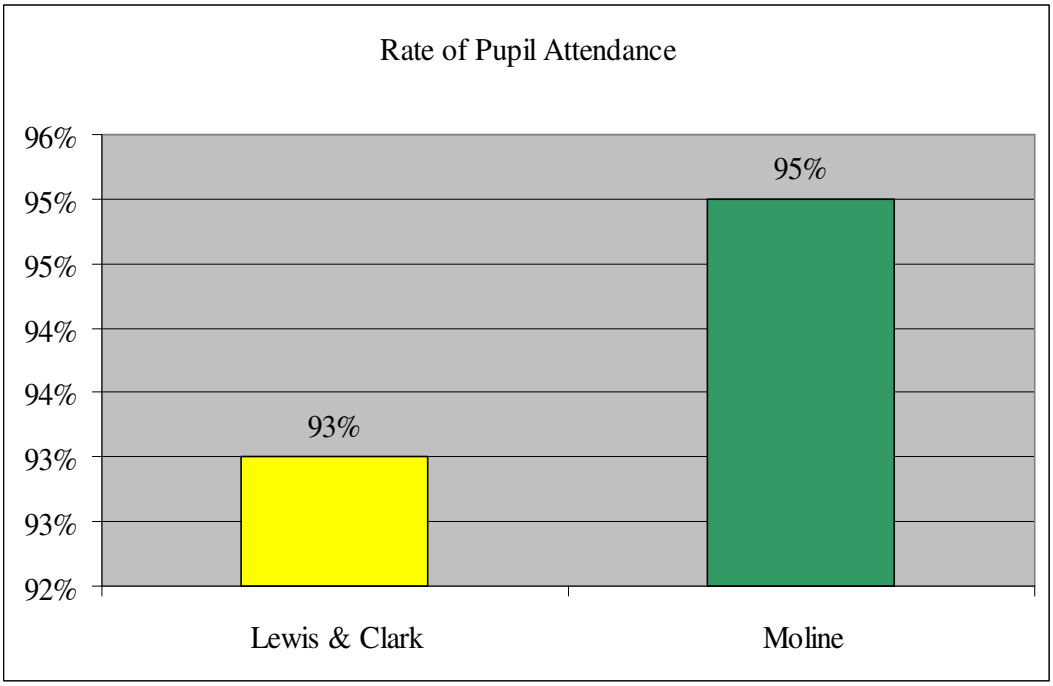

Figure 3. Rate of pupil attendance at Lewis & Clark and Moline School.

Note: From DESE, 2007.

Lewis & Clark Elementary School has a 93 percent daily attendance record for its

aggregate student population, while the Moline Elementary School has a 95 percent attendance record for its aggregate student population.

Procedures

The researcher approached the administration at the RGSD and asked for permission to conduct a research study in the Lewis & Clark Elementary School and the Moline Elementary School. The researcher provided a cover sheet that described the purpose of the study, the benefits of the study, the protections that the study would offer to ensure that the student population was not negatively affected by the experiment, and an assurance that the ethical considerations affecting human subjects in research experiments would be upheld at all times (Appendix B). The administration at the RGSD granted permission for the study to be conducted on the grounds that the anonymity of individual students be preserved.

The SRI was to be administered at two points during the 2004-2005 academic year and again during the 2005-2006 academic year. In order to obtain criterion-related evidence of improved reading achievement, the pretest was given in August at the beginning of the school year. The posttest administered in May was then given to determine if there were changes or transitions in the students' reading levels. Both the pretest and the posttest were administered by the Reading Specialist or by classroom teachers, all of whom had been trained in the SRI and how to instruct students to complete it. All students in the sample population were required to complete both the August and the May versions of the SRI as part of their academic activities for the school year.

In addition to regular classroom instruction, each school participated in a supplementary reading program. This supplementary reading program that serves as the point of inquiry in this research study is administered by the school and is under the control of the school's administrators and educators. The schools selected the program based upon their own review of the program and its perceived effectiveness in schools similar to their own. Students participated in the AR or RC programs depending upon which school they attended; students at Lewis & Clark Elementary School used the AR program, while students at the Moline Elementary School used the RC program.

When participating in these supplementary reading programs, all students were required to read books and were responsible for completing quizzes to evaluate their reading comprehension. Classes at both schools visited the school library once a week to check out books. Students did have the opportunity to exchange books sooner if they completed reading the books and passed the appropriate quizzes.

To increase student response, new goals were set for the students each academic quarter. In each classroom, a list of the points earned was posted weekly. Outside the library, in the main hall, the listing of the students with the five highest points in each class was posted. The goal was to motivate the students to read more to improve their reading achievement. Lamme (2003) cited both reading programs were governed by the assumption that becoming literate involves developing reading habits that provide students with a better quality of life, not just in school, but outside of school, habits that will last for a lifetime.

In both programs, students take a computer-generated quiz after completing a book. However, the type of questions asked in these quizzes form a significant difference between the two programs. AR program solicits basic recall questions about the details of the story and tests the student's recall of the content and information presented within the book. In contrast, the quizzes administered within the RC program require the student to demonstrate not only recall but comprehension of the information presented in the story. Both program quizzes give students practice with the type of multiple choice questions they often see on standardized tests. The quizzes typically take between 15 to 30 minutes per student to administer, and scoring is internal within the computer software.

With each program, educators can select new reading material from a catalog and increase the number of texts available to students based upon the attitudes of the class and what the teacher feels appropriate to the lesson plan. The catalogs for both the RC and the AR programs are extensive and include several hundred books that can be subject to the same analysis.

Upon successful completion of a quiz, in both programs the student is given computer driven diagnostic reports. AR detailed reports give valuable data on the books students read, comprehension levels, vocabulary practice, and student records. RC also offers computer-generated diagnostic reports from student data: Student Reading Report, Participation Summary Report, and a Reading Selection Alert. In both programs, data is tracked as a way to help teachers fine-tune instruction and demonstrate the progress of student readers in the classroom.

Analysis

The analysis of the SRI instrument was conducted by the computer-assisted version of the test. The scores generated by the test enabled the researcher to conduct further analysis outside of the limitations imposed by the SRI computer-assisted analysis software. Once the scores for the samples were known, the researcher analyzed these scores through a t-Test. The method of t-Test analysis used in the research study was a paired sample to enable comparison of data and to determine if discrepancies or other ambiguities were present in the data. The researcher selected the t-Test method on the assumption that there is equal variance between separate data scores. The data from the t-Test was then utilized to establish if there was a statistical difference in the two sets of means. After the t-Test was applied to determine variances, the f-Test was used to verify if the variance of the two sets of means were equal. The results of the f-Tests are then subject to interpretation and are used as the basis for the findings and the conclusion of the research study.

Limitations, Assumptions, and Validity

Several observations have been made concerning the limitations of the research study and the internal and external validity that is drawn from the data and the methods. These were briefly mentioned in Chapter I but need to be expanded upon in this chapter to demonstrate awareness of potential problems and the steps that have been taken to minimize the impact of these problems on the research study.

Limitations. All comparative studies in which two samples are compared have limitations in respect to the sample populations and the applicability of the research to other populations. In the current research project, the data was limited in that it was

derived from two schools in a comparatively affluent school district. The Riverview Gardens School District is not representative of a low-income school district. The school received a total of $62,199,380.00 for operating expenses in the 2007-2008 academic year, and the fund balance at the close of the budget was $1,466,461.00 (RGSD, 2008). The limited available balance, which was less than three percent of the total budget, caused the administration to note that RGSD falls under the classification of a financially distressed school (RGSD). However, the financially distressed school is the category for school districts with schools that are struggling to meet their budget requirements but are able to do so; in contrast, schools that represent students from dangerously low-income populations are those that operate on a deficit. The presentation of some students from the Riverview Gardens School District as "low income" or "at-risk" might influence some readers of this research paper to think that the results are applicable for all schools or students within schools that do operate on a deficit, when in fact, this is not the case.

Limitations of the method also do not take into account the performance of individual students. The method chosen for this study was to use aggregate data from the population as a whole as the basis for comparison rather than selectively isolating test scores on a per-student basis. This has the benefit of preserving the anonymity of the human participants but loses the depth of data that might be attained from isolating each student and that student's individual test scores over time and contrasting these scores to the student's gender, race, and socio-economic status.

Finally, the training received by teachers is a serious potential limitation. The teachers at the Lewis & Clark Elementary School and the Moline Elementary School

have received training in how to administer the SRI but have not received professional development in the RC or the AR programs. The teachers administer these programs based upon the instruction they received from their peers and from the written resources provided with the text. Some educators received a brief introductory course that helped communicate the purpose of the programs and the methods used therein, but this does not take the place of true professional development and training to use either program to its fullest capacity.

Assumptions. One noted potential threat to the internal validity of this study was that of student apathy. The literature demonstrates that many at-risk students do not recognize the value of reading, reading comprehension, or the need to apply the self to reading scholarship. As such, many students in the sample population might have an ambiguous understanding of the need to become better readers. However, investigations into oppositional culture theory suggest that there is little validity to the idea that at-risk students intentionally underperform because of resistant attitudes or the need to overcome authority (Ainsworth-Darnell & Downer, 1998). It is presumed that the students' attitudes towards reading will not have a statistically disproportionate impact upon their academic performance as measured by the SRI instrument.

The researcher also assumed that students who qualify for the Free or Reduced Lunch Program can and should be classified as at-risk in respect to their socioeconomic status. The use of the program applies a binary assessment of the student's socioeconomic status, which might not be borne out through detailed research into the student's home life and his or her respective socioeconomic status. Yet for the purposes of the study, it was assumed that qualification for the Free or Reduced Lunch Program

allowed for a reasonably accurate generalization of the student's socioeconomic background.

Threats to internal validity. The purpose of a research study using a non-experimental concurrent quantitative research methodology is to demonstrate that there is a cause-and-effect relationship between specific variables. In the context of the current study, the variables refer to the type of reading program used and the impact of these reading programs on the student population. Yet while efforts have been made to limit flaws or errors in the sample population, these problems nevertheless persist. The greatest threat to internal validity is the lack of diversity within the sample population. While all schools in the RGSD utilize some form of remedial or supplemental reading program to help improve the reading scores of the students served by each school, only the Lewis & Clark Elementary School and the Moline Elementary School have student populations that are not only socio-economically diverse but also racially diverse, thus fitting the established criteria for students who are especially "at-risk" for economic threats. Subsequently, the study was limited to these two schools, as the majority of the students in academic years 2004-2005 and 2005-2006 are from families that lived within the lower socioeconomic level.

The size and the nature of the sample population also posed a threat to validity. In quantitative research experiments, larger sample populations are preferable because the aggregate data used in the study is used to show trends, themes, and patterns within larger sample populations. Larger populations also enable improved randomization of results, thus reducing potential fragments in the data that might suggest the presence of commonalities or patterns that do not actually exist. The small group size used in the

study reduces the ability to generalize the data to a larger population. Similarly, the mobility of students within the district also made it difficult to isolate a narrow sample, as students' families tended to rent instead of own and moved from one location to the next, often moving within the school district.

The lack of randomization in the sample population created one final challenge to internal validity. While it is accepted that the sample population is an intentional selection rather than a random selection, the data would withstand scrutiny if a greater degree of chance affected the sample. For example, the students were already assigned to the fourth grade by their teachers, and the study therefore reflects their status regardless of their age or other criteria that could affect placement (e.g., learning disabilities, etc.). The ability to generalize the results from these subjects to other populations is restricted.

Threats to external validity. Several observations have been made concerning the distinct observation concerning the external validity of this investigation as characteristically at-risk students' attendance is not just limited to disadvantaged communities. In many schools–city, suburban, and rural–the number of children unable to read and understand grade level material is growing at an alarming rate (Alawiye & Williams, 2005). This study would be worth consideration in schools across the nation. Directing students to become independent, motivational readers is the main focus of education. The sample population of this investigation was not diverse: it was comprised of primarily African American at-risk students from families of lower social economic status. Although there are other districts that house similar populations, it is not the normal school population in the state of Missouri. Illustrated in Figure 4 is the compared enrollment diversity of all Missouri Public Schools with RGSD.

Summary

The purpose of this study was to determine whether students who receive supplemental reading instruction demonstrate improved results on the Scholastic Reading Inventory and, if so, which one of two possible supplemental reading programs demonstrates the greatest overall gains in academic improvement. A non-experimental concurrent quantitative research study methodology was selected as the best possible method to achieve this goal. Two sample populations consisting of fourth grade students enrolled in the Lewis & Clark Elementary School and the Moline Elementary School in two separate academic years were approached and data were gathered from the computer-assisted versions of the SRI. Analysis was internal within the SRI computer-adapted versions of the test with an assumed t-Test analysis done to determine mean and an additional f-Test analysis done to demonstrate points of significance within the data. Limitations, assumptions, and challenges to validity were made to demonstrate the effectiveness of the research and to uphold the appropriateness of the non experimental concurrent quantitative research design.

Chapter IV - Results

The objective of this study was to compare the reading levels of fourth grade students employing two motivational reading programs. Students participating in the AR program were compared with students using the RC program to determine if AR generated significantly improved reading skills as measured by the SRI. The analysis took place in two separate academic years and involved two separate sample populations of fourth graders enrolled during these periods. This chapter presents the results from the study. Discussion, summarization, and information drawn directly from these findings will be discussed in the final chapter of this paper.

Scoring and Findings from the Scholastic Reading Inventory

The instrument used to measure reading achievement was the Scholastic Reading Inventory (SRI). Although the data from this sampling were not necessarily representative of a diverse population, it was nonetheless possible to draw some preliminary conclusions regarding the efficacy of one program over the other. The SRI test scores contained in this study are in Lexile Levels. The MAP is the benchmark used to assess and evaluate the academic performance of students in public elementary schools in the state of Missouri and was used in this study to demonstrate aggregate performance in academics for the third and fourth grades (DESE, 2006).

Table 1 presents the MAP scores for the third and fourth grade students at Lewis and Clark.

Table 1

MAP Scores for Lewis & Clark Elementary School

MAP – Grades 3 or 4	1999	2000	2001	2002	2003
Math					
Advanced and Proficient	9.3	11.3	9.5	7.8	13.3
Step 1 and Progressing	44.0	50.7	33.8	51.9	42.2
Communication Arts					
Advanced and Proficient	5.9	36.1	6.3	14.0	2.0
Step 1 and Progressing	72.1	41.7	60.9	48.8	70.6
Science					
Advanced and Proficient	1.4	20.8	12.5	9.3	5.9
Step 1 and Progressing	72.9	36.1	28.1	34.9	51

Note. From DESE, 2006.

These scores give an overview of the academic progress of the students, and the data demonstrates that 70.6 percent of the students were in the lowest category for academic performance.

Table 2 illustrates grade level Lexile Range for scores at the Lewis & Clark Elementary School. The data indicates that the Lexile scores are below average for the state of Missouri and are below the anticipated levels of literacy for students reading at the fourth grade level (DESE, 2006).

Table 2

Grade Level Lexile Range

Grade 1	Grade 2	Grade 3	Grade 4	Grade 5	Grade 6	Grade 7	Grade 8
100-400	300-600	500-800	600-900	700-1000	800-1050	850-1110	900-1150

Findings (2004-2005)

Each subject in the study was administered the SRI as a pretest during August. The scores from the test were used as a benchmark to evaluate student reading progress. The SRI was given again in May as a posttest. The data from the pretest were analyzed to establish the mean score of the sample at Lewis & Clark that utilized the AR program. Furthermore, the same procedure was applied to the posttest data to determine the amount of reading achievement gains earned by the sample participating in the AR program during the 2004-2005 school year.

The pretest and posttest means for Lewis & Clark students using the AR program are presented in Figure 4. Note that the pretest mean of 475 was within the second grade range. The addition of 116 Lexile Level points, as compared to the posttest mean indicates reading achievement increased to the third grade level.

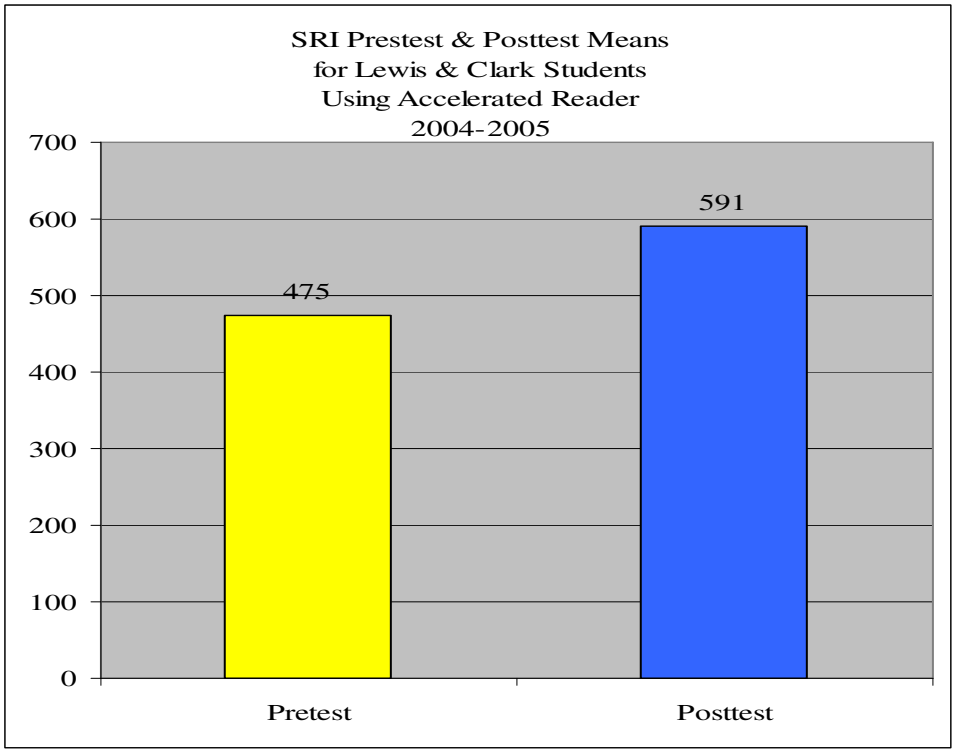

Figure 4. SRI pretest and posttest means for Lewis & Clark students using Accelerated Reader 2004–2005.

To determine if the Lewis & Clark students who used the AR program achieved statistically significant gains in test scores, a one-tailed Dependent t-Test was used. The null hypothesis asserted that no significant difference existed between the pretest and posttest scores while the alternate hypothesis contended that a significant improvement between the pretest and the posttest scores existed. Table 3 presents the data from the one tailed Dependent t-Test.

The summary of the analysis was as follows:

$$t\,(53) = 5.41,\ p < .\,001.$$

Given that the p –value of 7.578E-07 is less than the α-value of .001, the null hypothesis was rejected in favor of the alternate hypothesis with the conclusion being that the

average improvement from pretest scores to posttest scores was significant. This indicated improved reading achievement for the Lewis & Clark students who participated in the Accelerated Reader program.

Table 3

t-Test: Paired Two Sample for Means, Lewis & Clark/Accelerated Reader 2004-2005

	Posttest	*Pretest*
Mean	591.56	475.25926
Variance	48291	40994.535
Observations	54	54
Pearson Correlation	0.7237	
Hypothesized Mean Difference	0.05	
df	53	
t Stat	5.4151	
P(T<=t) one-tail	8E-07	
t Critical one-tail	1.6741	
P(T<=t) two-tail	2E-06	
t Critical two-tail	2.0057	

Note. $\alpha = .001$

The sample at Moline School that employed the RC program was administered the SRI pretest in August and the posttest in May. The pretest was used as a benchmark to measure reading improvement for each student throughout the school year.

Figure 5 highlights the pretest and posttest means achieved by Moline pupils who participated in the RC program. Note that the pretest mean 539 was within the third grade range. With the addition of 112 Lexile Level points, as compared to posttest mean, reading achievement increased to the fourth grade level.

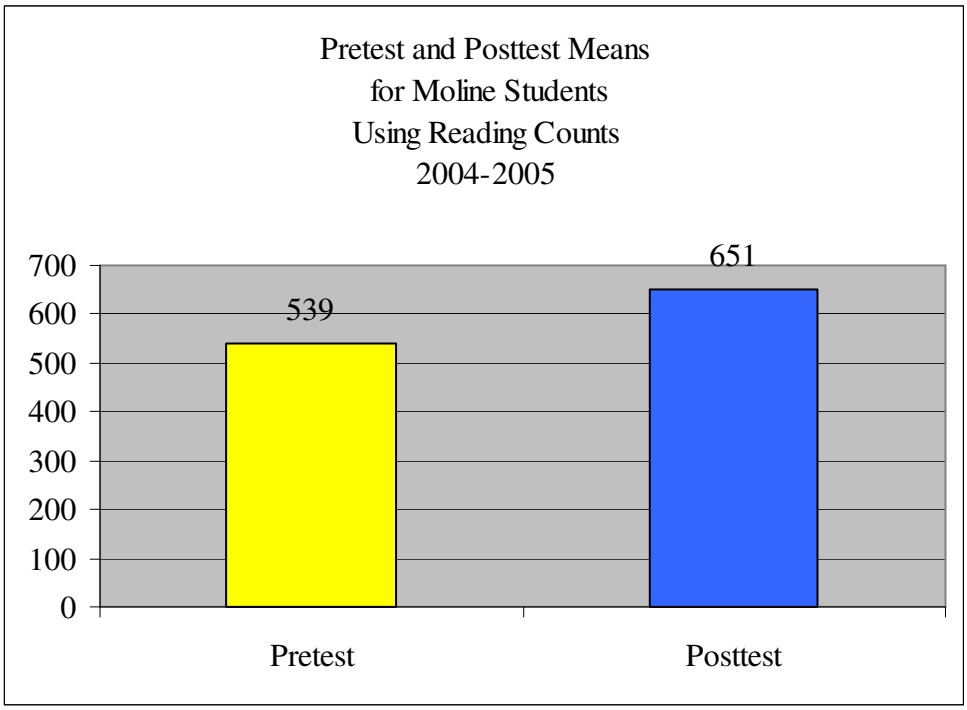

Figure 5. SRI pretest and posttest Means for Moline students using Reading Counts 2004-2005.

To discern whether Moline pupils who used RC program achieved notable gains, a one tail Dependent t-Test was utilized. The null hypothesis contended that no significant difference existed between the pretest and the posttests scores, while the alternate hypothesis maintained that a significant improvement between pretest and the posttest scores did exist. Presented in Table 4 is the data from the t-Test: Paired Two sample for Mean.

The summary of the analysis is as follows:

$$t(57) = 4.30,\ p < .001.$$

Given that the p-value of 3.33E-05 is less than the α-value of .001, the null hypothesis was rejected in favor of the alternate hypothesis with the conclusion being that the

average difference in pretest scores and posttest scores was significant. This indicated improvement of reading skills for the Moline students participating in the RC program.

Table 4

t-Test: Paired Two Sample for Means, Moline/Reading Counts 2004-2005

	Posttest	*Pretest*
Mean	650.8276	539.1034483
Variance	41589.37	49354.05929
Observations	58	58
Pearson Correlation	0.572415	
Hypothesized Mean Difference	0	
Df	57	
t Stat	4.304329	
P(T<=t) one-tail	3.33E-05	
t Critical one-tail	1.672029	
P(T<=t) two-tail	6.66E-05	
t Critical two-tail	2.002465	

Note. $\alpha = .001$

The statistical analysis indicates that both programs witnessed significant gains in reading performance.

Comparison of Findings from 2004 - 2005

The research question that guided this study asked if the students employing the AR program yielded greater reading achievement when compared to the pupils' participation in the RC program. In order to resolve this question, statistical data analysis

tests were employed to compare the results from the SRI scores from Lewis & Clark Elementary School to those from Moline Elementary School. A one tailed f-Test was applied to establish whether variances of the two sets of data were equal. The null hypothesis maintained no statistical differences existed in the variances of the two sets of scores. The alternative hypothesis contended that a statistical difference existed in the variances of the two sets of scores. Table 5 presents the data from the one tailed f-Test Two-Sample for Variances.

The summary of the analysis is as follows:

$$F(53,57) = 1.611.\ p = .289.$$

Given that the p-value of .290 is greater than α-value of .001, the null hypothesis was not rejected with the conclusion that no statistical difference existed in the variances of the two sets of scores.

Table 5

F-Test Two-Sample for Variances, Lewis & Clark/ Accelerated Reader and Moline/Reading Counts 2004-2005

	Lewis & Clark	*Moline*
Mean	591.5556	650.8276
Variance	48291.46	41589.37
Observations	54	58
Df	53	57
F	1.161149	
P(F<=f) one-tail	0.28956	
F Critical one-tail	1.561487	

Note. $\alpha = .001$

Since the null hypothesis from the f-Test was not rejected, the Equal Variance t-Test was utilized to determine the answer. The research questioned whether the Lewis & Clark students using the AR program would yield greater reading achievement when compared to the Moline students employing the RC program. The null hypothesis stated that there was no significant difference between the means. The alternate hypothesis contended that the mean of the AR group would be significantly difference than the mean of the RC group. Presented in Table 6 is the data from the t-Test: Two-Sample Assuming Equal Variances.

The summary of the analysis was as follows:

$$t(110) = -1.481,\ p = .071.$$

Given that the p-value of .071 is greater than α-value of .001 indicates that there was no significant difference between the means and the null hypothesis was not rejected. Note that the p value is quite close to .05 indicating that a Type II Error may have occurred. The conclusion from data analyzed in this 2004- 2005 study was that no significant difference existed in the post-test means when Accelerated Reader and Reading Counts were compared.

Table 6

t-Test: Two-Sample Assuming Equal Variances, Lewis & Clark /Accelerated Reader and Moline /Reading Counts 2004-2005

	Lewis & Clark	*Moline*
Mean	591.5556	650.8276
Variance	48291.46	41589.37
Observations	54	58
Pooled Variance	44818.56	
Hypothesized Mean Difference	0.0	
Df	110	
t Stat	-1.4818	
P(T<=t) one-tail	0.070627	
t Critical one-tail	1.658824	
P(T<=t) two-tail	0.141253	
t Critical two-tail	1.981765	

Note. α = .001

Findings (2005–2006)

The procedure for the second year investigation remained the same as the first year. The pretest was administered to the sample in August, and the posttest was given in May. Figure 6 highlights the pretest and posttest means for pupils at Lewis & Clark using the AR program. Note that the pretest mean is 453, within the second grade range. An increase of 149 Lexile Level points, as compared to the posttest mean, indicates the students reading achievement progressed to fourth grade reading levels.

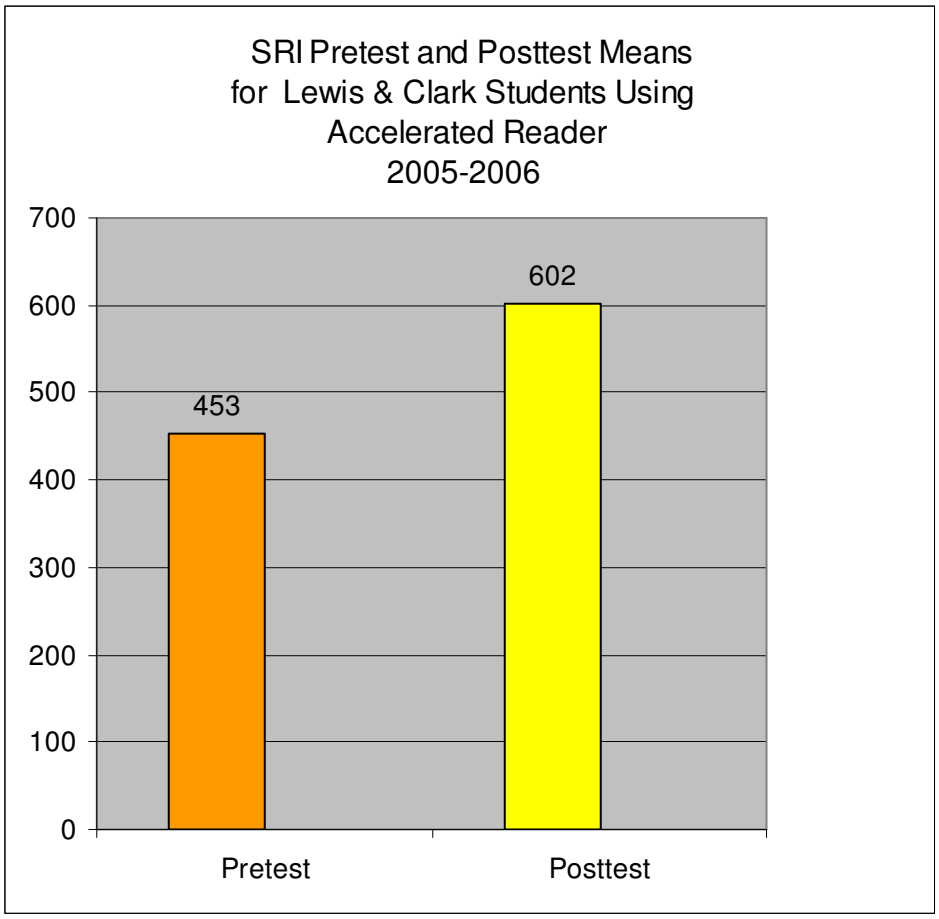

Figure 6. SRI pretest and posttest Means for Lewis & Clark students using Accelerated Reader 2005-2006.

To ascertain if Lewis & Clark pupils using the AR achieved statistically significant gains, a one-tailed Dependent t Test was used. The null hypothesis maintained that no significant difference existed between the pretest and the posttests scores, while the alternate hypothesis stated a significant improvement between the pretest and posttest scores did exist. The data from the one-tailed Dependent t-Test is presented in Table 7.

The summary of the analysis was as follows:

$$t(38) = 10.70,\ p < .001.$$

In view of the fact that the p-value of 2.49E-13 is less than the α-value of .001, the null hypothesis was rejected in favor of the alternate hypothesis with the conclusion being that the average improvement from pretest to posttest scores was significant. This indicates reading improvement was demonstrated for Lewis & Clark students using AR.

Table 7

t-Test: Paired Two Sample for Means, Lewis & Clark/Accelerated Reader 2005-2006

	Posttest	*Pretest*
Mean	602.3333	453.5897
Variance	23846.86	34824.09
Observations	39	39
Pearson Correlation	0.887321	
Hypothesized Mean Difference	0	
Df	38	
T Stat	10.70445	
P(T<=t) one-tail	2.49E-13	
T Critical one-tail	1.685954	
P(T<=t) two-tail	4.98E-13	
T Critical two-tail	2.024394	

Note. $\alpha = .001$

The means for the pretest and posttest achieved by pupils at Moline Elementary who participated in the RC program are illustrated in Figure 7. Note that the pretest mean 471 was within the second grade range. With the addition of 137 Lexile Level points, as compared to the pretest mean, the posttest mean increased to 608 within the fourth grade range.

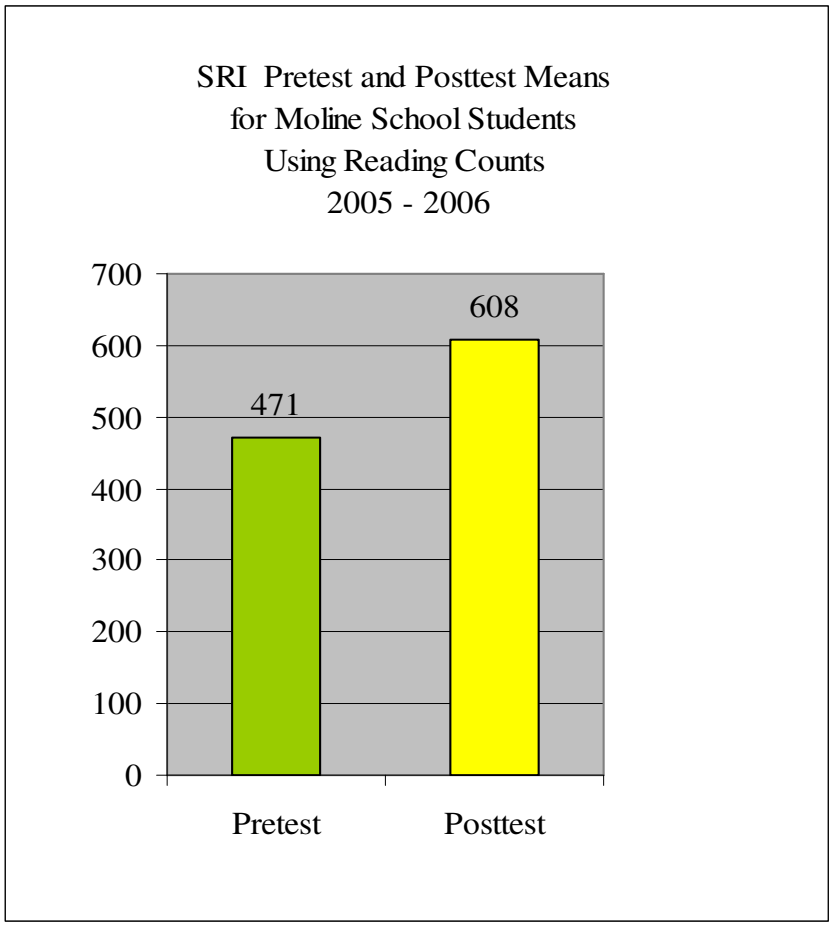

Figure 7. SRI pretest and posttest Means for Moline students using Reading Counts 2005–2006.

To ascertain if Moline Elementary students using the RC program achieved statistically significant gains, a one-tailed Dependent t-Test was utilized. The null hypothesis maintained that no significant difference existed between the pretest and posttest scores, while the alternate hypothesis stated that a significant improvement existed between the pretest and the posttest scores. Presented in Table 8 is the data from the one-tailed Dependent t-Test.

The summary of the analysis was as follows:

$$t(44) = 7.39,\ p < .001.$$

Given that the p-value of 1.52E-09 is less than the α- value of 001, the null hypothesis was rejected with the conclusion being that the average difference in pretest and posttest scores was significant. This indicates that Moline students increased reading achievement using the Reading Counts program.

Table 8

t-Test: Paired Two Sample for Means, Moline/ Reading Counts 2005-2006

	Posttest	*Pretest*
Mean	608.5778	471.5333
Variance	17600.43	5514.255
Observations	45	45
Pearson Correlation	0.388501	
Hypothesized Mean Difference	0	
Df	44	
t Stat	7.39372	
P(T<=t) one-tail	1.52E-09	
t Critical one-tail	1.68023	
P(T<=t) two-tail	3.04E-09	
t Critical two-tail	2.015368	

Note. α = .001

When applied to the study group data, the t-Test results indicated that pupils who used either program attained elevated test scores in reading performance. In order to determine which supplemental reading program provided the largest overall gains, statistical data analysis tests needed to be employed. First the f-Test was applied to determine if the variances of the two sets of data were equal. The null hypothesis stated that no statistical differences existed in the variances of the two sets of scores. The alternative hypothesis maintained that a statistical difference existed in the variances of the two sets of scores. Presented in Table 9 is the data from the f-Test Two-Sample for Variance.

The summary of the analysis was as follows:

$$F(38,44) = 1.35,\ p = .165.$$

Given that p-value .165 is greater than α- value of .001, the null hypothesis was not rejected with the conclusion being that no statistical difference existed in the variances of the two sets of scores.

Table 9

F-Test Two-Sample for Variances, Lewis & Clark/ Accelerated Reader and Moline/ Reading Counts 2005-2006

	Lewis & Clark	*Moline*	
Mean	602.3333	608.5778	Mean
Variance	23846.86	17600.43	Variance
Observations	39	45	Observations
Df	38	44	df
F	1.354902		F
P(F<=f) one-tail	0.165206		P(F<=f) one-tail
F Critical one-tail	1.674447		F Critical one-tail

Note: $\alpha = .001$

In view of the fact that the null hypothesis in the f-Test was not rejected, a one-tailed Equal Variance t-Test was used to determine the answer to the research question of whether the Lewis & Clark sample employing the AR program yielded greater reading achievement when compared to Moline's sample participating in the RC program. The null hypothesis maintained that differences between means were equal, while the alternate hypothesis contended that an improvement existed in the mean reading scores. Presented in Table 10 is the data from the t-Test: Two Sample Assuming Equal variances.

The summary of the analysis was as follows:

$$t(82) = -.199,\ p = .421.$$

In view of the fact that the p-value .421 is greater than the α- value of .001, the null hypothesis was not rejected with the conclusion that no statistical significant difference existed in the post-test means. The conclusion from the data analysis of the 2005- 2006 study indicates no significant difference in mean reading score existed when the AR and RC reading programs were compared.

Table 10

t-Test: Two-Sample Assuming Equal Variances, Lewis & Clark/Accelerated Reader and Moline/Reading Counts 2005-2006

	Posttest A	*Posttest B*
Mean	602.3333	608.5778
Variance	23846.86	17600.43
Observations	39	45
Pooled Variance	20495.12	
Hypothesized Mean Difference	0	
Df	82	
t Stat	-0.19937	
P(T<=t) one-tail	0.421232	
t Critical one-tail	1.663649	
P(T<=t) two-tail	0.842464	
t Critical two-tail	1.989319	

Note. $\alpha = .001$

Summary

The data from the two year comparative study were evaluated in this chapter. The purpose was to compare the reading levels of students participating in the AR program with students using the RC program to determine if one program generated significantly

improved reading skills based on the SRI assessment. While significant gains in reading were made by students employing the AR and the RC programs, the sample at Lewis & Clark using the AR program did not yield significantly greater reading scores when compared to the sample at Moline using the RC program.

Chapter V- Discussion

The information acquired from the research process will be presented in this chapter. The purpose of the study was to compare the reading levels of at-risk students participating in the AR program with the reading levels of students who participated in the RC program to determine which program produces improved reading skills This two year study will be summarized and the findings from the study discussed. The research study will be concluded through an assessment of the significance of the findings in application and recommendations for future research options.

Overview

Researches concerning reading and information acquisition suggest that many students who fit a narrow ethnic and socioeconomic demographic profile are at risk for failing to develop literacy. Students from low income households and who are of a minority, in general, seem to be at increased risk for experiencing difficulties in acquiring information from the written word, processing the significance and implications of information's content, and recalling this information when required to do so.

Public education has sought to address these problems through supplemental reading programs that are integrated into the curriculum and are designed to improve students' overall literacy. The students' reading levels are targeted through interventions that address vocabulary, grammar, and composition, and there are multiple formats that are used to deliver the interventions. As these interventions tend to be additions to the curriculum, it is within the discretion of the administration of individual schools to locate the reading intervention that best suits student needs and to implement the intervention into the classroom. However, while all supplemental reading interventions are designed

to promote increased reading skill among students, the varying formats of these suggest that some might be better suited to certain school settings than others. In order for schools to get the greatest overall benefits from these supplemental reading interventions, it is essential that they select an intervention that is effective and meets the needs of their respective student populations. A causal-comparative experimental research methodology was selected to evaluate two supplemental reading interventions, AR and RC, in schools that had similar populations.

The purpose of this study was to compare the reading levels of disadvantaged students before and after participating in the AR program with the reading levels of students before and after participating in the RC program to determine which program produced significantly improved reading skills as measured by the SRI, a computer-adaptive assessment. The researcher hypothesized that at-risk students using AR supplemental reading assistance would have improved scores in the reading analysis section of the SRI when compared to at-risk students using RC supplemental reading assistance.

The data from the study did not prove that the SRI scores for students receiving supplemental reading assistance through the AR program demonstrated improvement and were higher than SRI scores generated by students who received supplemental reading assistance from the RC program. This outcome suggests any type of computer assisted reading is better than none since both programs demonstrated improvement..

The sample for this study consisted of 196 fourth grade pupils enrolled at RGSD, a suburban school district located in St. Louis County in the state of Missouri. At the time of this study, the district had eleven elementary schools, two middle schools, and one

high school. Lewis & Clark Elementary School and Moline Elementary School, two schools in the district, participated in the study. The statistical sampling used in this study included all fourth-grade pupils from both schools, Lewis & Clark and Moline. The sample population of this two year study was comprised of 196 students. The first year (2004-2005) 112 students participated, 59 fourth grade students were registered at Lewis & Clark and 53 were registered at Moline. The second year (2005-2006) 84 students participated, 43 fourth grade students were registered at Lewis & Clark and 41 students were registered at Moline. The populations of both groups were similar in terms of demographic characteristics of ethnicity and receiving free or reduced lunches as supplemental food assistance, the standard used to determine the socioeconomic level of the students' households. Both schools in this study contained nearly the same percentage of children receiving free or reduced lunch, 97 percent at Lewis & Clark Elementary School and 91 percent at Moline Elementary School. Attendance at each school was approximately 94 percent per day for both school years assessed in the study.

The Scholastic Reading Inventory was the instrument used to measure the reading achievement of the subjects in the study. The pretest was given in August and the posttest was administered in May. The data were analyzed using the Dependent t-Test to determine if gains were achieved during the study. The f-Test was applied to determine if the variances of the two sets of data were equal. In all cases, the results of the f-Test indicated that the equal variance t-Test was to be utilized.

The purpose of the t-Test was to determine the answer to the research question. The research question asked if the students employing the AR program yielded greater reading achievement when compared to the pupils' participation in the RC program. The

hypothesis was at-risk students using AR supplemental reading assistance will have improved scores in the reading analysis section of the SRI when compared to at-risk students using RC supplemental reading assistance. The null hypothesis stated at-risk students using AR supplemental reading assistance will have no significant difference in reading gains in the reading analysis section of the SRI when compared to the at-risk students using RC supplemental reading assistance. The null hypothesis was not rejected suggesting no significant difference in reading gains existed among either student population as the result of participation in either supplemental reading program. The hypothesis was at-risk students using AR supplemental reading assistance will have improved scores in the reading analysis section of the SRI when compared to at-risk students using RC supplemental reading assistance was not proven.

Discussion

The investigation sought to establish the importance of motivational reading programs on reading improvement of at-risk children. The purpose of this study was to compare the increased reading levels of at-risk students participating in the AR program with the reading levels of students who were using the RC program to determine which program produces significantly improved reading skills as measured by the SRI, a computer-adaptive assessment. The conclusion of this investigation was that no significant difference in reading gains existed when two independent motivation reading programs, AR and RC, were compared.

Despite the lack of a proven hypothesis, a number of intriguing lessons can be derived from the research. First and foremost is the need to recognize that the administrations of both the Lewis & Clark Elementary School and the Moline Elementary

School might have already selected the appropriate supplemental reading intervention that best suits the needs of their students, indicating that there might be differences in the student populations in the two schools that were not formally recognized in the context of the study. If this is the case, then it is likely that the administrators at these schools did successfully recognize the needs of their student populations and found the supplemental reading program that met these needs.

Regarding the results for the equal variance t-Test of the data analyzed in the 2004-2005, it should be noted that the p value was quite close to .05 indicating that a Type II Error may have occurred. The data was evaluated three times to identify if this was a nominal or a consistency error, and no cause of the error could be located. However, it is not likely that the discrepancy caused by this error–if it exists–resulted in a distortion of the data in favor of either supplemental reading program.

There is a growing recognition that schools alone cannot accomplish the goal of reducing academic achievement disparities and that reading intervention programs can supplement the educational services provided to underperforming students (Lauer et al., 2006). The problem of motivating at-risk students to increase reading achievement is as complex as each student is unique. In the primary grades, the assigned lessons are simple. Interventions are incorporated to help the children become successful readers. Teachers monitor the students' work by observing as they complete the task. In the intermediate grade level, lessons are more complex, fewer interventions are used, and the students become more independent as they complete the task. This is the point where at-risk students' achievement gap begins to grow.

If these students are going to advance in reading achievement, the educators have the responsibility to create an atmosphere that will encourage students to read more. Evidence from the study indicated that children who live in poverty can enhance their reading skills with reading interventions. The use of the hot lunch program, however, might have been an inappropriate strategy to categorize students by their families' socioeconomic status. Due to the limitations of the research effort and the need to preserve the anonymity for students and their families, it was deemed an effective tool; unfortunately, effectiveness might have been a trade-off for accuracy. The research might not have explored the actual implications of low-income status and its impact on student reading comprehension.

Independent motivational reading programs encourage students to read for pleasure and to increase time spent reading; in doing so, students' reading achievement is increased. Faced with repeated failure, students with minimal reading skills often lose confidence and the motivation to keep trying. Yet, like most people, they are willing to participate in activities in which they experience success and feel a sense of control (Webre, 2005). In addition to reading at school, it is essential these children learn to read outside of school for pleasure.

Conclusion

The research method was appropriate for the purposes of the study, but there were problems in respect to the standards used that had the potential to influence the outcome. The data was not encouraging as it did not provide the support or assistance for school administrators, which was an idealized outcome for the study. However, the research effort

was not in vain, and it does suggest options for future research to clarify the data inquiry process and to identify strategies that are useful for educators.

One concept that needs to be explored in follow-up research is the impact that these supplemental reading interventions have on long-term academic progress. The literature in supplemental curriculum reform frequently and consistently demonstrates that there is a distinction between short-term gains in test scores and academic performance and a lasting impact upon the student's overall academic abilities. Many interventions designed to show improved academic performance teach students to take tests, rather than educating them in the strategies and skills that correlate to lifelong academic improvement. These interventions thus produce the appearance of being effective instead of resulting in permanent, realistic gains for the students. It is not known whether AR or the RC programs affect lifelong reading gains as the programs themselves are comparatively new, and there is a lack of longitudinal research to demonstrate lifelong gains for students participating in either program.

As one of the points of inquiry for this study was to determine if independent motivational reading interventions encourage students to read outside of the classroom and to develop lifelong reading habits, follow-up research must take this into account. Initiating ways to expand on students' time spent reading for recreation is an effective method to increase reading skills, and the current study did not address this directly in respect to either the RC or the AR programs. If educators provide students with books of high interest and offer recognition to keep them motivated, their reading skills may be enhanced, thus improving academic achievement.

It is essential that the at-risk students increase their reading skills. Quirk and Schwanenflugel (2004) stated according to the 2002 National Assessment of Educational Progress (NAEP), "an alarming 36 percent of fourth graders read below the basic level of proficiency for their grade. Furthermore, 74 percent of those students who were unsuccessful at reading in the third grade continue to be unsuccessful in the ninth grade" (p. 4). This demands follow-up research to determine if students who showed improvements in reading skills because of instruction from supplemental reading programs can apply this to their future academic endeavors. Similarly, regression was another concern addressed with at-risk learners. Numerous empirical studies indicated that the achievement gap in reading forms and widens during summer rather than during the school year (James, 2006). Investigators recommended researching the effects of a motivational reading intervention over the summer vacation.

Additional recommendations for future research include the need to enlarge the sample population. The use of the RGSD was used mainly for convenience purposes, as the researcher is familiar with this location and the position of the schools in this district and has cultivated a favorable relationship with the administration. The study is suited to a sample population in a setting with higher levels of poverty and greater problems in student learning and reading acquisition. A comparison of students from affluent families to students from low-income or impoverished families would help improve the depth of the information collected.

One point of concern that might have affected the outcome of the study is that the educators did not have training in the supplemental reading programs. The teachers who administered these interventions to students did not have any formal training or

professional development in respect to how these programs should be used, suggesting that the programs might have not been administered as intended or to the scope intended by their designers. As the teachers who participated in this investigation did not have specific training with AR or RC, it is recommended that teachers should participate in training before the research begins to increase reliability in the study.

It is also unknown what impact the RC and the AR programs might have upon long-term academic progress in other areas besides reading. If follow-up research proves that both of these supplemental reading programs are effective in improving overall reading gains, then it is possible that success in these programs might have a positive impact upon the students' overall academic progress. Demonstrating large sum gains in academic progress would help encourage the implementation of these interventions in schools.

Summary

This study focused on motivational independent reading programs, AR and RC, to improve reading achievement among at-risk students. Enhancing motivation to read is important; children who are motivated to read are more likely to spend more time reading, which has been directly linked to improved reading achievement (James, 2006). Improvement in reading motivation in children who were having difficulty learning to read seems important in mediating the predictable cycle of frustration, failure, and avoidance that is typical among struggling readers (Quirk & Schwanenflugel, 2004).

This study demonstrated the continuing need to identify programs and interventions that bring struggling readers closer to grade-level benchmark scores. The findings suggest that while both programs resulted in improved reading skills, this

improvement was perhaps not a result of the differences in the two programs but was a result of the motivational reading programs themselves. The data suggested a need for further exploration into varied reading interventions, methods, and other factors that have impact on the reading skills of at-risk students. With nearly 70 percent of urban fourth-grade students reading below basic levels (Reed, Marchand, Martella & Kolts, 2007), the importance of intervention at the earliest sign of reading problems cannot be overstated.

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Vitae

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Educational Experience

During the fifteen years I have been an educator, I have had the pleasure of teaching many children. As I taught at-risk students, I developed an understanding of the obstacles they face daily. Those at-risk students are the reason I chose the topic *The Effects of Motivational Independent Reading Programs on Elementary At-Risk Students' Reading Skills.*

Appendix A

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Lindenwood University
209 Kingshighway
St. Charles, MO 63301
September 10th, 2007

Dear Dr. Dougherty:

I (we) grant permission for the use of Moline and Lewis Clark students' reading scores the pre and post assessments from 05-06 school year. Schools, students' names, students' scores, and district will remain anonymous. The student researcher, Ms. Kathleen Trueb, will collect data for research purpose in order to fulfill partial requirement for Doctor of Education degree. The purpose of study is to compare the effect of two reading programs

Sincerely,

Rhonda M. Key, Ph. D.
Co-Superintendent of Riverview Gardens School District

phone (314) 869-2505 • fax (314) 388-6008 • rkey@rgsd.k12.mo.us • www.rgsd.k12.mo.us

Appendix B

Submitted and Approved (12/11/2007 TGP)

08-02

IRB Project Number _____

LINDENWOOD UNIVERSITY
Institutional Review Board Disposition Report

To: Kathleen Trueb
CC: John Dougherty

The Institutional Review Board has reviewed the proposal for research:

Reviewed on September 20, 2007

The Institutional Review Board:

__XXX___Approves the proposal pending the following changes are made:

1. If this is a continuation of the specialist project – data from this project should be included so that the differences between the two projects can be determined.
2. Section 10A – details about School A and School B are missing.
3. Section 12 – you need to answer how education in general will benefit from this study and restate your benefits based upon anticipated conclusions.
4. Section 15 – is audio/video used and if so how is it used as this is not detailed in the study? If this is not an included component in your study then this should not need to be destroyed or maintained.
5. The edited versions of your proposal have been included with this disposition – please refer to them for additional information regarding changes.

XXXXX ***Please submit the revised proposal for IRB final approval.***

_____Tammi Pavelec_____9/2007____
Signature IRB Chair Date