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ABSTRACT

This action research project describes a program for improving reading fluency in order to increase reading rate and raise comprehension. The targeted population consisted of second and third graders in a middle class community, located in a suburb of a large metropolitan area. The problems of lack of reading fluency and low comprehension were documented through standardized testing and teacher observation. Analysis of probable cause data revealed numerous underlying causes for the number of students struggling to read fluently. The causes could be classified in three categories: outside of school influences; individual learning deficits; and school setting deficits. A review of the curriculum revealed good instruction of reading strategies; however, the time spent reading and the repetition of vocabulary was questionable. A review of solutions suggested by the literature, combined with teacher observation, led to the decision to use repeated readings as the chosen intervention. In addition, the amount of daily reading time was increased. The results of the action research project were favorable, suggesting that repeated readings may have influenced the improved comprehension and fluency scores. Appendixes contain a guardian permission form; several pre-tests and related materials; a reading survey; and instructions for measuring fluency. (Contains 50 references, 6 figures, 9 tables.) (Author/PM)

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IMPROVING PRIMARY STUDENTS' READING FLUENCY

Fran Eber
Sara Miller

An Action Research Project Submitted to the Graduate Faculty of the

School of Education in Partial Fulfillment of the

Requirements for the Degree of Master of Arts in Teaching and Leadership

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ABSTRACT

The following action research project describes a program for improving reading fluency in order to increase reading rate and raise comprehension. The targeted population consisted of second and third graders in a middle class community, located in a suburb of a large metropolitan area. The problems of lack of reading fluency and low comprehension were documented through standardized testing and teacher observation. Analysis of the probable cause data revealed numerous underlying causes for the number of students struggling to read fluently. All of the causes could be classified in three categories; outside of school influences, individual learning deficits, and school setting deficits. A review of the curriculum revealed good instruction of reading strategies; however the time spent reading and the repetition of vocabulary was questionable. A review of the solutions suggested by the literature, combined with teacher observation, led to the decision to use repeated readings as the chosen intervention. In addition, the amount of daily reading time was increased. The results of the action research project were favorable. Post intervention data would suggest that repeated readings may have influenced the improved comprehension and fluency scores.

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CHAPTER 1

PROBLEM STATEMENT AND CONTEXT

General Statement of the Problem

Reading comprehension and the best strategies to accomplish good comprehension are always the focus of elementary educators. On average, students in the targeted school district have significantly higher comprehension scores than the state average. This is also true of the second and third graders of two schools selected for this study. Yet, a review of the individual test scores in the two selected schools reveals a disturbing number of students scoring in the bottom two quartiles on the Stanford Achievement Test and Illinois Standard Achievement Test (ISAT) reading tests. Individual teacher observation of scores reinforces this concern. Teachers at these schools are pursuing a variety of new strategies to improve reading comprehension.

Some of these strategies focus on improving reading fluency as a means of improving reading interest and comprehension. The researchers will analyze the impact of the implementation of specific fluency improvement programs in two different schools within the same district.

Immediate Problem Context

The two schools from which the data will be collected will be referred to as Site A and Site B for the remainder of the study.

Site A

Site A is located in the western suburbs of a metropolitan area. The school was built in 1928. According to the 2001 Illinois School Report Card, the total enrollment of Site A is 244 students. The racial ethnic background of the student population consists of 93.9% Caucasian, 1.2% African American, 2.0% Hispanic, 2.9% Asian/Pacific Islander, and 0.0% Native American. This school has a low income enrollment of 2.5%. Limited-English proficient students comprise 2.5% of the school's population. The chronic truancy rate is 0.0%, and the site's attendance rate is 96.3%. The mobility rate at the building is 4.4%, (Illinois School Report Card, 2001).

This school has 16 full-time teachers, with one principal. The average teaching experience is 15 years, with 12 teachers holding master's degrees, and four with bachelor's degrees. The highest salary for this faculty is $69,706, and the lowest salary is $30,785. The average salary for this faculty is $52,458. There is one full time resource teacher who is on site everyday. The reading specialist reports to the building only two days a week; however, there are two reading aides in the building on a daily basis. While the art, music, physical education teacher, nurse, and psychologist are full time in the district, they are only present in the building one to two days a week. The district's gifted and talented program is also housed in this facility with three teachers on site when students are present. Site A has one full-time

learning resource center teacher and one aide. The building also has three other classroom aides. This building has one full-time secretary and one half-time secretary.

Site A is located in the middle of a residential neighborhood. The local train station is three blocks away from the school grounds. All students that attend this school are in walking distance. It is a two winged school with 15 classrooms. There are nine classrooms in the primary wing and six classrooms in the intermediate wing. This building also houses a classroom for the visually impaired. Presently, the program is serving eight toddlers. The building has one gymnasium, one technology lab, one activity room, and one fine arts room. There is a before and after school day care program housed in this building. The teachers have a faculty lounge and a workroom. The main office holds the offices of the secretary and the principal. Outside, there is playground equipment and a large field.

Site A has a traditional curriculum. There is evidence of many different teaching styles in this building, but all teachers believe in hands-on learning. This is evident in all subject areas. Many of the teachers believe in team teaching both within the same grade and in mixed grade settings.

Reading will be the focus of this research project. The Macmillan/McGraw-Hill School Publishing Company, A New View, 1995 reading series is being used throughout the district. The program is a real trade-book literature based program emphasizing good reading comprehension strategies. Stories have been chosen that highlight multicultural perspective, and there are numerous opportunities for the beginning reader to acquire the strategies used by good readers. In addition, phonics is a small component of the program for the earlier years. In contrast to the earlier grades, comprehension strategies are the main focus for grades three through six.

(Aoki, Flood, Hoffman, Lapp, Martinez, & Palincsar, 1995).

Site B

Site B, which is located in the the same community as Site A, was built in 1959 in a quiet residential area. Site B has 351 students. It has a 96.3% attendance rate and a 7.3% mobility rate. Only 0.6% of the student population is considered low income and 2.0% has limited English proficiency. A large percent, 86.6%, of the population is Caucasian while 1.4% is African American, 4.0%Hispanic, 5.1% Asian or Pacific Islander, and 0.9% Native American, (Illinois State School Report Card, 2001).

Within the school, there is one principal and twenty-three teachers. The average teaching experience of the staff is 15 years. Eleven teachers have bachelor's degrees and 12 hold master's degrees. The average salary for this faculty is $50,568 with a high salary of $74,852 and a low salary of $30,785. There are two resource teachers and a half-time reading specialist. The art, music, and physical education teachers as well as the psychologist, nurse, and social worker are full-time employees of the district, but share time among buildings within the district. Some of those teachers have their home bases in other district schools. There is a learning resource center teacher and fifteen classroom teachers. Additionally, there are 12 teacher aides in the building. One of the aides works in the learning resource center, two work in the reading room, one is a classroom aide, and eight are inclusion aides. The office is staffed by one full-time secretary and one half-time secretary.

The school is a two winged, one story building situated on a very large grassy field. It is on the same campus as one of the district's middle schools and adjacent

to the local Y.M.C.A. This campus location allows for some cooperative programming as well as the opportunity for after school care provided by the Y.M.C.A. It has typical facilities including, an office, workroom, faculty lounge, library, computer lab, gym, two resource rooms, a fine arts room, and fifteen classrooms. The school has a well equipped playground, provided by a very active and supportive parent-teacher association, and a large field for outdoor learning activities, recess, and gym.

Site B also has a traditional curriculum. There is emphasis on hands-on learning activities in all curricular areas but particularly in mathematics and science. The district is committed to full inclusion of special education students with a focus on differentiation of the curriculum to meet the needs of all students. As indicated previously, there are eight inclusion students at Site B.

The Macmillan/McGraw-Hill School Publishing Company, A New View, 1995 reading series is being used throughout the district. The program is a real trade-book literature based program emphasizing good reading comprehension strategies. Stories have been chosen that highlight multicultural perspective, and there are numerous opportunities for the beginning reader to acquire the strategies used by good readers. Phonics is a small component of the program for the earlier years and comprehension strategies are the focus of the curriculum for grades three through six (Aoki, Flood, Hoffman, Lapp, Martinez, & Palincsar, 1995).

The Surrounding Community

The two target schools are located in a western suburb of a large metropolitan area. They are part of a twelve school district. The target schools are two of the district's ten elementary schools. In addition, the district has two middle schools.

The district has an Administrative Service Center which houses the Superintendent, the Assistant Superintendent for Curriculum and Instruction, the Deputy Superintendent, the Special Services Director, the Assistant Superintendent for Business, the Coordinator of Business Services, three bookkeepers, and seven secretaries. In, addition, the district has a Media Services Center. There are four employees assigned to the Teachers' Center, eight Technology Center employees, 11 District Maintenance employees, and three employees in charge of the district Bookstore and Science Center.

The community has a population of nearly 50,000. Fifty two percent of the population is female while 48% percent is male. The median age is 35 years. Based on the 2000 U.S. Census Bureau data of this population, about 3.6% are Hispanic or Latino, 87.8% Caucasian, 1.9% African American, 0.1% American Indian and Alaska Native, 5.7% Asian, 0.0% Native Hawaiian and Other Pacific Islander, 0.9% report two or more races, and 0.1% report being of some other race, (Community Fast Facts, 1999).

Though the median family income in this suburb is $70,573, 8.5% of the adult population earns less than $15,000. The median years of completed schooling is 14.9. Of people over the age of sixteen 69.7% are employed, 2.1% are unemployed, and 28.2% are not in the labor force. Of those employed, 40.3% would be classified as managerial or professional, 4.4% technicians, 14.3% sales, 17.2% administrative support, 9.1% services, 0.3% agriculture, 8.2% craft or repair, 2.4% factory, 1.7% transportation, and 2.3% helpers or laborers (Community Fast Facts, 1999).

The 1990 Census reports 17,683 households in this community. Of those households, 70% are single family units while 30% are multifamily units. The average rent is $566 and the average median home value is $187, 332

(U.S. Census,2000).

There are three school districts within the community, two of which are elementary districts. The first elementary district is comprised of one school housing 387 students ranging from kindergarten through grade eight. It has a per-pupil cost of $7,026, and the average teacher experience within this district is 14.6 years. The average salary is $47, 889 (Community Fast Facts, 1999). The second school district has a population of 4,934 students housed within twelve school buildings. Ten of those buildings house kindergarten through grade six, while two of the buildings are seventh and eighth grade middle schools. This district has a per-pupil cost of $7,275. The average teacher experience is 15.6 years and the average salary is $53,950 (Illinois School Report Card). The third school district is a two building high school district with an enrollment of 5,015 students. The per-pupil cost is $8,317. The average teaching experience is 17.5 years, with the average teacher salary reported to be $65,063. The remainder of the school age population of this community, 2.7%, is enrolled in privately run schools (Community Fast Facts, 1999).

This community seems to be supportive of the school districts. The local fire and police departments team with the schools to provide educational programs at all levels. Businesses display student work, provide input in program planning, and meet regularly with the administration. The local park district has coordinated with the schools to make the rich history of this community available to all the citizens through written materials, guided tours, and internet access. The community library also works closely with the schools to have materials available to support curricular projects.

While this is a supportive community, there are issues facing all three districts. The first elementary district is facing dissolution and absorption into the second

district. The second elementary district is in the process of negotiating a new teacher contract. In addition, the administration is discussing the possible need for a referendum. Within all of the school districts, inclusion continues to be a primary concern.

National Context of the Problem

Reading comprehension is one of the most important goals in an elementary classroom. Educators believe this to be true because comprehension is critical in the acquisition of knowledge in all curricular areas. Today, with all that has been added to the curriculum without an increase in learning time, educators need to focus on the strategies that will be most effective in improving reading comprehension. Among educators there is disagreement as to the extent to which daily repeated readings will improve fluency and ultimately reading comprehension. This research project will examine this focus and try to determine the extent to which daily repeated readings will influence reading fluency.

According to the National Reading Panel there is a growing concern that children are not achieving fluency in reading. A national study was conducted with a sampling of fourth graders and 44% of students were found to be disfluent even when given grade-level stories that the students had read under supportive testing conditions. The study found that there was a close relationship between fluency and reading comprehension. It was determined that students with poor fluency scores also had difficulty with reading comprehension (Pinnell, DeFord, Lyons, & Bryk, 1995).

In addition, the National Research Council Report, Preventing Reading

Difficulties In Young Children stated that "Adequate progress in learning to read English (or, any alphabetical language) beyond the initial level depends on sufficient practice to achieve fluency with different text" (Snow, Burns, & Griffin, 1998, p.223). As a result of this report, it was recommended that word recognition and reading fluency should be tested on a regular basis. This would allow for timely intervention.

According to the director of a university diagnostic reading clinic, one of the most common manifestations of reading problems of the children seen at his reading clinic is slow, disfluent, inefficient reading (Rasinski, 2000). He began to wonder if this slow reading was seen in readers outside of his clinic. Rasinski and his colleague, Nancy Padak, examined all students in grades two through five that were referred for Title I reading services by their teachers in the Akron, Ohio public schools. Six hundred students were given standard informal reading tests and the results were surprising.

> The informal reading inventory criteria showed that students' comprehension and word recognition were, on average, at their frustrational level - but they were near the threshold for instructional-level reading. In other words, comprehension and word recognition were poor, but it wouldn't take much improvement to move their performance to an instruction level. Reading rate, however, was a different story. When reading passages at their grade level, these students, who their teachers identified as struggling readers, read at a rate that was approximately 60% of their instructional level reading rate; for a passage below their grade level the rate was 50%. Clearly reading rate, or speed, was a significant factor in classroom

teachers' perception of their students' proficiency or lack of proficiency in reading (Rasinski, 2000, p. 146).

In the past, reading rate or fluency was not considered a problem as long as the student could comprehend what was read. According to Rasinski, slow, disfluent reading cannot be ignored because it is evidence of excessively slow processing of text. Slow reading requires readers to invest more time in a reading task than students who are fluent. This should be a concern for all teachers, because reading progress is determined by the amount read. Those with slow reading rate do not get as much reading practice (Rasinski, 2000).

Allington (2001) examined the importance of reading fluency. He stated that reading rate is related to reading volume because children with slower rates simply read fewer words than children with faster rates in the same amount of time. For example, one student who reads 200 words per minute may finish a trade book within an hour. Another student with a reading rate of 75 words per minute may need three hours to finish the same trade book. Volume of reading matters in the development of children. Slower rate, limited self-monitoring, and lack of fluency often results in limited comprehension. Since reading is the main element in social studies, science, and math, the slower reading child will take longer to complete assignments while learning and retaining less. This information demonstrates a need for carefully monitoring reading rates in young children. Evidence of disfluency would indicate immediate need for intervention before the gap widens between slow and fluent readers.

These articles provide evidence that reading fluency is a concern for students on a national level. The researchers will examine this focus, and try to determine the

extent to which daily repeated readings will influence reading fluency for the selected target groups.

CHAPTER 2
PROBLEM DOCUMENTATION

Problem Evidence

In order to document the concerns for low achievement in reading, the researchers referred to the district test scores. The Stanford Achievement Test is the only national test administered to the district's second graders. Traditionally the district uses these test scores to monitor the progress of the students and adjust the curriculum accordingly. In gathering information about the district's third graders, the researchers used the results of the Stanford Achievement Test as well as the Illinois State Achievement Test. In addition, the researchers observed students at both sites.

In this district all students are required to take the Stanford Achievement Test annually. Approximately 4% of students in the district receive test accommodations as directed by their Individual Educational Plans. The researchers examined test scores of the students in Site A and Site B, as well as other district schools. In examining the reading scores for Site B, it was noted that on the Stanford Achievement Test for the 1998-99 school year, 21% of the third grade students scored in the lower two quartiles. In 1999-2000, 11% of third graders also fell in the bottom two quartiles. In addition, it was reported that 22% of the third graders in the 2000-01 and 20% in the 2001-02 school year scored in quartiles 1 and 2 in reading, (see Figure 1). The researchers examined the Illinois State Achievement Test scores in reading for the same time period for more evidence of a reading concern. In 1998-99

23%, 1999-00 13%, 2000-01 20%, and in 2001-02 10% of third graders scored in quartiles 1 and 2, (see Figure 2). The researchers then examined the district's Stanford Achievement and Illinois State Achievement scores, (see Figures 3 & 4). It was clear that the scores for Site A , Site B, and the district were considerably better than the state scores for the 2001-02 school year, (see Figure 5). While that was a positive for both sites as well as for the district, the concern for students scoring in quartiles 1 and 2 remained.

The researchers then looked at the second grade test scores for Site A, see Figure 6). In the 1998-99 school year, 27% of the students scored in quartiles 1 and 2. The following year 30% of the second graders fell in quartiles 1 and 2. The next two years of test scores showed good growth. In the year 2000-01, 14% and in the year 2001-02, 17% of the student population scored below standard. The number of students scoring in quartiles 1 and 2 was still a concern. Very similar results were reported on both tests giving validity to the concern. In addition, teachers observed and reported that each year there were a number of students entering third grade who were markedly behind the other students in reading achievement. As a result, goals were developed as part of the school's School Improvement Plan at both Site A and Site B to raise reading scores and lower the number of students scoring below standard.

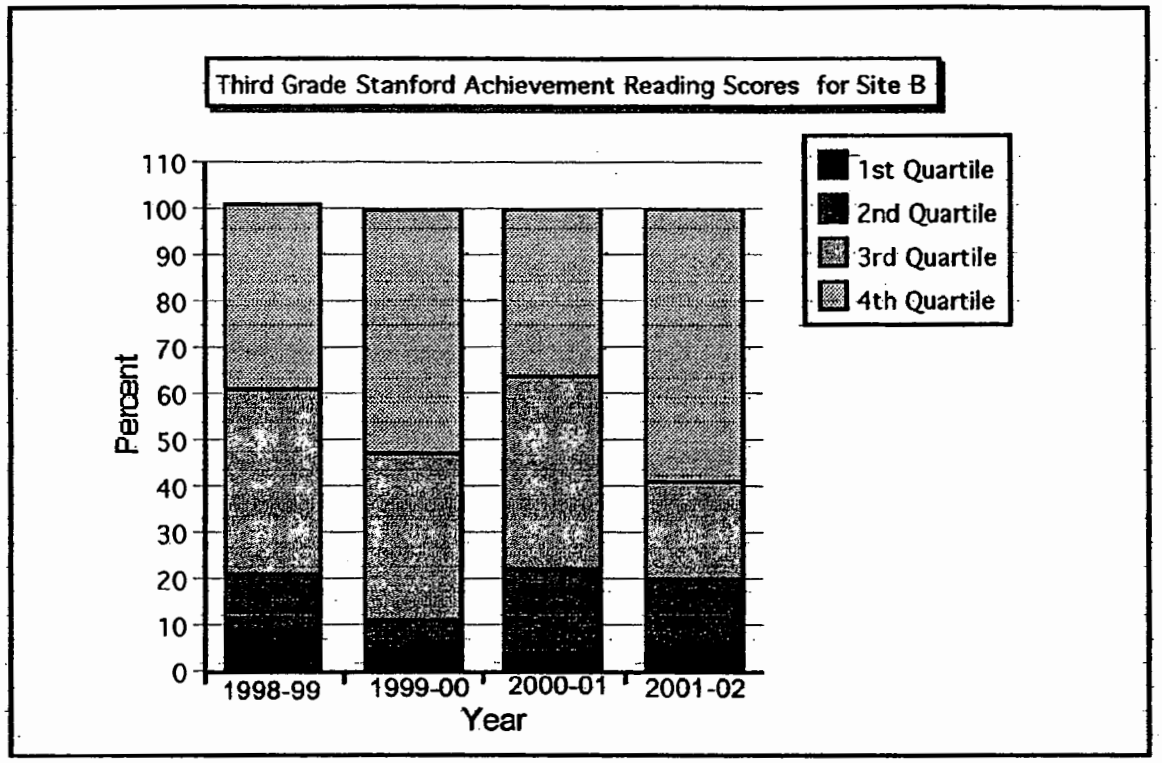

Figure 1. Stanford Achievement Reading Test scores for third graders at Site B.

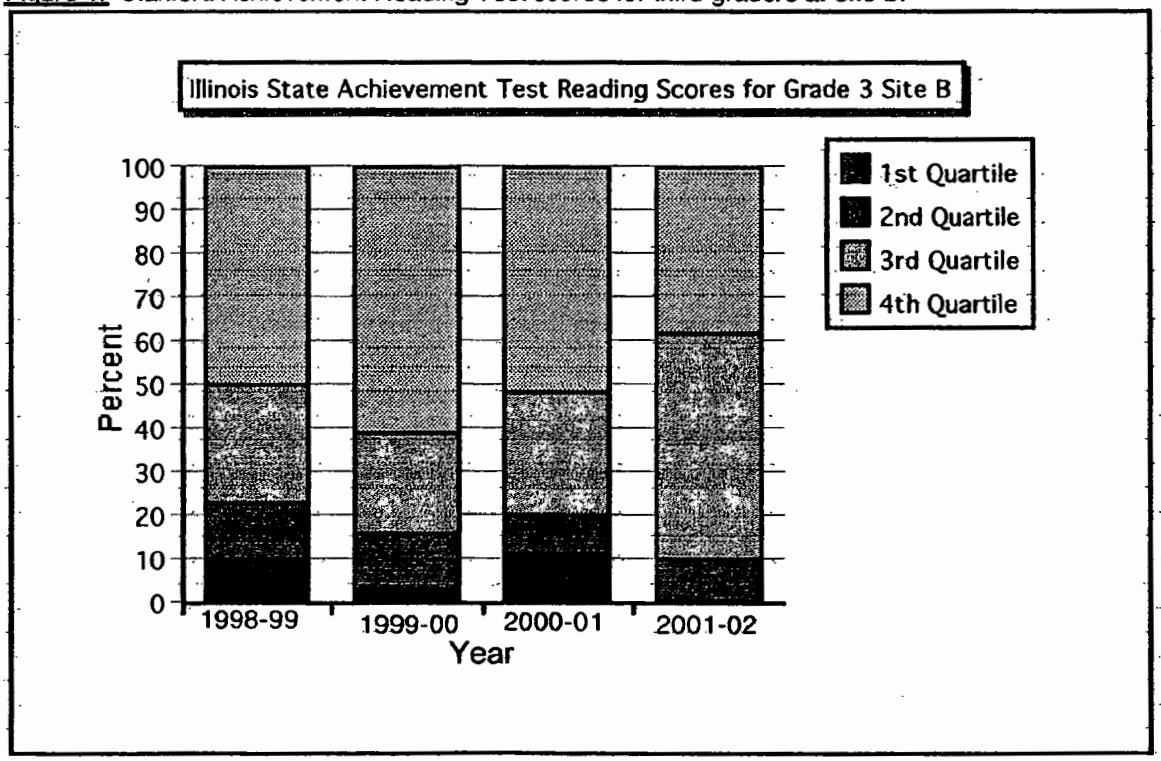

Figure 2. Illinois State Achievement Test Reading scores for third graders at Site B.

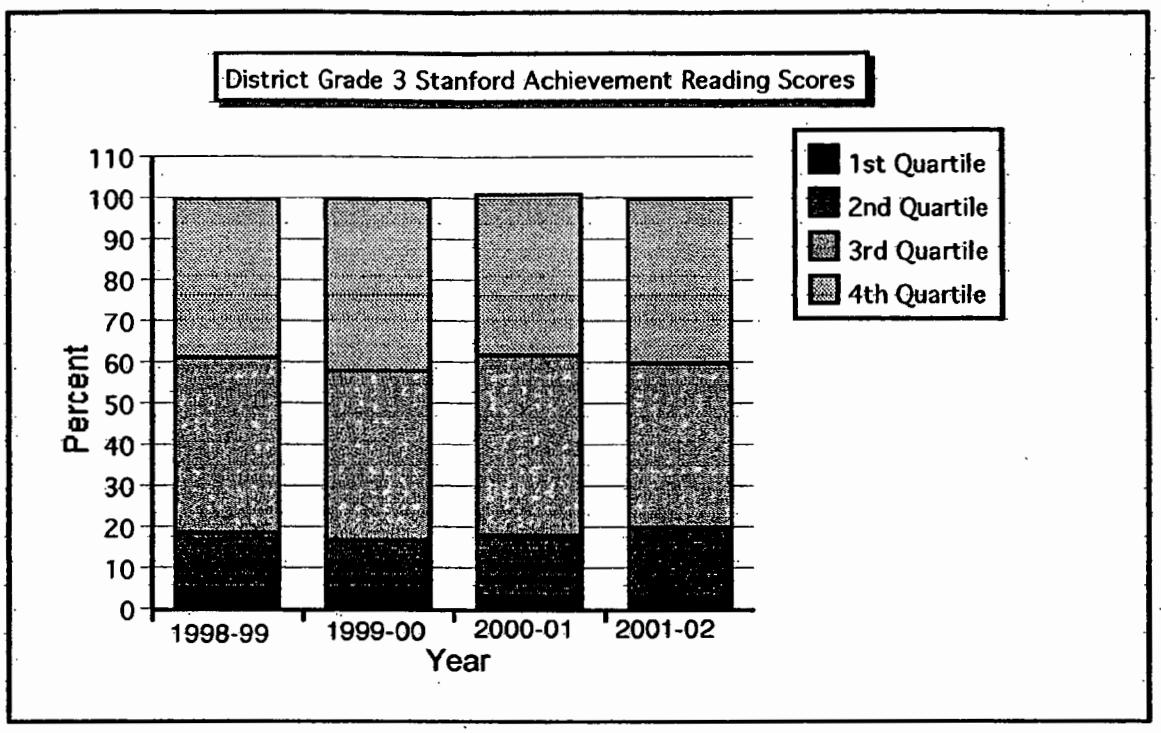

Figure 3. Stanford Achievement Reading Scores for district third graders.

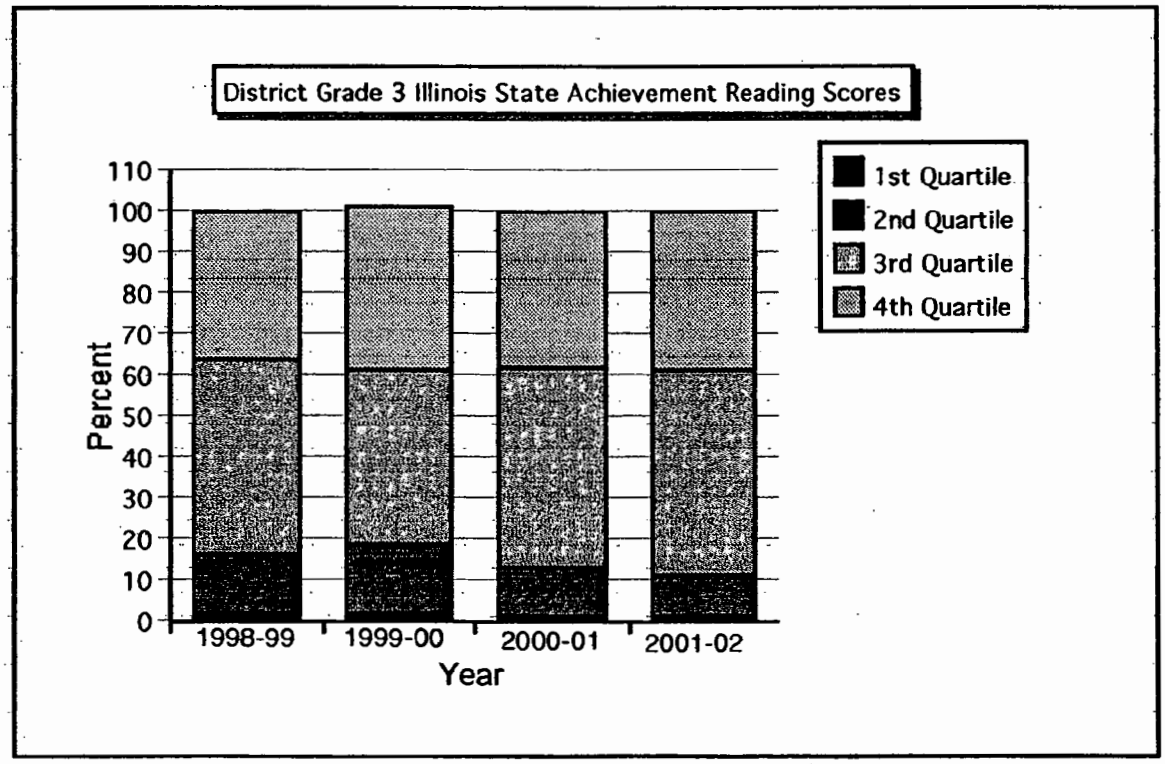

Figure 4. Illinois State Achievement Test scores for district third graders.

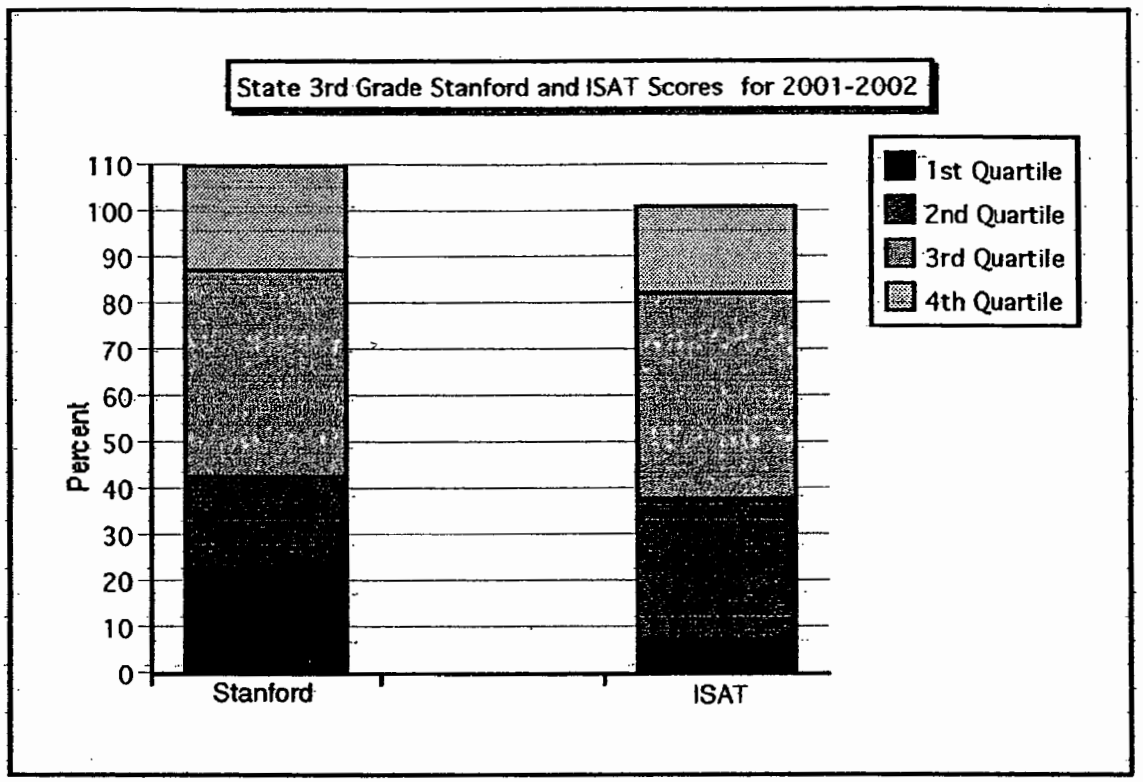

Figure 5. Stanford Achievement and Illinois State Achievement scores for the state's third graders.

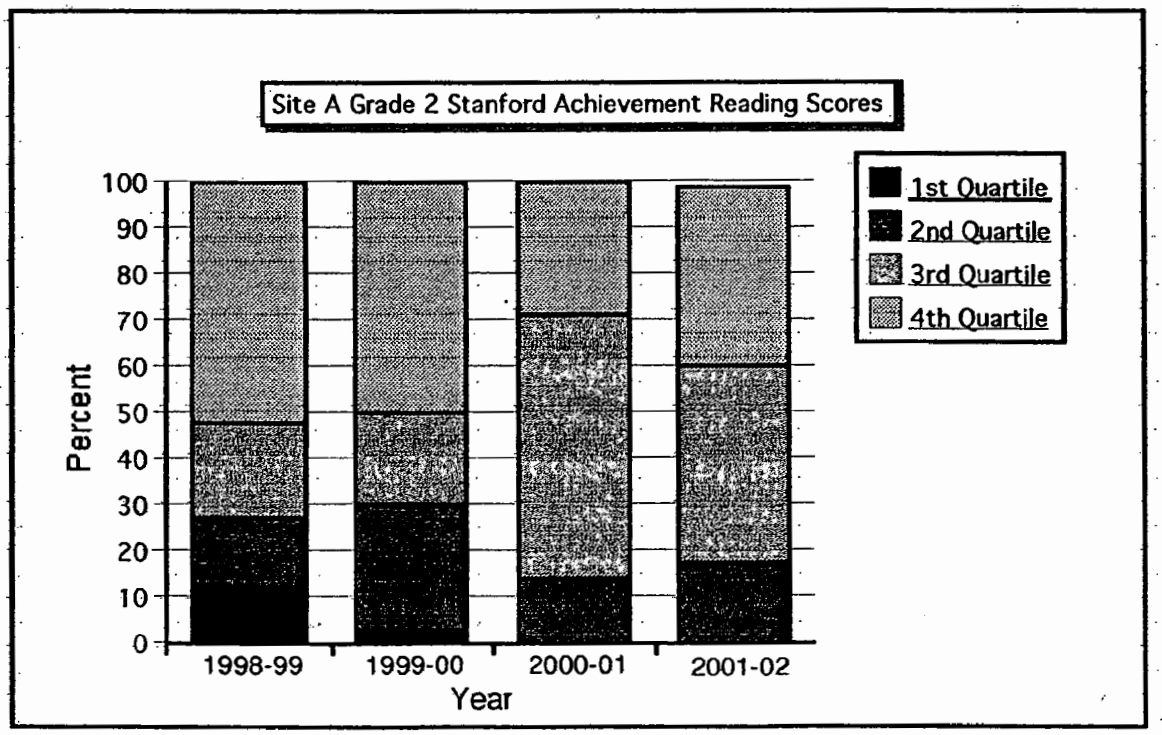

Figure 6. Stanford Achievement Test scores for Site A second graders.

Probable Causes

The literature suggests numerous underlying causes for the number of students struggling to read fluently and with comprehension. These reasons can be placed in three categories. The first category includes variables that are outside of the school setting such as economics, demographics, and cultural issues. The second category includes variables that are present in individual students which include general learning disabilities, dyslexia, biological and genetic deficits, temporal processing, and naming speed deficits. The last category would include variables present within the school setting including quality of materials, resources, time spent on reading, appropriateness of texts, and fluency. In order to seek possible remedies, it is important to try to understand these underlying causes for poor reading success.

Some of the most extensive studies of socioeconomic status (SES) have demonstrated a pronounced difference in reading success between students of low economic status and those of higher economic status. Some have suggested the SES difference in reading is the result of schooling. Children of lower-SES attend inferior schools and receive inferior educational opportunities. Therefore, their achievement is poor. Children of higher-SES receive a better quality education resulting in higher achievement (Cook,1991). According to Alexander and Entwisle (1996), non-school time correlates more to poor achievement in low-SES children than does inferior schooling. The time before children begin school and the summer months are when low-SES students fall behind their higher SES peers. During the school months the rate of achievement is virtually the same for the higher and lower SES students (particularly at the elementary school level). In another study, it was

reported that SES correlated only slightly to achievement at the individual level. A low-SES student in a higher-SES school was less at risk than a low-SES student in an entire school of low-SES students (White, 1982).

In another study, the researchers tried to identify the family interactions that would account for the social class differences. They found that children from low-SES families had less opportunity for informal literacy learning than children from higher-SES families. While children from the low-SES families did have similar reading skills, homework, and paired reading, fewer than 43% regularly visited the library or did other kinds of print play and independent reading compared to 90% of the children in middle to higher-SES families (Baker,Serpell, & Sonnenschein, 1995). Regardless of the reasons, the difference in reading achievement among various SES populations has been mounting (National Assessment of Educational Progress, 1981, 1998).

Demographics and cultural differences also contribute to low reading achievement. It has been noted that children from poor families, children of African American and Hispanic descent, and children attending large city schools are much more at risk for reading difficulties than the children of European-American backgrounds, children of middle-class families, or children living in suburban areas. It is important to find the reason for this disparity as well as to look into the literacy development of these at risk children in order to develop meaningful prevention programs.

"One characteristic of minority populations that has been offered as an explanation of their higher risk of reading difficulties is the use of non-standard variety of English or limited proficiency in English," (Snow, Burns, & Griffin, 1998, p. 27). Speaking a non-standard English introduces greater deviation of sounds making it

harder to acquire English literacy. Children have difficulty learning the sound and letter links. Additionally, social dialects make spelling a greater challenge.

The number of students who speak other languages and have limited English proficiency has grown dramatically over the past twenty years and continues to grow. Even though the general school population has changed very little, the number of students acquiring English proficiency has grown 85 % in the United States between 1985 and 1992 (Goldenberg, 1996). This makes up 5.5 % of the public school population with 53 % of those children concentrated in grades K-4. Eight percent of kindergartners have a native language other than English (August & Hakuta, 1997). Non-English speaking students, like the social dialect speaking students, tend to come from low socioeconomic backgrounds and attend schools where there are a very high number of students living in poverty. Both language and poverty are known to be risk factors. The largest portion of this at risk population is Hispanic. It has been found that this population is about twice as likely to read below average for their age and lag below their non-Hispanic white peers in all academic areas throughout their school careers (Kao & Tienda, 1995).

One apparent reason for the achievement difference is the language difference itself. If these students were to be taught and tested in their primary language, it is thought that obstacles would be removed and achievement would be superior (Legarreta, 1979; Ramirez, Yuen & Ramey, 1991). According to August and Hakuta, (1997) this idea is widely debated and there is no clear consensus about the advantages and disadvantages of instructing children in their native language in contrast to intensive exposure to English. Numerous studies done during the 1990's indicate that Hispanics taught in their native language still demonstrate low reading proficiency. This would suggest that there must be other factors that influence the low

reading achievement of these children.

Cultural differences have been cited as one of the factors influencing low reading literacy. It is believed that there is a mismatch between schools and the families in their ideas of literacy. There are also differences of opinion about the roles of parents and teachers in educating children which can put barriers in the way of learning to read in school. Others claim that this primary difference is not as important as more secondary reasons such as low motivation and poor aspirations which stem from discrimination and less social and economic opportunities for some minority groups (Ogbu, 1974, 1982). Still others claim that high motivation and educational aspirations can and do coexist with low achievement. Minority parents value literacy and pass that on to their children, but their development of reading literacy continues to fall behind the literacy of non-minority children. This may have to do with how reading is used by adults in different cultural groups influencing children's opportunities for reading and writing as well and the amount of these activities (Snow, Burns, & Griffin, 1998).

The second group of variables that contributes to reading difficulties centers around individuals. General learning disabilities can contribute to poor reading development. There may be biological reasons for the reading deficit of some students. The process of reading has been studied by neuroscientists and has resulted in a better understanding of the process. For example, researchers now have determined a certain structure for the component processes of reading (Shaywitz, & Shaywitz, 1996). No matter the origin of reading difficulties, they present themselves through alterations of the brain systems that are responsible for word identification and comprehension. This leads to the understanding that in all populations, even the high risk populations, many children do learn to read. Some of

these children learn to read easily while others struggle to read. This suggests that in all populations reading ability occurs along a continuum, and biological factors interact with the reader's experiences. The studies do not address possibilities for change or remediation, but it is widely known that in children the neural systems are very pliable and responsive.

In addition to biological factors, cognitive studies of reading have pointed out the critical connection between successful reading fluency and comprehension and phonological processes. Using this information it is logical to assume that a child having difficulty reading may have a phonological processing problem. Some research studies have looked at phonological processing problems and attributed them to the disruption or underdevelopment of specific brain systems (Snow, Burns, & Griffin, 1998).

According to Rose, Feldman, and Jankowski (1999), many children with average to above average intelligence struggle with reading. These difficulties have been referred to as dyslexia or reading retardation and are thought to be rooted in language difficulties, especially in processing the sounds of phonemes and words. It has been thoroughly documented that children with reading problems have difficulty in isolating and manipulating phonemes and in matching phonemes to their written alphabetic forms (Goswami, 1993).

Along those lines, Bowers and Wolf (1993), point to phonological awareness and naming speed as deficits of poor readers, and children having both deficits are significantly more disabled than children possessing only one of the deficits. They report that naming speed is a result of both low level perceptual, attentional, articulatory, and lexical-retrieval processes as well as high level cognitive and linguistic processes each of which require rapid rates of processing.

Recently it has been noted that students with dyslexia also have difficulty in temporal processing. In addition to having dyslexia, many individuals have dysphasia, or problems separating sounds. Children with reading problems often show high sensory separation thresholds, or poor gap detection, both visually and auditorily (Snow, Burns, & Griffin, 1998).

It is the results of these studies that have sparked the development of numerous reading fluency programs designed to boost reading rate with the intention of promoting better word calling as well as better comprehension.

The final category defining some of the causes of low reading achievement would center around schools and the learning process. It is necessary to examine the role that quality materials including texts and resources, fluency, time spent reading, and books and materials for home use, have on reading achievement.

According to Stein, Johnson, and Gutlohn (1999) the research of the past ten years has documented the importance of successfully learning to read in the primary grades. Yet the rate of students experiencing reading failure is quite high. Research puts that number between 20% to 25% of the school population. In a longitudinal study of students from first through fourth grade, Juel (1988) reported that the probability that a poor reader at the end of first grade would remain a poor reader in the fourth grade was .88. Students having difficulty reading will normally engage less in reading activities. This would lessen the opportunity to benefit from the development of language, vocabulary, and background knowledge that their more accomplished peers would gain. Researchers suggest that students who fail to read in their early school years are at high risk of falling behind in their development of literacy skills, which creates a widening gap between good and poor readers as they progress through school. The importance of early reading success has prompted

educators to reexamine curricular materials.

The reading materials need to be examined for the two related features of beginning reading which are phonics instructional approaches and decodable text. Research has identified the explicit phonics approach as the most effective. This means that the students are encouraged to sound out unfamiliar words. It is not until the word has been sounded out that the students are encouraged to use their oral vocabulary to check to see that the word has been decoded accurately. Finally, the students turn to the context to make the final check for accuracy. A review of research has shown this approach lead to higher achievement, particularly for the at risk students (Foorman, Francis, Fletcher, Schatschneider, & Mehta, 1998).

Secondly, educators need to examine reading materials for decodable text. Decodable text refers to text which contains a high percentage of words associated with the letter-sound correspondences that have previously been introduced. Decodable text gives the students an opportunity to use and practice their new phonics skills while reading. The text that the students are reading can be considered decodable only by examining the correlation between the instructional sequence of phonics instruction and the words in the text. Appropriate materials need to be used if students are to be successful readers (Stein, Johnson, & Gutlohn, 1999).

Resources, human and non-human, can also impact reading achievement. In addition to inappropriate curriculum, the attitudes of faculty and administration can impact learning. When school personnel have low expectations, it can translate into an undemanding curriculum, a staff not keeping up with current teaching methods, the unavailability of books and other materials, crowded classrooms, and so forth. It is unfortunate that schools with these characteristics are often in the low-income areas where resources for out-of-school achievement are already limited (Snow,

Burns, & Griffin, 1998).

Teachers are identifying students who need reading help and often recommending their students for extra reading support. According to Rasinski, (2000), one of the most common signals of a poor reader is slow, disfluent reading. He calls it inefficient reading. Some of these students exhibit good comprehension, but their oral reading is labored and unenthusiastic. Excessively slow reading leads to frustration, the tendency to do less reading, the loss of skill and knowledge gained through reading, and is often associated with poor comprehension. The poor reading fluency deters children from reading and the lack of reading adds to the lack of reading fluency. Allinder, Dunse, and Brunken (2001), also point to fluency as a critical aspect of good reading. If reading achievement is to be attained, steps need to be taken to improve reading fluency. They point out that non-fluent reading is caused by poor decoding skills. When the decoding skills become automatic, readers become fluent and able to devote their cognitive resources to comprehension.

Reading volume needs to be considered as a source of low-reading achievement. Studies have consistently shown a potential relationship between reading volume and reading achievement. It has been documented that added reading time is just as effective or more effective than traditional instruction in enhancing reading comprehension. It was found that the average higher-achieving student reads approximately three times as much each week as their lower-achieving peers. Some researchers agree that ninety minutes a day would substantially improve reading fluency and comprehension (Allington, 2001).

In addition to reading volume, appropriateness of reading materials need to be reviewed as a cause of low reading achievement. Readers generally prefer reading text that is less demanding unless they have an extreme interest in a certain topic.

Studies have been done that demonstrate that assignments done with high rates of success correlated to better learning and improved students attitudes toward the material. Tasks that were too hard produced negative attitudes and more off task behaviors. It was also found that between 40% and 60% of school children were reading anthologies appropriate for their reading level. This would mean that almost half of the students were using materials that were too difficult. It would follow that schools need to provide more appropriately leveled materials. Additionally, classrooms should have a large library. It was determined that where there are more books there is more reading. More reading leads to better reading if the reading is interesting and appropriately leveled. While putting good books into the classrooms is a priority, it is also important to get books into homes. This would ensure children's access to good books outside of school. Most children of middle to upper income families have access to books at home. In lower income areas many families cannot afford to buy books resulting in reduced reading outside of school (Allington, 2001).

There are many causes linked to poor reading achievement that need to be examined before appropriate solutions can be applied.

Chapter 3
The Solution Strategy

Literature Review

The researchers returned to their literature review to find possible solutions for the causes of poor reading rate and low reading achievement as stated in chapter 2. To address the multiple causes of poor reading achievement, researchers have suggested a variety of possible solutions. The multiple causes have been grouped into three major categories; outside school influences, variables within individuals, as well as home and school environments. Research has documented that schools alone cannot solve this problem, therefore there is a need for a collaborative effort among parents, preschools, and elementary schools.

Before students get to a school environment the first and most important educators are the caregivers. There is evidence that the caregiver's beliefs and attitudes toward literacy have a major influence on a child's early literacy development (DeBaryshe, 1995; Baker,Serpell, & Sonnenschein, 1995; Spiegel, 1994). It has also been found that caregivers who have a belief that reading is a source of entertainment produce children with a better attitude toward reading, than do parents who emphasize reading skills with their children (Baker, Scher, & Mackler, 1997). In addition, another study found that children who view school learning as unimportant to

every day life were not motivated to learn (Purcell-Gates, 1994; Stipek, Feller, Daniels, & Milburn, 1995).

A study of a parent child relationship during shared reading experiences showed that the child asked thousands of questions (Yaden, Smolkin, & Conlon, 1989). When the parent was shown how to respond appropriately, the child showed better reading gains (Whitehurst, Arnold, Epstein, & Angell, 1994). Caregivers can be shown how much they influence the development of literacy in their child. Print awareness, concepts and functions, knowledge of narrative structure, literacy of sense of enjoyment, vocabulary and discourse patterns are all established in the early developmental years within the home (Snow & Taburs, 1996). Caregivers who believe that their child is interested in reading are more likely to provide a variety of print-related experiences than the parent who does not perceive that interest. It has been found that children who come to school from a print rich environment are more prepared to read.

There are four major ways that caregivers can transfer literacy to their children. The first being simple and direct transfer. This would be the print rich environment which may include refrigerator magnets, posters, materials to create lists, newspapers, books, and magazines. This type of environment helps the child to become aware of the importance of print. Next, is participation in literacy practice. The key to this is the caregivers' modeling of literacy as being an important part of solving problems. Caregivers who engage children in this practice of using literacy for problem solving are teaching their children some of the purposes of literacy (Goodman, 1986). In addition, parents can transfer literacy through enjoyable activities. Activities such as story book reading promote positive feelings about books and literacy (Taylor & Strickland, 1986). Caregivers who promote questioning, humor,

and enjoyment rather that focusing on skills produced more fluent positive readers. Finally, caregivers play a significant role in the language development of their children. Some examples of this may be singing songs from the television and radio, chanting rhymes and other rhyming games, and also participation in story telling. Children of any background who have been highly encouraged to be verbal will develop a higher level of literacy (Snow & Tabers, 1993).

The role of the caregiver is critical to the development of early literacy. Many caregivers do not have the training, materials, or resources to make this happen. Families of low socioeconomic status have less opportunity to prepare their children for reading. As a result, several organizations have been developed to aid parents in preparing children for school. One program, called Parents as Teachers, begins in the third trimester of pregnancy and continues until the child is three years old. It has been demonstrated that children at age three who are in the program perform significantly better than non-participating counterparts when given tests which measure language and cognitive growth (National Defussion Network, 1996).

Home Instruction Program For Preschool Youngster (HIPPY) is a home based instructional program where parents are highlighted as the child's first teacher. The program emphasis is on reading readiness skills and makes reading a parent child shared activity (Baker & Piotrkowski, 1996).

Another program is the Head Start Program (Neuman, Hagedorn, Celano, & Daly, 1995). This program provides families with books and also stresses shared interaction with the child through story book reading. After a short time, the story book reading becomes more interactive with the children participating in more discussion. Children who receive this assistance develop a better concept of print and receptive language than do children who do not receive this intervention.

The last program is a family based literacy program, which was established in 1989. The Even Start Family Literacy Program also supplies reading materials to the home. It encourages parents to raise their expectations of their children's success in school. The program also stresses the skills necessary for reading readiness (Snow, Burns, & Griffin, 1998).

Another concern is the awareness of the cultural differences and their relationship to reading. As mentioned in the causes section of this paper, minority students, African American, Native American, Hispanic, and some Asian and Pacific Islander groups experience less reading success than their European background counterparts (Entwisle & Alexander, 1988). Though these families value literacy and often directly teach their children pre-reading skills, the children continue to fall behind. One research found that African American students, though they may be equal in skill and ability to their European background counterparts, continued to experience poor performance (Steele, 1992). He refers to this as "misidentification with school". What is meant by this is that there has been a long history of racism and lack of expectation for the minority student. To respond to this it is necessary for schools to make some institutional changes which would allow cultural accommodation. It is documented that there is a direct connection between cultural compatibility, appropriate motivational strategies, speaking or participation styles and student participation and success (Goldenberg & Gallimore, 1989).

Regardless of socioeconomic status and cultural background, it is imperative for children to be exposed to a print rich environment. Children of lower socioeconomic status need to be provided with the opportunities to be exposed to many forms of print and literacy. Communities need to come together to find ways to help supply the materials and teach the caregivers to give support to these children.

In addition to outside school influences, variables in individual students also contribute to poor reading success. Research has shown that special education early in a child's life has a great impact on children with cognitive deficits. While children have good sensory systems they still exhibit delays in learning and developing their ability to remember, think, coordinate and solve problems (Carta, Schwartz, Atwater, & McConnell, 1991; Castro & Mastropieri, 1986; Mallory, 1992).

It has been found through numerous studies that children with cognitive deficits benefit from the same strategies as students without these deficits. While the average child absorbs some early literacy strategies, children with cognitive deficits need direct instruction of pre-reading strategies and more repetition of those strategies. Parents and other caregivers need to spend time one on one talking with children, reading books with them, providing writing materials, supporting dramatic play, demonstrating the uses of literacy, and maintaining a playful relaxed atmosphere around literacy activities. For most children, including those with cognitive deficits, these primary prevention activities will ensure that they are ready for reading. For the child with cognitive deficits, excellent preschools can also make a difference in minimizing their risk for low achievement (Snow, Burns, & Griffin, 1998).

As children transition into the school setting, assessment will take place and appropriate strategies will be employed to help the children of all abilities achieve reading success. There are many possible strategies for helping students improve their reading success. Teachers have the ability to work with small groups of students who are needing similar reinforcement.

One example of these strategies would be paired oral readings. This method would work by placing students with partners. The partners would be given a selected reading passage to be read silently by each student one time. The students

would then take turns reading the passage three times to each other. The listening student would take the role of the teacher, offering positive comments and feedback to the student who is reading. As the students become comfortable and efficient with this method variations can be added. One variation might be for the students to ask questions of each other about the text . Another variation could be the discussion of specific word meanings (Zutell & Rasiniski, 1991).

One of the most important aspects of reading is modeling. Teachers should always model fluent oral reading in the classroom. Fluent reading can be modeled while reading from picture books, newspapers, poetry books, chapter books, and other language experiences. Many students who struggle with reading fluency have difficulty understanding and hearing the proper way a passage should be read. The constant exposure to good modeling will help those students develop improved fluency and expression. In classrooms, teachers should be modeling fluent reading to all students especially those who are struggling with this skill (Zutell & Rasiniski, 1991).

Repeated reading is another common approach to helping students with reading fluency. Repeated reading is done on an individual level. Students are tested to find their appropriate reading level. Then several reading passages are selected for that particular level. Students listen to the passages on a tape recorder and then practice reading the passages numerous times. It is suggested that students read to a goal of 75 words per minute with 98% accuracy and good expression. A student reaching that goal may move up to the next leveled reading passage. Repeated readings are valuable in that they increase reading rate and accuracy and also increase comprehension. This increase in reading rate and comprehension is then transferred to new text which will help the student in all subject areas (Dowhower,

1987).

In addition to the strategies listed above, there are several other strategies that are being used in classrooms. These strategies may be used with small groups or partners, while others may be used as whole class or individual strategies. Some of these strategies include shared reading, choral reading, oral recitation lessons, readers theater, echo reading, Read Naturally (a reading fluency program), puppet shows, shared book experiences, book buddies, author's purpose, making predictions, story elements, graphic organizers, relating personal experience to story events, and peer tutoring to name just a few.

It is clear that there are many possible solutions to the problem of low reading achievement and poor reading rate. The challenge is finding the right combination to accommodate all of the different student needs.

Project Objectives and Processes

As a result of daily repeated readings during the period from October, 2002, to December, 2002, the 40 second and third graders will improve reading fluency by 20% as measured by pre and post test criterion. Changes in attitude about reading will be measured by a student survey administered before and after the intervention.

Processes to be used to implement this objective include the following:

1. Develop appropriate reading passage;

2. Administer pretest to all subjects with the same reading passage;

3. Subjects will be required to participate in daily repeated readings of passages that are chosen by the teacher;

4. Subjects will chart progress before and after practice;

5. Allow time for oral reading practice with peers;

6. Silent reading time - subject choice of text.

As a result of daily repeated readings and daily reading instruction during the period from October, 2002, to December, 2002, the 40 second and third graders will improve reading fluency by 20% in terms of words read per minute. Improvement will be measured by comparing the pretest to the post test. The post test will be the same one minute timing that was used as the initial pretest before administering the treatment. It is hoped that this increase in fluency will increase the subjects' comprehension of written text.

Processes to be used to implement this objective include the following:

1. Use vocabulary activities to increase word decoding and understanding.
   definitions - context clues - syllables - compound words - synonyms and antonyms

2. Make and change predictions as subjects read.

3. Connect text to prior knowledge, new text, and experiences.

4. Make charts to help subjects identify essential parts of a story as well as define the author's purpose.

5. Develop understanding of text through cause and effect.

6. Improve subjects' ability to determine main idea and important events through the use of reading response journals, graphic organizers, or story boards.

Project Action Plan

When	Strategy	Participants	Purpose
Week 1	Administer Pretest Conduct student survey	Students in Sites A and B Students in Sites A and B	Identify current reading rate Identify students' attitudes about reading
Week 2	Model repeated reading technique Practice repeated readings Story elements	Teachers in Sites A and B Students in Sites A and B Students in Sites A and B	Introduce reading strategies Clear understanding of process Comprehension development
Week 3	Begin daily repeated readings Create posters Buddy read twice weekly Reader's Response to story	Students in Sites And B Students in Sites A and B Students in Sites A and B Students in Sites A and B	Improve reading fluency Visual cues of comprehension skills Oral reading practice Summarize main idea and events
Week 4-6	Continue repeated readings Analyze story elements Context clues and decoding	Students in Sites A and B Students in Sites A and B Students in Sites A and B	Improve reading fluency Comprehension enrichment Vocabulary development
Weeks 7-9	Continue repeated readings Vocabulary - definitions Synonyms & antonyms wk.7-8 Author's point of view	Students in Sites A and B Students in Sites A and B Students in Sites A and B Students in Sites A and B	Improve reading fluency Strengthen word meanings Develop vocabulary Comprehension development
Weeks 10-11	Continue daily repeated readings Compound words-week 10 Syllables - week 11 Cause and effect wk. 10 -11	Students in Sites A and B Students in Sites A and B Students in Sites A and B Students in Sites A and B	Improve reading fluency Strengthen word meaning Strengthen decoding skills Comprehension skill
Week 12	Administer Post test Conduct student survey	Students in Sites A and B Students in Sites A and B	Determine reading fluency growth Monitor attitude changes

Methods of Assessment

Repeated reading to improve fluency was the intervention chosen by the researchers to address the problem of low reading achievement. The subjects will take part in this intervention for a period of twelve weeks. Each subject will be given a reading pretest before the intervention begins. From the pretest, a words-per-minute score will be taken and recorded. During that time the subjects will be recording their cold reads, which are readings of passages without practice, and also their final reads, which are readings of passages after intense practice of the passages. This will help the subjects assume some ownership of the program as well as give them clear evidence of progress. It is hoped that all subjects will see progress which in turn will motivate them to continue taking the treatment seriously. In addition, the subjects will be given a reading survey before and after the completion of the intervention. It is hoped the comparison of the surveys will show an improved attitude about reading. Also during the intervention period, the subjects will be receiving instruction and will practice a variety of reading skills during their normal reading instructional period. Subjects will be learning about synonyms, antonyms, story elements, author's point of view, syllabification, cause and effect, compound words, and building vocabulary through context clues and decoding. These areas will be measured through observation, daily work, and quizzes. The true focus of this intervention is the repeated readings. After twelve weeks, the subjects will be given a post test from which a words-per-minute score will be taken. The pre and post test scores will be compared to measure reading fluency progress. It is the hope of the researchers that all subjects will experience improved reading fluency scores.

CHAPTER 4

PROJECT RESULTS

Historical Description of the Intervention

The objective of this project was to improve reading fluency for the targeted second and third grade students and allow them to concentrate on reading comprehension. Research suggested many strategies for improving reading rate and fluency. The researchers selected and implemented repeated readings to affect desired results. They began by drafting a letter to the subjects' guardians explaining the intended program and requesting signed permission (see Appendix A). In addition, the researchers used the opening of school curriculum nights to thoroughly explain each component of the intended survey, pretesting, intervention, final survey, and post test to the subjects' guardians. Guardians were given an opportunity to ask questions. The researchers received permission from 100% of the subjects' guardians. Forty second and third graders would take part in the intervention.

After receiving permission, the researchers developed and administered a student survey. A sample of the survey is included in Appendix B. The purpose of this survey was to obtain student attitude about student reading. All 40 students at the two sites participated in the attitude survey.

In addition to the attitude survey, the researchers administered a pretest in order to document the initial reading rate of the targeted students at Sites A and B.

Refer to appendices C and D to view the pretests used for Site A and appendices E and F for the pretests used by the researchers at Site B. Both pretests were stories taken from the grade appropriate district reading series. The students were asked to read the story for one minute. Researchers noted the total number of words read, minus the total number of errors, to establish an initial reading rate. Appendix G contains the guidelines that the researchers followed to record fluency timing.

Each child was tested individually by a researcher. Students were removed from the distractions of the classroom to a quiet environment for testing. This setting was chosen to give each student an equal opportunity to perform optimally. Testing within the classroom could have given the other students waiting to be tested an opportunity to become familiar with the passage by repeatedly hearing it read by their peers. Students were given a brief background of the story they were about to read and then told that they were going to read for only one minute. The signal to be used to begin and end the reading period was explained and demonstrated.

The pretest was then administered. The total number of words read in a minute minus the number of errors was computed to find an initial words-per-minute reading rate for each student. Errors included the omission of words, insertion of words, word substitutions, reversals, mispronunciations, words provided by examiner after three seconds of wait time, proper names (counted only once), and skipped line (put back on line, 1 error). Self-corrections, repetitions, hesitations, and missed punctuation were not counted as errors. The scores of the initial pretest were recorded in preparation for the start of the chosen treatment, repeated readings.

All pretesting was completed during the first week of the researchers' action plan as initially designed. The researchers compiled the results and prepared the reading materials for the students to use during the implementation of the

intervention. Stories at each student's appropriate reading level were selected and put into individual student folders along with graph paper so subjects could track their own progress.

In the second week, along with the regular reading instruction emphasizing story elements, the researchers demonstrated the repeated reading process several times and answered questions. At Site A the researchers felt that since the subjects were in second grade more adult guidance would be needed. Therefore, the first step was to secure volunteer help on a weekly basis. The volunteers were given a half day inservice conducted by one of the researchers and the site reading specialist. They were given instructions on how to administer cold reads, monitor practice, and how to assess progress. The following day the pretests were administered to the students. Once the pretests were administered and the appropriately leveled materials were prepared, the repeated reading process began.

Each volunteer was given a subject to work with two times a week. The volunteer and the subject went to a quiet room with the appropriate reading passage. The subjects were asked to read the passage for one minute, while the volunteer marked the miscues. After the passage was completed, the subject graphed the number of correct words-per-minute on a graph with a colored pencil. Within the same session, the students then repeated this process two more times. After each read, the students graphed their results on the same sheet of paper using a different color. Using three different colors allowed the students to see their improvement after each read.

At Site B the first step of the process was a cold read. This meant the students read a never before seen passage for one minute. While reading, the students put pencil marks through any words they found themselves unable to decode or

understand. At the end of a minute, the students circled the last word read. The total number of words read were counted up as well as the number of pencil marks written down. The number of pencil marks was subtracted from the total number of words read. That score was graphed in blue pencil. Next, the same passage was practiced over and over during two twenty minute reading periods on two consecutive days. At the end of the second reading period, the students were timed again using the same process as used for the cold read. The score was computed and graphed along the same bar on the graph as the cold read, only this time in red pencil. This gave the students a very clear visual of their progress. It was hoped that being able to see progress on a regular basis would motivate the students to continue to improve. The process began all over again using a new reading passage. After this was clearly demonstrated and explained, the students were given a few practice periods to get accustomed to the process.

The next step was to begin the intervention in combination with regular reading instruction. The repeated readings began officially in the third week of the project. The repeated reading process took place each day right after lunch.

In addition to the repeated readings, the students at both sites were taught a variety of reading strategies and decoding skills during their regular reading instruction period. First, they were asked to make posters including visual cues of previously acquired comprehension strategies. The strategy posters were referred to each day during instruction as a reminder to be thoughtful readers. In addition to the posters, the students buddy-read twice during the week to improve oral reading and were asked to respond to their reading in response journals. The response journals were used to make the students more accountable for what they read and to encourage more thoughtful reading.

Throughout weeks four through six, the repeated readings continued. During this time period the students were receiving instruction on how to use the story elements to improve comprehension. Drawing attention to the characters, setting, plot, events, resolution, and solution helped the students to gain a better sense of order, a greater ability to develop accurate summaries, and to make better connections with other events and stories. Additionally, decoding skills and the use of context clues to identify and understand word meanings were being taught and promoted throughout this time period. It was during this time that one student from Site B dropped out of the program due to relocation.

Every attempt was made to keep the program as consistent as possible. During weeks seven through ten, an emphasis was placed on author's point of view, synonyms and antonyms, and vocabulary development during the regular reading instructional period. The purposes of these activities were to improve comprehension by recognizing different perspectives and challenging the subjects to apply this strategy, and to widen and strengthen the students' understanding as well as recognition of vocabulary.

In the last two weeks of intervention, weeks ten and eleven, the repeated readings continued as planned with the addition of three more reading strategies during the instructional period. The students worked on compound words during week ten, syllabification during week eleven, and cause and effect throughout weeks ten and eleven. The purposes of these strategies were to improve comprehension by being able to discriminate between cause and effect, to improve reading rate through the development of a stronger sight vocabulary, and to decode unrecognizable vocabulary quickly and correctly by breaking words into syllables.

In the last week of the project, repeated readings and normal reading

instruction continued. The researchers also administered the final reading attitude survey and reading post test at the end of the eleventh week. The results of both post tests will be reported and analyzed in the next section.

Presentation and Analysis of Results

As a result of the daily repeated readings and daily reading instruction during the period from October 2002 to December 2002, the 40 second and third graders were expected to improve reading fluency by 20% in terms of words read per minute.

The results of the pre and post test scores are shown in Table 1. The first observation was that all students improved their scores. This would be expected even if no special treatment was administered. The normal reading program and maturation should result in some improvement over a 12 week period.

Second graders at Site A improved their scores an average of 70.3%, while third graders at Site B improved their scores an average of 55.4%. Both of these results are well above the expected 20% improvement in scores. The lowest improvement percentage at Site A was 11.1% and at Site B the lowest percentage increase was 17.1%. The highest percentage increase at Site A was 139.1% and the highest percentage increase at Site B was 146.7%. By observation, the improvement percentages appeared greater for students who started out with relatively low scores. To test this observation, the table was rearranged in order of pretest scores from lowest to highest for each site. Then the improvement percentages were averaged for each quartile. The results are shown in Tables 2 and 3.

Table 1

Pre and Post Test Words-per-minute Fluency Rates for Students at Site A and Site B

Site A	Pretest	Posttest	% Increase	Site B	Pretest	Posttest	% Increase
01a	30	61	103.3	01b	129	187	45.0
02a	23	55	139.1	02b	69	106	53.6
03a	36	67	86.1	03b	64	106	65.6
04a	37	60	62.2	04b	170	199	17.1
05a	42	48	14.3	05b	123	164	33.3
06a	36	40	11.1	06b	87	106	21.8
07a	102	126	23.5	07b	31	64	106.5
08a	43	84	95.3	08b	107	moved	
09a	38	72	89.5	09b	104	138	32.7
10a	24	39	62.5	10b	111	149	34.2
11a	81	94	16.1	11b	71	111	56.3
12a	12	21	75.0	12b	102	141	38.2
13a	19	42	121.1	13b	58	102	75.9
14a	36	74	105.6	14b	154	185	20.1
15a	71	104	46.5	15b	48	87	81.3
16a	45	93	106.7	16b	78	123	57.7
17a	40	82	105.0	17b	15	37	146.7
18a	55	67	21.8				
19a	33	62	87.9	Average increase Site B			55.4%
20a	26	38	46.2				
21a	51	76	49.0				
22a	59	90	52.5				
23a	27	53	96.3				
Average increase Site A			70.3%				

Table 2
Second Grade Pre and Post Test Scores and Improvement

Lowest to Highest Subject	Pretest	Post Test	Individual Improvement	Improvement by Quartile
13a	12	21	75.0%	
22a	19	42	121.1%	
23a	23	55	139.1%	88.7%
11a	24	39	62.2%	
07a	26	38	46.2%	
17a	27	53	96.3%	
19a	30	61	103.3%	
14a	33	62	87.9%	81.7%
20a	36	74	105.6%	
01a	36	40	11.1%	
12a	36	67	86.1%	
10a	37	60	62.5%	
15a	38	72	89.5%	
18a	40	82	105.0%	78.9%
02a	42	48	14.3%	
16a	43	84	95.3%	
21a	45	93	106.7%	
08a	51	76	49.0%	
04a	55	67	21.8%	
09a	59	90	52.5%	34.9%
06a	71	104	46.5%	
03a	81	94	16.1%	
05a	102	126	23.5%	

Average Individual Improvement 70.3%

Table 3
Third Grade Pre and Post Test Scores and Improvement

Lowest to Highest Subject	Pretest	Post Test	Individual Improvement	Improvement by Quartile
17b	15	37	146.7%	
07b	31	64	105.5%	
15b	48	87	81.3%	102.6%
13b	58	102	75.9%	
03b	64	106	65.6%	
02b	69	106	53.6%	
11b	71	111	56.3%	58.3%
16b	78	123	57.7%	
06b	87	106	21.8%	
12b	102	141	38.2%	
09b	104	138	32.7%	31.7%
10b	111	149	34.2%	
05b	123	164	33.3%	
01b	129	187	45.0%	
14b	154	185	29.1%	28.9%
04b	170	199	17.1%	

Average Individual Improvement 55.4%

This further demonstrated that the greatest percentage improvement was achieved by the students with the lowest initial scores. For Site A students in the first quartile (lowest initial scores) improved an average of 88.7%, the second quartile 81.7%, the third quartile 78.9%, and the fourth quartile 34.9%. For Site B, students in the first quartile (lowest initial scores) improved an average of 102.6%, the 2nd quartile 58.3%, the third quartile 31.7%,and the fourth quartile 28.9 %.

This can be explained by the fact that students at the low end on the initial scores had more room for improvement. This is particularly true because there is a presumed upper limit on the number of words-read-per-minute that can be read appropriately. It was also observed that the second grade had a 70.3 % average improvement in words-read-per-minute which was greater than the 55.4% average improvement of the third grade. This could also be explained by the concept that the second grade had more room for improvement than the third grade. The average pretest score for the second grade was 42.0 words-read-per-minute while the average pretest score for the third grade was 88.4 words-read-per-minute. On the other hand, teachers observe that students who start behind often have a tendency to fall further behind their peers as they move through the grades.

Analysis of group performance demonstrated considerable improvement as well. Mean, median, and mode scores were computed before and after the treatment. Standard deviation and kurtosis were computed to provide perspective on the distribution of scores. T - tests were performed to determine the statistical significance of the improvement in mean scores (see Tables 4 and 5).

The mean scores for second grade at site A improved 25.3 points (60.2% while the mean score of the third grade at Site B improved 36.9 points (41.7%). For Site A, the median and mode before the treatment were somewhat lower than the mean.

This is consistent with the fact that there were some high scores that brought up the mean. After the treatment, the mean, median, and mode were almost identical (67.3, 67, and 67 respectively). This indicates an almost perfectly normal distribution. For Site B, the median before the treatment was somewhat lower than the mean, again indicating that there were high scores bringing up the mean. There was no mode for Site B on the pretest because no students had the same score. After the treatment at Site B, the mean, median, and mode were 125.3, 117, and 106 respectively, again reflecting some relatively high scores. The mode was of little consequence since it only reflected two students.

The standard deviation is a measure of how dispersed the scores were. There are two observations related to the dispersion of scores as measured by the standard deviation. First, the standard deviations for the third grade class (42.72 on the pretest and 44.84 on the post test) were much higher than the standard deviations for the second grade class (20.76 on the pretest and 24.64 on the post test). Second, both of the classes had a somewhat higher standard deviation on the post test than the pretest, reflecting a widening of the difference between the highest and lowest scores.

Kurtosis is a measure of the relative peakedness, or flatness of a distribution when compared to the normal distribution. Positive kurtosis indicates a relatively peaked distribution. Negative kurtosis indicates a relatively flat distribution. The kurtosis figures for the second grade scores are positive indicating a peaked distribution of scores. This means more scores in the middle range and fewer high and low scores. The kurtosis figures for the third grade class are negative for both the pretest and the post test. This indicates a flat distribution which makes the traditional focus of instruction on a large middle group inappropriate.

T - tests were performed to determine the statistical significance of the

improvements in mean scores for each of the two sites. This tells us the degree to which the improvement in mean scores could be random or by chance. The probability that the improvement in the scores was by chance was 1.1×10^{-10} for the second grade class and 8.1×10^{-12} for the third grade class . This does not prove that the change came about because of the treatment. It just clearly indicates that the improvement did not come about by chance.

Table 4
Second Grade Pre and Post Test Statistical Comparisons

Site A	Before	After
Mean	42.0	67.3
Median	37	67
Mode	36	67
Standard Deviation	20.76	24.64
Kurtosis	2.19	0.14

P(T<=t) two tail $11.11E^{-09}$
n = 23

Table 5
Third Grade Pre and Post Test Statistical Comparisons

Site B	Before	After
Mean	88.4	125.3
Median	82.5	117
Mode	N/A	106
Standard Deviation	42.72	44.84
Kurtosis	-0.38	-0.33

P(T<=t) two tail $8.12E^{-11}$
n = 16

As a secondary aspect of this research study, students' attitudes about reading were surveyed before the treatment was begun. The results of the reading survey from Site A are shown in Table 6. The researchers noted that at Site A while zero percent of the students felt frustrated when read to by a teacher, a small percent (9%) expressed frustration when read to by parents. Nineteen percent of the students felt frustrated when they were able to read with a friend. This percent dropped to 4% when the students read to themselves at home. Finally, the researchers noted that 72% of the students both loved to receive books as presents, and when they were given time, to read on their own.

Table 6

Initial Attitude About Reading Survey Results from Site A

How do you feel when:	Frustrated	O.K.	I Love It!
your teacher reads to you?	0%	71%	29%
your class has reading instruction time?	4%	53%	43%
when you can read with a friend?	19%	33%	48%
you read out loud to someone at home?	14%	62%	24%
someone reads to you at home?	9%	38%	53%
someone gives you a book for a present?	4%	24%	72%
you read a book to yourself at home?	4%	24%	72%

Similarly at Site B, (see Table 7), the researchers found that again zero percent of the students felt frustration when the teacher read to them and only 6% reported frustration when read to at home. While 23% were frustrated when asked to read aloud to someone at home, 100% of the students enjoyed reading by themselves at home. At Site A, 19% of the second graders expressed frustration while reading with a friend in contrast to 100% of the third graders at Site B reporting enjoyment while reading with a friend. Finally, 100% of the third grade students enjoyed receiving books as gifts.

Table 7
Initial Attitude About Reading Survey Results From Site B

How do you feel when:	Frustrated	O.K.	I Love It!
your teacher reads to you?	0%	24%	76%
your class has reading instruction time?	6%	47%	47%
when you can read with a friend?	0%	29%	71%
you read out loud to someone at home?	23%	59%	18%
someone reads to you at home?	6%	18%	76%
someone gives you a book for a present?	6%	29%	65%
you read a book to yourself at home?	0%	35%	65%

At the conclusion of the treatment, the researchers again administered the survey. There was observable but modest improvement in attitude for both sites

based on the survey results. The possible responses to the seven questions about how students felt about various aspects of reading were: *frustrated, ok, and I love it.* A comparison of responses before and after is shown in Tables 8 and 9.

Table 8
Summary of Results of an Attitude Test About Reading

Site A	Before	After
Frustrated	8%	6%
O.K.	43%	30%
Love It!	59%	64%

Table 9
Summary of Results of an Attitude Test About Reading

Site B	Before	After
Frustrated	6%	6%
O.K.	34%	60%
Love It!	60%	64%

It is important to keep in mind that the initial survey was given in September when attitudes about school are higher in general. The fact that attitudes, as measured by this survey, continued to be higher was considered to be a positive outcome.

Conclusions and Recommendations

The researchers observed that after a week of participation in the treatment, the students became more proficient with the process. Scores taken after this point demonstrated a definite increase in words-read-per-minute. It needs to be noted, however, that subject generated scores may not be as accurate as those computed by the researchers. The researchers would recommend giving the students a week of practice prior to recording scores.

It was also observed that the students were more comfortable with reading aloud in the classroom during the fifth week. The teacher researchers observed greater volunteer participation in oral reading in all subject areas. It was during weeks seven through ten that a change in attitude for some of the students was being noted at both sites. As the repeated readings continued, some of the subjects became restless and began asking when the experiment would end. At Site B, the children who were tiring of the program vocalized a desire to choose their own reading materials. While at Site A the students enjoyed the one-to-one adult attention, they also would have enjoyed being able to read a book of choice. With this information in mind, the researchers questioned the feasibility of continuing the treatment while allowing the students to select their own reading materials.

At Site B one parent requested that her child be allowed to read materials of his/her own choosing since the family would be moving and unable to stay long enough to complete the experiment. Permission was granted for this student to drop out of the treatment. With some discussion and encouragement, the rest of the subjects continued to cooperate with the program. It was becoming more difficult during this time period to continue the repeated readings consistently with all subjects. At both sites some subjects were taken out for speech support, others for

social work help, and it was necessary to work around other school activities such as assemblies. The researchers acknowledged the nature of a school schedule and understood the need to be flexible.

In conclusion, the educational researchers' concern over the number of students who scored in the bottom two quartiles of two standardized tests, and their concern about a lack of reading fluency, prompted the need to investigate the causes and possible solutions for the problems. Based on the analysis of the data, the research team concluded that repeated readings seems to have increased reading fluency as measured in the number of words-read-per-minute, thereby making reading more fluent and comprehension better. The data collected reflected the subjects' growth and development over a twelve week period. Pretest and posttest scores demonstrated convincing increases in words-read-per-minute. The researchers observed an increase in reading fluency and improved comprehension. While the researchers are happy to report that all subjects showed positive growth, it was most exciting to see the students who had initially scored in the lowest quartile demonstrate high levels of growth and confidence in their oral reading.

In comparing this treatment to the normal reading program, the researchers felt that the daily reading was the most valuable aspect of the program. While daily reading was beneficial for all students, it was felt that the students in the treatment demonstrated greater growth in word recognition. This would indicate that the repetition of a controlled vocabulary boosted the automaticity of a sight word vocabulary. The researchers would recommend that this treatment be considered for students exhibiting a low sight vocabulary. In addition to increasing sight vocabulary, the researchers observed that the comprehension improved as fluency improved. This improvement was noted through student work and testing in all curricular areas.

It is the researchers recommendation that teachers consider the repeated readings approach to improving fluency and reading comprehension. To keep interest high, teachers may consider alternating between teacher chosen reading passages and passages chosen by the student. Students seemed to enjoy the approach and the results were very positive.

Additional research in this area would also be desirable and warranted given the importance of reading. It is difficult to structure research projects that are conclusive in drawing cause and effect conclusions because of the ethical and political problems of withholding promising treatments from students in a control group. However, additional research projects in reading fluency and comprehension could shed more light on this important area of education.

As teachers, we will continue to use the repeated readings approach. We are convinced of its value. We will also seek out other approaches to improving reading fluency and comprehension in our classrooms.

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APPENDICES

Appendix A

Guardian Permission

Saint Xavier University
Consent to Participate in a Research Study
Improving Reading Fluency Through Repeated Readings

Dear Parent or Guardian,

I am currently enrolled in a master's degree program at Saint Xavier University. This program requires me to design and implement a project on an issue that directly affects my instruction. I have chosen to examine improving reading fluency.

The purpose of this project is to improve students' reading fluency by using daily repeated readings. It will benefit your students by becoming more fluent readers which will also help with their comprehension. It will also help to build self-confidence when reading orally.

I will be conducting my project from October through December. The activities related to the project will take place during regular instruction delivery. The gathering of information for my project during these activities will offer no risk of any kind to your child.

Your permission allows me to include your students in the reporting of information for my project. All information gathered will be kept completely confidential, and information included in the project report will be grouped so that no individual can be identified. The report will be used to share what I have learned as a result of this project with other professionals in the field of education.

Participation in this study is completely voluntary. You may choose to withdraw from the study at any time. If you choose not to participate, information gathered about your student will not be included in the report.

If you have any questions or would like further information about my project, please contact me at school, 719-5865.

If you agree to have your child participate in the project, please sign the attached statement and return it to me. If you wish, I will be happy to provide you with a copy of this form.

Sincerely,

***Please sign and return by September 27, 2002**

Consent to Participate in a Research Study
Improving Primary Students Reading Fluency Through Repeated Readings

I, _____, the parent/legal guardian of the minor names below, acknowledge that the researcher has explained to me the purpose of this research, identified any risks involved, and offered to answer any questions I may have about the nature of my child's participation. I freely and voluntarily consent to my child's participation in this project. I understand all information gathered during this project will be completely confidential. I also understand that I may keep a copy of this consent form for my own information.

NAME OF MINOR:_____

_____ _____
(Signature Parent/Legal Guardian) (Date)

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Appendix B

Reading Survey

Look at the picture meanings below. After each statement, circle the picture that best describes how you feel.

Frustrated OK I Love It

How do you feel when:

1. Your teacher reads to you

2. Your class has reading time

3. You can read with a friend

4. You read out loud to someone at home

5. Someone reads to you at home

6. Someone gives you a book for a present

7. You read a book to yourself at home

On the back of this paper, draw a picture of your face while you are reading.

Appendix C

Pretest Site A

Make A Splash

Ed lived on a big island of ice with Betty, Freddy, Al, and a lot of other penguins. Every day they had fun throwing snowballs and sliding on the ice.

But they always watched out for Ernest, the big whale. Every time he went by...SPLAT! Ed and everybody got soaked.

"Watch what you are doing!" Betty would yell. But Ernest swam right by.

"Ernest doesn't even notice penguins," said Ed.

One night when Ed was asleep, there was a loud cracking noise. It sounded like ice breaking. Ed thought it was a dream. When Ed woke up in the morning, he found that the island of ice had broken in half. He was all alone on an island of his own.

Ed's friends got smaller and smaller as his island drifted away. Ed watched until he couldn't see them anymore.

Then he walked around his island. There was nobody on it at all. At last he came to his own footprints again.

Some birds flew over. Ed waved, but they did not wave back. "I guess I will be here the rest of my life," Ed said.

At the end of the day, he wrote "I GIVE UP' in big letter in the snow.

From Macmillan/McGraw/Hill

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Appendix D

Pretest Site A Tester Copy

Make A Splash Level 7

(I want you to read this part of a story about a poor penguin named Ed and his friends. They live on an island of ice. Do your best and read it to understand it.)

Ed lived on a big island of ice with Betty, Freddy, Al, and a lot of 16
other penguins. Every day they had fun throwing snowballs and 26
sliding on the ice. 30

But they always watched out for Ernest, the big whale. Every 41
time he went by...SPLAT! Ed and everybody got soaked. 51

"Watch what you are doing!" Betty would yell. But Ernest swam 62
right by. 64

"Ernest doesn't even notice penguins," said Ed. 71

One night when Ed was asleep, there was a loud cracking noise. 83
It sounded like ice breaking. Ed thought it was a dream. When Ed 96
woke up in the morning, he found that the island of ice had broken in 111
half. He was all alone on an island of his own. 122

Ed's friends got smaller and smaller as his island drifted away. 133
Ed watched until he couldn't see them anymore. 141

Then he walked around his island. There was nobody on it at all. 154
At last he came to his own footprints again. 163

Some birds flew over. Ed waved, but they did not wave back. "I 176
guess I will be here the rest of my life," Ed said. 188

At the end of the day, he wrote "I GIVE UP' in big letter in the snow. 204

Name_____ **Total words read** _____

Date _____ **# of errors** _____

Words read correctly _____

From Macmillan/McGraw/Hill

Appendix E

Pretest Site B Student Copy

Catch A Sunflake

Every day, my father, whose name is John, walked in the park with my mother, Aiko. They sat on a bench and talked. But my father was afraid to invite my mother to dinner.

If we go to a restaurant, he thought, I'll go hungry because I don't know how to eat with chopsticks. And if I go hungry, I'll act like a bear. Then Aiko won't like me. I'd better not ask her to dinner.

My mother wondered why my father never invited her to dinner. Perhaps John is afraid I don't know how to eat with a knife and fork and I'll look silly, she thought. Maybe it is best if he doesn't invite me to dinner.

So they walked and talked and never ate a bowl of rice or a piece of bread together.

One day, the captain of my father's ship said, "John, in three weeks the ship is leaving Japan."

My father was sad. He wanted to marry my mother. How can I ask her to marry me? he thought. I don't even know if we like the same food. And if we don't, we'll go hungry. It's hard to be happy if you're hungry. I'll have to find out what food she likes. And I'll have to learn to eat with chopsticks.

So he went to a Japanese restaurant.

Everyone sat on cushions around low tables. My father bowed to the waiter. "Please, teach me to eat with chopsticks."

"Of course," said the waiter, bowing.

From Macmillan/McGraw/Hill

Appendix F

Pretest Site B Tester Copy

Catch A Sunflake

(You are going to read part of a story about two people who meet while living in Japan. She was a Japanese schoolgirl named Aiko, and he was an American sailor named John. Do your best and read it to understand.)

Every day, my father, whose name is John, walked in the park 12
with my mother, Aiko. They sat on a bench and talked. But my father 26
was afraid to invite my mother to dinner. 34

If we go to a restaurant, he thought, I'll go hungry because I 47
don't know how to eat with chopsticks. And if I go hungry, I'll act like a 63
bear. Then Aiko won't like me. I'd better not ask her to dinner. 76

My mother wondered why my father never invited her to dinner. 87
Perhaps John is afraid I don't know how to eat with a knife and fork 102
and I'll look silly, she thought. Maybe it is best if he doesn't invite me 117
to dinner. 119

So they walked and talked and never ate a bowl of rice or a 133
piece of bread together. 137

One day, the captain of my father's ship said. "John, in three 149
weeks the ship is leaving Japan." 155

My father was sad. He wanted to marry my mother. How can I 168
ask her to marry me? he thought. I don't even know if we like the 183
same food. And if we don't, we'll go hungry. It's hard to be happy if 198
you're hungry. I'll have to find out what food she likes. And I'll have to 213
learn to eat with chopsticks. 218

So he went to a Japanese restaurant. 225

Everyone sat on cushions around low tables. My father bowed 235
to the waiter. "Please, teach me to eat with chopsticks." 245

"Of course," said the waiter, bowing. 251

Name_____ **Total words read** _____

Date _____ **# of errors** _____

words read correctly _____

From Macmillan/McGraw/Hill

Appendix G

Guidelines for Reading Fluency

Fluency Timing

As the student reads the story, mark the errors by putting a slash through the words read incorrectly. At the end of a minute, place a bracket (}) after the last word and say, "stop."

Words per minute: total words read minus errors

ERRORS

- omissions
- insertions
- substitutions <u>home</u>
  house
- mispronunciations <u>bit</u>
  bite
- words provided by examiner (provide word after 3 seconds)
- proper names (count only once)
- skipped line (put back on correct line, 1 error)
- reversals (1 error) <u>father said</u>
  said father

NOT ERRORS

- self-corrections
- repetitions
- hesitations
- missed punctuation (circle)

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