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AUTHOR Curran, Lisa; Guin, Lauren; Marshall, Laura

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ABSTRACT

This study described a program designed to increase student reading comprehension in order to improve academic achievement. The targeted population consisted of third and eighth grade students in two schools located in Northern Illinois. Evidence for the existence of the problem included scores from the Stanford Test, low academic performance on teacher made tests, teacher observations, and surveys. Analysis of the probable cause data revealed that reading comprehension could be broken down into six areas of concern. Students were not spending much time reading in or out of school. Early reading programs had little or improper instruction in phonics. Teachers lacked the proper training in reading instruction. There was a limited amount of resources provided by the district. There was a large range of ability within the classroom, which had impacted the ability of teachers to address each student's reading needs. Finally, teachers were also dealing with a high mobility rate throughout the district, which affected learning. A review of the solution strategies suggested by the professional literature, combined with an analysis of the settings of the problem, resulted in the development of an after school program combining cross-age tutoring by pairs, phonics instruction and reciprocal teaching. Post intervention data indicated an increase in students' ability to decode words, and an increase in comprehension. Appendixes contain the teacher survey and two sample worksheets.(Contains 44 references, 2 figures, and 11 tables.) (Author/RS)

IMPROVING READING ABILITY THROUGH THE USE OF CROSS-AGE TUTORING, PHONO-GRAPHIX, AND RECIPROCAL TEACHING

Lisa Curran
Lauren Guin
Laura Marshall

An Action Research Project Submitted to the Graduate Faculty of the

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SIGNATURE PAGE

This project was approved by

Dr. Hellyn H. Semmholtz

Advisor

Marguerite A. VanScoyoc Nancy Christy

Advisor

Beverly Gulley

Dean, School of Education

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CHAPTER 1

PROBLEM STATEMENT AND CONTEXT

General Statement of the Problem

The targeted group of third and eighth grade students demonstrated a lack of reading ability which interfered with academic growth resulting in performance below grade level. Evidence for the existence of the problem included scores from the Stanford Test, low academic performance on both teacher made tests and textbook publisher made tests.

Immediate Problem Context

There were two schools involved in the research project. Each school will be described individually as site A and site B. Both are located in a Midwestern state, in a rural community, equidistant from two major metropolitan cities. Site A, an elementary school, and site B, a junior high school, are located next to each other on the same block.

Site A originally opened in 1966 as an elementary school servicing pre-kindergarten through sixth grade with a total of 26 classrooms. There were a total of 558 students enrolled with the following ethnic make-up: 29.9% Caucasian, 53.3% African-American, 14.9% Hispanic, and .9% Asian. Of the enrolled students, 59.3% came from low-income families. Low-income students may come from families

receiving public aid, may live in institutions for neglected or delinquent children, may be supported in foster homes with public funds, or may be eligible to receive free or reduced-price lunches. The student mobility rate was based on the number of students who enroll in or leave a school during the school year. Students were counted each time they transferred in or transferred out of the school. The mobility rate at this site was 59.6%. A perfect attendance rate (100%) meant that all students attended school every day, and the attendance rate at this site was 93.3% with no reported incidence of chronic truancy. Chronic truants were students who were absent from school without valid cause for 18 or more of the last 180 school days. Limited-English-proficient students included students whose first language was not English and who were eligible for bilingual education. Of the student population, there were 2.3% who were eligible for bilingual education.

Average class size was 22 students with a teacher pupil ratio of 1:18.5. The following number of minutes was allocated to each of the academic subjects: Language Arts – 160, Math – 60, Science – 30, and Social Studies – 25.

There were two administrators, a principal and an assistant principal, 14 support staff, and 31 full-time teachers with an ethnic make-up as follows: 93.3% Caucasian, and 6.7% African American. On average, the teachers had 7.9 years of classroom experience with 51.6% possessing a master's degree.

Site B originally opened in 1949 servicing kindergarten through eighth grade. It was converted to a junior high servicing seventh and eighth grade students, with a total of 36 classrooms. There were a total of 548 students enrolled with the following ethnic make-up: 41.2% Caucasian, 41.6% African-American, 14.8% Hispanic, and 2.4% Asian.

Of the enrolled students, 47.1% came from low-income families. Low-income students may come from families receiving public aid, may live in institutions for neglected or delinquent children, may be supported in foster homes with pubic funds, or may be eligible to receive free or reduced-price lunches. The student mobility rate was based on the number of students who enrolled in or left a school during the school year. Students were counted each time they transferred in or transferred out of the school. The mobility rate for this site was 24.9%. A perfect attendance rate (100%) meant that all students attended school every day, and the attendance rate at this site was 91% with a chronic truancy rate of 4.8%. Chronic truants were students who were absent from school without valid cause for 18 or more of the last 180 school days. Furthermore, 3.1% of the students were eligible for bilingual education. Limited-English-proficient students included students whose first language was not English and who were eligible for bilingual education.

Average class size was 22.1 with a teacher pupil ratio of 1:16.7. The following number of minutes was allocated to each of the academic subjects: Language Arts – 50, Math – 50, Science – 50, and Social Studies – 50.

There were three administrators, a principal and two assistant principals, eight support staff, and 33 full-time teachers with an ethnic make-up as follows: Caucasian 82% and African-American 18%. Of the staff, 64% were female and 36% male. On average, teachers had 8.8 years of classroom experience with 39% possessing a master's degree or higher.

This school district served approximately 2,800 children in grades K-8. There were five K-6 buildings and one junior high composed of seventh and eighth grade

students. It was the sixth largest district in the county with a diverse student enrollment of approximately 44% African-American and 14% Hispanic. The balance of 42% was primarily Caucasian with a small representation of other ethnic groups. Low-income families made up 53.3% of the district's enrollment. The mobility rate for the district was 33.1% as compared to the state rate of 18.4%. Much of this mobility was related to the fact that the district contained the county's highest density of Section 8 Federally Subsidized Housing. The district had more than 15% of its population receiving special education services. The average class size for the district was 22.1, with a teacher pupil ratio of 22:1.

The 161 full-time teachers had the following ethnic make-up: 88.2% Caucasian, 9.3% African-American, 1.2% Hispanic, and 1.2% Asian. Of the district staff, 17.9% were male and 82.1% were female. On average, the teachers had 13.8 years of classroom experience with 58.3% possessing a master's degree or higher and an average salary of $52,851.

The district's reported operating expenditure rate per pupil of $5,087, was $1,198 lower than the average of other elementary school districts in the county. The district will lose 63% of the generated 6.9 million dollars in district funds over the next five years, due to the loss of a major revenue source from a local power plant. With the permanent closure, the revenue source of this school district and other taxing bodies within the community were placed in jeopardy.

The Surrounding Community

The community was established as a theocracy in the early 1900's in a Midwestern state located between two major metropolitan cities. A theocracy was a

type of government run by a religious founder and a board consisting of parishioners. The initial formation of the community centered around one major church. Within six years new congregations formed and today thirty-four various groups exist. It was one of two preplanned cities in the country, with mapped streets that were laid out in a symmetrical fashion. Areas were set aside to establish recreational parks and services. Today it had the second largest park district in the state. Since its creation, the community had always been racially and ethnically diverse.

In 1939, the theocracy collapsed and a commission form of government was established so that the mayor and commissioners were elected at large. The city's diverse ethnic population drastically changed in the early 50's and 60's when many southern white and black families migrated to the area seeking employment and moderate housing facilities. The population in the community changed even more due to the opening of a military base in a nearby community. Also, in the late 60's and 70's a major power plant was built which until the late 90's had greatly affected the municipal revenue in the community.

As of the 2000 census, the population was 22,866 with housing that consisted of a mix of small bungalows often referred to as starter homes and apartments. The average home value was $68,000 as compared to the county average of $136,700. The average income was $34,661 as compared to the county average of $52,308. The poverty rate was 13.2% which was almost triple that of the county's 5.2%. The poverty rate was based on the number of families in the area who qualified for assistance through a federal program.

The economic base of the community consisted of small privately owned businesses and five nationally known corporations. The community also had a major hospital that specialized in cancer research and treatment. With the closure of the power plant, the economic future of the community remained uncertain.

National Context of the Problem

The problem of students reading below grade level had generated concern at the state and local levels (McGuinness, 1997). According to McGuinness the United States was one of the only countries that had instituted a national literacy reading test. This test was designed by reading experts and was aimed at creating a national norm based on absolute standards of literacy and not on demographic or ethnic diversity. McGuinness stated "this puts the United States in the unenviable position of being the first nation in the English speaking world to discover the shocking truth about actual literacy rates, a truth that has revealed a 'literacy crisis' in America" (McGuinness, 1997, p.8). The test had four levels of proficiency: advanced, proficient, basic, and below basic. The national norm was defined as the population whose scores on a test provide a set of standards to which the scores of subsequent test takers could be referenced. Advanced students were those who had scored significantly above the national norm. Scoring above the national norm meant the student was proficient. Basic scores meant the student scored right at the national norm level. Below basic meant that students could not understand the context of what they had read. They were thus considered functionally illiterate based on the standards set for their particular grade level. Students testing below basic ranged from 27% in New Hampshire to 75% in Washington D.C. (McGuinness, 1997). With one quarter to three quarters of our

students scoring below basic, it was apparent this was not a small local problem. The issue of reading and literacy was a widespread national problem.

The 1994 National Assessment of Educational Progress (NEAP), a federal program that collected data on student progress, indicated that 42% of fourth graders, 31% of eighth graders, and 30% of twelfth graders were reading at a "below basic" level. This meant they were unable to understand uncomplicated narratives and high-interest information texts. "These results indicate that every school in this country has a number of students who are failing the task of learning to read" (Cornerstone, 2001, p.1). Also in an article entitled "Why Has Reading Lost Its Way?" one-third of Florida's fourth grade students failed the FCAT reading test. "This means that 278,000 elementary school children can't read fluently, a finding that mirrors nationwide results" (St. Petersburg Times, 2001, p.1).

Teaching children how to read was a complex issue. One of the central problems was a general lack of teacher training in reading. Researchers found that "teachers are ill-equipped to closely monitor a child's reading, and they don't know how to use their observations to diagnose problems" (St. Petersburg Gazette, 2001, p.3).

There also existed a problem in how educators had gone about trying to teach the process of reading and writing. Whole language and phonics instruction were two of the most commonly used teaching practices. The whole language approach stemmed from the "central idea that reading is natural, in the same way that learning to speak is natural" (McGuinness, 1997, p. 33-34). With this approach children would naturally learn to teach themselves to read and write by trial and error. Children used literature based picture books to help them discern contextual cues from pictures and text. Also

students were encouraged at a very young age to write stories using invented spelling. Invented spelling was writing words without regard to conventional spelling practices by sounding out letters (McGuinness, 1997, p. 51-52). For example, "But they were safe." would have been spelled "but tha yr saf" (McGuinness, 1997, p. 4).

Phonics was another method used to teach reading, which reemerged in partial response to the book *Why Johnny Can't Read*, by Rudolph Flesch (1955). Students were taught that speech had sounds and that these sounds could be spelled out using letters. The theory was that children would be able to read fluently if they were able to master the forty-three sounds made in the spoken English language. Thus, students would be able to sound out unfamiliar words and recognize them from their speech. However, the main issue here was that teachers were not currently trained in phonic instruction at all. McGuinness stressed that proper phonics instruction laid the foundation for reading and writing.

The whole language approach to learning was an unsuccessful teaching method, because the students were expected to memorize whole words. Students were not encouraged to decode any words, but to learn words in whole by sight. One reason this did not work was the fact that there were just too many words to memorize. Another issue was the invented spelling practice. Since students did not adhere to conventional spelling rules, they repeated their own errors. Also, they did not learn to spell because they were unable to hear the words in their speech (McGuinness, 1997). Phonics was not working due to a lack of teacher training and the phonics programs currently used in school were not grounded in sound research. In fact these programs taught phonics backwards, where educators were teaching students that letters had sounds. Letters

did not have sounds. Speech had sounds and these sounds were represented with letters (McGuinness, 1997).

The unfortunate combination of untrained teachers, the whole language approach in isolation, and misguided phonics programs had attributed to the problem of low reading rates in the United States. Pinker stated in the forward to *Why Our Children Can't Read*, by McGuinness, "we need to understand how the contraption called writing works, how the mind of the child works, and how to get the two to mesh. ...we are turning into a nation of illiterates, the victims of misguided ideas about the nature of reading and how to teach it" (McGuinness, 1997, p. ix-x).

CHAPTER 2

PROBLEM DOCUMENTATION

Problem Evidence

It was determined that a program needed to be designed to increase student reading ability in order to improve academic achievement. Evidence for the existence of the problem included the Stanford Test, low performance in reading on publisher and teacher made tests, and teacher surveys.

Each year in the targeted district in northern Illinois, a general test was given at each grade level that ranked students' ability to read, comprehend, and recognize vocabulary. The targeted district used the Stanford Test. When the project was first being formed, the elementary principal was contacted in order to compile a list of 12 to 15 third grade students who had scored low on the Stanford, and who would benefit from a tutorial program.

The results of the Stanford reading and vocabulary test given in the Spring of 2001 were presented in table 1. Of the nine students' scores that were obtained, the average Stanford score was at the 2.4 grade level. Since the students took the test at the end of the second grade, they should have scored at least a three on the test, putting them at the third grade level. As shown by these current scores and the history

of the school being on the state watch list for the low academic achievement, it was apparent reading comprehension was a district wide issue.

Table 1

Stanford Test Results for Spring 2001

Students	Reading and Vocabulary
One	2.6 Grade Level
Two	2.7 Grade Level
Three	2.3 Grade Level
Four	2.1 Grade Level
Five	2.5 Grade Level
Six	1.9 Grade Level
Seven	2.8 Grade Level
Eight	2.7 Grade Level
Nine	Not Available
Ten	2.2 Grade Level

Three tests were administered to assess the third graders' reading ability. The Reading Inventory Assessment was designed to rate students' comprehension ability. The Word Decoding Assessment was designed to determine how well students could decode simple words and non-sense words. The Wide Range Achievement Test was given to the students to see how many words they could recognize and pronounce clearly.

When taking the Reading Inventory Assessment, the students read a short grade-level passage and orally answered questions given by the test administrator. Any students who scored 80% or above on the test continued on to the next grade level passage. This process continued until the student scored below the 80th percentile.

Table 2 and table 3 showed the students' performance divided into the tutorial group and the control group. The tutorial students averaged a 36.8% on the level three tests, and 40% of the students did not testing high enough to take the third grade test.

The control group received an average of a 15.6% on the test, and 78% of the nine students could not take the level three tests.

Table 2

Reading Inventory Assessment Pre-Test – Tutorial Group

Students	Grade 2	Grade 3	Grade 4	Grade 5
One	100%	80%	60%	
Two	60%			
Three	60%			
Four	80%	40%		
Five	40%			
Six	100%	60%		
Seven	100%	80%	80%	0%
Eight	80%	100%	80%	60%
Nine	60%			
Ten	80%	80%	40%	

Table 3

Reading Inventory Assessment Pre-Test – Control Group

Students	Grade 2	Grade 3	Grade 4	Grade 5
One	60%			
Two	20%			
Three	100%	80%	0%	
Four	0%			
Five	100%	60%		
Six	40%			
Seven	60%			
Eight	20%			
Nine	0%			

During the Word Decoding Assessment, the students were given 30 words on flash cards. They read the words aloud while the test administrator recorded the students' responses. If the word was mispronounced, the administrator noted how the

word was incorrectly pronounced. All 30 words were used and the student's score was the number of words the student pronounced correctly.

The Wide Range Achievement Test was administered to provide each of the students with a grade level score for reading words. Students were given words ranging from first grade through eighth grade. Therefore, they were not supposed to know all of the words. This was stressed to the student. When the students gave ten consecutive incorrect answers, the test was stopped. Scoring was based on the total number of words the students said correctly. The number of words said correctly corresponded to the grade level in which the student read. Each grade level was divided into three sections, beginning, middle, and end. Thus, the results showed approximately where they were in a given grade.

Table 4 and table 5 show the students' performance on the Word Decoding Assessment and Wide Range Achievement Test. The tutorial group averaged 21.6 words on the Word Decoding Assessment test. However, the control group averaged 19.1 words on the same assessment. The results of the Wide Range Assessment showed that each of the groups had an average grade level score at the end of the second grade. The tutorial group had an average of 57.5 words correctly pronounced, and the control group had an average of 55.7 words correctly spoken. Again on the average the students were scoring below grade level on a test designed to rate decoding skills.

Table 4

Word Decoding Assessment & Wide Range Achievement – Pretest –Tutorial Group

Student	Word Decoding Assessment	Wide Range Achievement	
		Number of Words	Grade Level
One	22	60	Beginning 3
Two	24	58	End 2
Three	23	56	End 2
Four	19	59	End 2
Five	23	56	End 2
Six	22	59	End 2
Seven	23	59	End 2
Eight	24	62	Beginning 3
Nine	21	57	End 2
Ten	15	49	Begin 2

Table 5

Word Decoding Assessment & Wide Range Achievement – Pretest – Control Group

Student	Word Decoding Assessment	Wide Range Achievement	
		Number of Words	Grade Level
One	25	70	End 4
Two	23	61	Begin 3
Three	21	57	End 2
Four	16	46	Begin 2
Five	14	52	Middle 2
Six	23	60	Begin 3
Seven	25	62	Begin 3
Eight	24	63	Begin 3
Nine	1	30	Begin 1

A teacher designed reading survey was given to teachers at the elementary level in grades one and two (Appendix A). Of the 28 surveys distributed in the district, there were 13 responses; a 46% return rate. When teachers were asked the three main reasons why students in the district were reading below grade level, there was a wide range of responses. However, every survey mentioned a lack of parental support and

practice at home as major reasons for low reading skills. The next two most frequently mentioned reasons were lack of experiences and skills on the part of the students, and not knowing the sounds of the letters or how to sound out words.

Teachers in the first and second grades spent anywhere from one and half to three hours everyday on language arts instruction. Of this time, the majority of teachers spent 15-30 minutes on decoding words phonetically. Even if all the teachers spent 30 minutes on phonics, this would make up less than 25% of their total language arts instruction; at 15 minutes, it would make up less than 12% of their instruction.

Of the 13 teachers who responded to the survey, the majority could only recall two or three college classes on teaching reading and two could not recall any. Three had taken five or more classes in reading.

After reviewing the results of this survey, the goal of the project became clear. An effective project that incorporated phonetic instruction should increase reading comprehension.

Probable Causes

An analysis of the probable cause data revealed that reading comprehension could be broken down into six areas of concern. Students were not spending much time reading in or out of the classroom. Early reading programs had little or no instruction in phonics. Teachers lacked the proper training in reading instruction. There was a limited amount of resources provided by the district. Academic diversity within the classroom had impacted the ability of teachers to address each student's reading needs. Finally, teachers were also dealing with a high mobility rate throughout the district (School Report Card).

The literature suggested that there were many reasons for low reading comprehension. According to the National Reading Panel of 2000, the lack of phonemic awareness instruction, reading fluency, vocabulary instruction, teacher preparation with comprehension strategies instruction, and students not being able to relate ideas in print to their own knowledge contributed to difficulties with reading comprehension (National Reading Panel Report, 2000).

Another issue that impacted student reading and overall school achievement was the student mobility. The 33.1% mobility rate was determined as the percentage of students who enrolled in or left a school during the school year. Mobility could greatly affect what materials students were actually introduced to throughout the year. Since there were no guidelines for when material was covered in the classroom, students who moved during the year could cover the same material multiple times while completely missing other topics (School Report Card).

According to McGuinness (1997), teachers were never provided with the training and skills to teach reading correctly. This was perhaps the most important key to understanding why reading comprehension as well as all other aspects of reading had been so unsuccessful. Teachers needed the time and instruction on reading strategies to have their students reading at a successful level.

CHAPTER 3

THE SOLUTION STRATEGY

Literature Review

Why were there so many children in this great country failing to read at grade level? Why had all of the best efforts failed to produce positive results in reading across the nation? Edward Ziegler stated, in his 1985 forward written in *Why Johnny Can't Read*, that some 27 million American adults were functionally illiterate and 45 million more were only marginally literate (Flesch, 1995, p. viii). A 1993 United States Department of Education study revealed that 42% of school age children were below basic competency in reading (McGuinness and McGuinness, 1998, p. 6).

One of the major issues in teaching children to read was that there have been huge swings in the way reading had been taught over the last 50 years. Phonics instruction used to be the method to teach reading until whole language methods entered school systems across the country. The first area of concern was the way in which teachers were being trained to teach reading. Teachers were not given much instruction on either phonics or whole language instruction. Required classes for beginning teachers had little to do with these methods. However, all teachers would eventually become certified and expected to be competent in teaching first grade students, who were being formally introduced to reading for the first time. Furthermore,

college professors did not know how to teach reading, and the methods they endorsed were ineffective. "Because teachers are never provided with the training and skills to teach reading correctly, their classrooms are filling up with children who are 'dyslexic'...have a 'brain disorder' or do not pay attention... We are blaming the victim because our teachers aren't properly trained to do their job" (McGuinness, D. 1997, p. 167).

Replacing phonics instruction with whole language instruction took the public school system by storm in the 1960s. The central idea behind whole language was that "reading is natural" in the same way that learning to speak was natural (McGuinness, D. 1997, p.33). This was the logic that prevailed: if children heard natural language from children's books, while they were looking at the print as it was being read, and at the same time "invented" their own spelling system as they learned to write, children would naturally teach themselves to read and write by trial and error. Kenneth Goodman, a leading expert on whole language proposed that students should guess whole words in context and work at what made sense, and participate in what Goodman had called a "psycholinguistic guessing game" (McGuinness, D. 1997, p. 34). To assist the students in guessing words, the publishers produced books with lots of pictures to match the text in which the student was reading. Therefore, if a student came to an unfamiliar word such as "kangaroo" there would be a picture of a kangaroo on the page and the student could guess the word correctly, never learning to sound out words phonetically (McGuinness, D. 1997). Thus, in whole language the student learned whole words and the assumption was then made that if the child saw a word enough times, it would eventually be memorized and became a part of the child's "sight word vocabulary".

However, the main problem with this reasoning was that a typical person could only memorize about 2,000 to 3,000 words with out the aid of phoneme knowledge. This would put the child at about the middle of first grade and that was why so many children could fool their parents and teachers until they got to second grade. If the curriculum used other crutches like using pictures for clues and trying to guess the story line based on what just happened, the child might fool the adults until about the middle of second grade. However, "eventually visual memory will become overloaded, and 'horse' will be mistakenly read as 'house' because the words look very much alike. A child that reads in this manner anticipates and guesses, but rarely or never actually decodes text" (McGuinness, 1998, p. 19).

In fact the founders of this method treated the beginning reader as if they were learning a foreign language. It was reasoned that simply learning the whole word would make reading and comprehension much faster and easier. As a result of this reasoning the Dick and Jane "basal" reading series was developed. These plainly illustrated and extremely repetitive texts were produced and given to the textbook companies to pass on to teachers. These products "presumably made learning to read wholly painless for small children" said Ziegler, and in the 1980's over 90 percent of schools used this method of instruction (Flesch, 1995, p. viii-ix). Formerly termed the "look and say" method of instruction during the 1980's the method failed to produce the results expected. However, blame was not placed on the method of instruction, but rather the method of delivery. Thus, grew the whole language movement, which continued to embrace the look and say methodologies developed earlier. However, the plain basal readers of the past were replaced by beautifully illustrated children's literature.

Teachers embraced whole language in part because it allowed them to pursue a more creative approach to teaching. Teachers, equipped with their beautiful books, were encouraged to teach in thematic units and to try other innovative forms of instruction. Children in these classrooms were also encouraged to invent their own spelling in their written work as early as age four. This practice was designed to encourage children to write creatively and freely without being burdened by spelling rules. Children were encouraged to figure out the relationship between sounds in words and the print code on their own. However, "common sense should dictate that practicing errors over and over again is a bad idea. Also, many children don't learn to spell anything at all because they can't *hear* the sounds in their speech" (McGuinness, D. 1997, p. 52).

When whole language instruction failed to make the great gains it claimed, the pendulum of instruction started to swing back to the methodologies of the past: phonics. This method was founded by Noah Webster, who was more commonly associated as the author of the 70,000 word dictionary published in 1828. He also wrote the *Speller* in 1783 in an attempt to reform the teaching of spoken and written English. Webster devised a set of exercises, which gradually took the students through word lists of simple to complex spelling and syllable patterns. It was Webster's speller, which impacted "phonics" teaching methods. For example, his speller began with vowel letters described as being "long" or "short" (McGuinness, 1997).

The primary difference between phonics and whole language was that in phonics the child was taught the mechanisms of reading by "sounding words out". When this was accomplished, the child could read. In the whole language method the child was

taught to read before the mechanics of the sounds of the letters were taught. In typical instruction, the child then repeated the same lesson until the child was familiar with the words. Children read little "stories" containing the most-often-used words in English and gradually built up a "sight word vocabulary". The children learned by seeing the words over and over again. By the end of the first grade they could recognize 349 words, by the end of second grade 1,094, by the end of third grade 1,216, and by the end of fourth grade 1,554. "However, if a child has been taught phonics-first, the child would be able to read his or her full speaking or listening vocabulary, which has been estimated at 40,000 words" (Flesch, 1981, p. 4-5). "Writing systems based on the whole word don't work because languages have too many words and people are severely limited in their ability to memorize a large number of words on sight" (McGuinness, D. 1997, p. 71-72). In classrooms today, teachers were using "whole language" methods in their classrooms yet they were more likely to believe in phonics instruction. However, teachers were no longer trained in phonics, and phonics instruction only took up an average of two percent of the language arts period (McGuinness, D. 1997).

Flesch completed a comprehensive review of the research concerning the effectiveness of whole language versus phonics instruction in teaching children to read. "One hundred and twenty-four such studies have carefully compared phonics-first to look and say" (Flesch, 1995, p. xi). "...In every single research study ever made, phonics was shown to be superior to the word method; conversely, there is not a single research study that shows the word method superior to phonics" (Flesch, 1995, p. 60).

The failure of whole language to produce the results claimed, caused some school districts to embrace phonics once again to teach reading in the 1970's. One

success story described a school system in Rochester, New York (1974) that switched to a phonics-based instruction with rewarding results. Mary Burkhardt, a teacher who would later be appointed director of reading for the district recalled "the problem was that even sixth-graders were still guessing at words." As a result, students were far below grade level in reading skills (Flesch, 1985, p. xi). After five years using this method Rochester's students were performing above grade level in the primary grades and at grade level in the intermediate grades. One librarian told Flesch "our second grade students are now reading like our fifth graders used to read" (Flesch, 1985, xi).

Flesch also cited the success of P.S. 251 which was located deep in the heart of Brooklyn whose children made up an ethnic mix of Irish, Italian, Jewish, black, Puerto Rican, Chinese, Korean, Haitian and Cuban. As a school system which had embraced phonics first instruction, he cited one classroom after another where the students were accomplishing great things in reading. For example, the third-graders were reading poetry by William Wordsworth and had no problems pronouncing words such as *continuous, margin,* and *sprightly*. The children in the fourth grade had already read twenty books about historical figures and the sixth graders were rehearsing a play following their readings from *Jane Eyre*, *Great Expectations*, and *The Diary of Anne Frank* (Flesch, 1981).

There was a difference between the whole language readers of the sixties and those of the eighties and beyond. Today, all of the textbook series held up for the teachers to use offer some phonics instruction. Unfortunately, according to Flesch, "this does the children no good at all because they still don't learn phonics *before* they learn the words spelled by the phonics rules. Instead they get incomplete instruction at best

which comes to too little phonics too late to be of any help to learn how to read" (Flesch, 1981, p.5-6).

Although the research previously cited made a good case for phonics, there were a multitude of problems with this type of instruction today. According to McGuinness, when phonics instruction was firmly in place in the 1970's, the illiteracy rate was around 33%. There were many reasons for this. One reason was in the "inherently confusing nature of the instruction. Students are required to learn rules, regulations, and contingencies in order for phonics to be learned" (Flesch, 1981, p. 6). The 'rules' that were taught did not work all the time, which caused confusion for the children. For example, someone invented the phrase: 'when two vowels go walking the first one does the talking.' "This means when you see a vowel pair, the second letter is 'silent' and you say the letter name of the first vowel as in words such as: beach, feet, and soap. ...However, the rule only works 40% of the time and if the rule was true you would pronounce soil, as sole; bread as breed; and eight as eat"
(McGuinness, D. 1997, p. 95).

Also, phonics taught the sounds of the alphabet for a long time before the learner was taught how to read and spell words with the sounds (McGuinness & McGuinness, 1998). It was very common to see all the beginning letters of the alphabet accompanied by a picture in kindergarten or first grade classroom, so the letter 'c' was accompanied by a picture of a cat. However, not all words that start with the letter 'c' had that same sound. For example the 's' sound was expressed as a 'c' in the word cent.

Furthermore, besides teaching too little too late to children, all phonics instruction taught the alphabet code backwards. Phonics programs taught that "letters have

sounds", rather than that "speech has sounds" and these speech sounds had letters. In phonics they taught the "sounds or letters" but there were twenty-six letters and forty-three sounds. "The alphabet code is learning all forty-three sounds that make up the English language and how these sounds are represented by letters. However, today no child is ever told what the alphabet code really is because the teachers don't know what it really is either" (McGuinness, D., 1997, p. 74).

The pendulum regarding reading methodologies continued to swing. Today, it was more common to see an attempt to incorporate both methodologies into the classroom, even though these ideas were diametrically opposed. However, there were reading programs available, which did work well. In *Why Our Children Can't Read and What Can We Do About It*, McGuinness claimed there were only "three remedial reading programs that include a phoneme awareness component, use of the correct logic to teach the (alphabet) code, and also have research support" (McGuinness, D., 1997, p. 197). These programs were ABCs of Reading, Lindamood Add (Auditory Discrimination in Depth) method and Read America: Phono-Graphix.

The Read America: Phono-Graphix program was developed primarily by Carmen McGuinness, a psychologist and former Montessori school principal. Making use of all the research to date, the program included phoneme awareness training, plus a complete curriculum based on the structure of our spelling code, sequenced to match the child's development level (McGuinness, D., 1997).

Students were taught the entire "alphabet code" which was made up of 46 sounds, and were taught to spell the words they were learning to read at the same time. Students progressed from the "basic code" which consisted of three and four letter

words to the "advanced code" which consisted of multi-syllabic words. As stated in the book *Why Our Children Can't Read and What Can We Do About It*:

> This foundation made it possible to organize a sequence of instruction that would work for everyone from five years old to adult level. The curriculum includes manipulatives, worksheets, games, and stories in specially coded text, which helps the child to see letters work together to represent one phoneme. Diagraphs and phonograms are bolded to show they are a 'sound picture' for the individual phoneme. Stories were written to emphasize a single phoneme and its various spellings (McGuinness, D., 1997, p. 200-202).

The research completed by Carmen McGuinness using the Phono-Graphix method published in the Annals of Dyslexia in 1996 made groundbreaking claims of success in teaching reading difficulties. One claim was that by employing this method of instruction, a non-reader could be taught to read through one-on-one instruction in only twelve hours; ten times faster than the next most effective method.

McGuinness analyzed the test scores of 87 children enrolled in the program over a two-year period. They ranged in age from 6 to 16 years and the program was set up in one-hour sessions, an hour per week, for 12 weeks. The average time in the program was 9.33 hours with a range of 3 to 18 hours. Forty percent had been diagnosed with a "learning disability" and were in special education programs. Four children had IQ's in the 70's and 19 had large discrepancies between IQ and reading scores ("dyslexic"). Several children could not read a single word (McGuinness, D., 1997).

After 12 hours of instruction average gains were one and a half years on the Woodcock Reading Mastery test for reading real words and over two years in decoding regularly spelled nonsense words. Nearly all of the children peaked out at 100% on tests of phoneme analysis, segmenting, blending and knowledge of 50 letter-sound correspondences. Children who met the criteria for:

> dyslexia made nearly twice the gains of children who did not; averaging an increase of two and a half years reading real words and nonsense words. Children previously diagnosed with LD were no longer LD. The lowest grade in language arts was now a C instead of an F. Grades prior to remediation had been Cs, Ds, or Fs. Now nearly everyone was getting As and Bs. One-third of the children were on the honor roll where none had been before. Parents reported that 100% had increased self-esteem and any behavioral problems had disappeared (87% reported improved behavior)
>
> (McGuinness, D., 1997, pg. 202-203).

According to Diane McGuinness, the implications of this research were profound and were summed up as follows:

> The conclusions from the study of this program are far reaching. First of all, these studies provide overwhelming evidence that there is no such thing as "dyslexia" or a "learning disabilities". If there was something wrong with these children's brains, the remedial instruction wouldn't work and certainly not in twelve hours. Secondly, the earlier that children are taught to decode our alphabetic writing system correctly, the less likely they will have reading problems. Thirdly, poor readers don't have to stay poor readers for life. They

> don't even have to remain poor readers for more than twelve weeks. Finally, children fail to read in school because they aren't being taught correctly. They fail to learn to read in remedial programs because they aren't being taught correctly (McGuinness, D., 1997, p. 203).

Other studies using the Phono-Graphix methods had also shown large gains in word attack skills (decoding words out of context) and word identification. For example, a Juvenile Detention Center in Bernadillo County found that out of 24 students, the average time of remediation was seven hours with the average gains on word attack skills at one year eight months and average gains in word identification as nine months. The study offered a net gain of one year per five hours of instruction. A study of nine inmates at Ray Brook in New York showed grade equivalents at intake to range from 1.3 to 1.4 and at the end ranged from 2.3 to 10.0. Also, eight of the nine students made large gains (one or more standard deviations of the work attack subtest of the WRMT-R). In the Florence High School Reading study 13 students had an average word attack score at grade 2.8 and at the end, the average was grade 9.0, with the average gain of six years two months (McGuinness & McGuinness, 2001).

While the educational pendulum continued to swing between teaching reading through phonics or whole language, another issue in reading needed to be addressed. Although the basis for reading was being able to actually decode the words on the page, the reader had to be able to derive meaning from the text just read. If asked a simple question about text just read, some readers were unable to answer the question, because they did not understand what they had read.

In order to help increase reading comprehension, Palincsar and Brown developed reciprocal teaching techniques to help students. Reciprocal teaching was an active reading technique incorporating four activities into the reading process. The students in the program used the activities of predicting, summarizing, questioning, and clarifying to increase reading comprehension.

In conventional reciprocal teaching the first step was to introduce reciprocal teaching by teaching the students the four steps in the process. Class time was spent introducing the students to the concepts of predicting, summarizing, questioning, and clarifying. The teacher explained and modeled how to use each of the strategies while reading for understanding. After the introduction of the processes of reciprocal teaching, the students began to use each of the activities as they read for understanding. If the students were reading a passage of text and they did not understand what they had read, the students began self monitoring activities to help them understand.

One part of reciprocal teaching was predicting. In this activity students guessed what the author would be discussing in the next section of text. The text was skimmed and the students got an idea of what was coming next. Students used the predicting activity to give them a reason to continue reading. The next section of the text was read to confirm or disprove what they predicted would come next. This activity was a way to link what the students already knew to new and different material. After predicting what they thought would come next in the text, the students read the next passage.

The next step was to summarize what was just read. Summarizing was an opportunity for the reader to identify the main points in the text, restate what they just read and integrate the new information with existing knowledge.

Questioning was a critical thinking skill, where the students created questions based on the important information presented in the text. By forming the questions the students were identifying the most important parts of what they had read. By posing the questions to themselves, the students engaged in self-testing and verified they could in fact answer their own questions about the text passages.

The final skill was clarification. The students improved their understanding by learning the meaning of unknown words. The meaning of the vocabulary came from rereading the passage, reading ahead, or asking for help. In addition to learning the meaning of particular words, the students also had to gather meaning from the text passage as a whole. When reading the students would constantly be clarifying what they just read to guarantee they understood the text passages.

Conventional reciprocal teaching techniques were based in the theory of expert modeling and scaffolding theory. The teacher, as the reading expert, modeled the processes and built a scaffold for the students to work from. The students, once proficient with the techniques, began to build their own scaffolding as they read more (Coley et al, 1993).

Reciprocal teaching was a very structured process in the study that Palinscar and Brown conducted. Four days prior to the use of reciprocal teaching in the classroom the students were taught each of the four strategies. The students in the study only read expository texts, and by sentences or paragraphs they discussed the

passage read using the different processes of reciprocal teaching. The discussions were held during the students' first reading of the passage of text. The reciprocal strategies were only used for 20 days, and then it was assumed the students would use the strategies on their own (Coley et al, 1993).

While conventional reciprocal teaching had been proven to "increase student competence with respect to the strategies taught" (Coley et al, 1993, p. 268), teachers outside of the study conditions had also found reciprocal teaching success by adapting the techniques to fit within their curriculums and teaching styles. Three veteran teachers who used reciprocal teaching within their classrooms were observed for a year. All three of the teachers "believed students should be active participants in their learning" (Coley et al, 1993, p. 278). Reciprocal teaching fulfilled each of the teachers' desire to incorporate an active reading style in the classroom. Each teacher found ways to change the conventional methods to better meet the needs of the students in their classrooms.

All three of the teachers observed were able to apply the processes to narrative texts as well as the expository texts found in the conventional reciprocal teaching. In addition to changing what kinds of texts were used, the teachers also changed how they applied the reciprocal teaching techniques in the classroom. Instead of using the processes during the students' first reading of the passages, each of the teachers had the students pre-read the texts. Since the students had already read the passages to be discussed, they were prepared with questions about the text, they had started to think about what was coming next in the story, and they had begun to summarize the main ideas from the text they had read (Coley et al, 1993).

In addition to using reciprocal teaching techniques outside of expository texts, the three teachers also used the reciprocal processes more than a sentence or a paragraph at a time. The teachers used the reciprocal activities after the students had read at least half of a story or play being covered (Coley et al, 1993).

"All three teachers thought reciprocal teaching was a *valuable addition to their instruction*" (Coley et al, 1993, p. 279). They took the reciprocal teaching strategies and made them part of their own curriculums. The teachers were only observed, so no data was presented about the comprehension gains the students made in the classes when the teachers used reciprocal teaching strategies. However, the teachers reported the reciprocal teaching techniques helped to provide a less teacher-centered environment, and the activities also promoted student thinking and involvement with the texts (Coley et al, 1993).

"Children who comprehend well demonstrate the use of self-questioning and monitoring activities. ...Experimental studies have also clearly shown that students can be taught these higher order skills, and that significant gains in students' reading comprehension may be brought about through such explicit metacognitive instruction" (Kelly, Moore, and Tuck, 1994, p. 53). Reciprocal teaching was an option to teach children the skills they needed to improve reading comprehension. With both conventional reciprocal teaching and adapted reciprocal teaching proven successful at raising reading comprehension, teachers could choose the styles that worked in their classrooms.

In order to engage students in learning any reading comprehension skills, peer tutoring was one method highly supported by the literature. In the educational

environment, one of the most significant challenges faced was overcoming the range of reading ability coupled with the lack of essential skills needed to promote successful reading. One of the most superior tools that could be utilized to enhance reading success was cross-age tutoring.

Peer and cross age tutoring had strong and significant roots that dated back to the beginning of early civilizations. The Romans and Greeks used tutoring in their learning communities as early as the first century (Jenkins & Jenkins 1987). The Phoenicians, Egyptians, and many far eastern countries found that a one-on-one teaching technique was efficient and promoted a life long desire to learn. A formalized peer-tutoring program was developed in the early nineteenth century. This academic period entitled the Monitorial System was very effective in training people to successfully complete basic work tasks (Bland & Harris, 1989).

Peer-tutoring and cross-age tutoring could best be defined as "an approach in which one child instructs another child in material on which the first is an expert and the second a novice" (Damon & Phelps, 1989, p. 11). Cross-age tutoring was originally defined as when the tutor was older than the tutee.

Tutoring had emotional and cognitive benefits for the learner. The pace of instruction could be matched to the learner's academic ability and comprehension level. There was immediate feedback and correction. Tutoring could also create a strong learning foundation that prepared the student for more difficult material. Students worked at their own pace without being compared to faster learners. This process created self-esteem and enjoyment of learning. This one-on-one approach gave the learners extra attention and emotional support that filled their psychological needs.

Creativity was also enhanced. According to Greenwood, Carta, & Hall, there were three main benefits to cross-age tutoring: the learning of academic skills, the development of social behaviors and classroom discipline, and the enhancement of peer relationships (Greenwood, Carta & Hall, 1988, pp. 258-275). A tutor centered program also helped motivate the student to learn, heightened the desire to learn, and prepared the learner for future tutoring. The tutors recognized their importance as an educational tool and most often the tutee became a tutor. "Student tutors often benefit as much or more than their tutees" (Gaustad 1992).

There were many literature based research findings on cross age tutoring. One of the best pieces of research was conducted by Cohen and Kulik in their 1982 Meta analysis report. The analysis was based on the studies of particular academic subjects. In the subject of Language Arts, story grammar, comprehension, identification of sight words, acquisition of vocabulary, and general reading skills were observed. They discovered that cross-age tutoring had significant effects on academic outcomes, self-concepts, and attitudes toward subject matter.

To develop a successful tutorial program the following guidelines must be incorporated into the program:

1. Clear-cut measurable objectives. (include targeted group, subject area, assessments of the individual progress and evaluation)
2. Procedures for selecting and matching tutors to tutees.
3. Training for tutors. (explanations of structured material)
4. Use techniques and material that stimulate learning.
5. On-going supervision and support.

6. Teacher, administrative, and parent support.

Also, good communication skills were essential to a successful tutorial program. There were three main elements of communicating: receiving messages, sending messages, and responding to messages. Good communication began with in-depth listening.

A listener should be tuned in with what was being said, and pay attention to non-verbal messages such as, gestures, facial expressions, body posture, hand mannerisms, breathing, eye contact, and muscle tension. Good listeners will test their own perceptions of listening by playing back what was said. They also asked for clarification.

A tutor had the responsibility to transmit a message that could be received clearly. The tutor avoided the following barriers when using active listening:

1. Ordering or commanding
2. Warning, threatening
3. Moralizing, preaching
4. Advising, telling someone how to solve the problem
5. Lecturing, giving logical arguments
6. Judging, criticizing
7. Interpreting, analyzing
8. Name calling, labeling
9. Probing, questioning
10. Diverting from the topic

The last and final step of good communication skills included the response to the message. Responses were congruent with one's honest feelings. Subjective responses to another person were stated as personal opinion, and tutors needed to be aware of the positive effects of 'I' messages versus the negative effects of 'you' messages.

Cross age tutoring helped to foster better communication skills, stronger self-esteem, increased academic growth, enhanced creativity, and molded young people into positive effective leaders. Using this method of instruction delivery could only foster in children characteristics of productive members of society.

Project Objectives and Processes

> As a result of the Pirate Buddy Tutorial Program, during the period of September 2001 to January 2002, the third and eighth grade students from the targeted classes will increase their ability to utilize appropriate reading strategies to increase comprehension.

In order to accomplish the project objective, the following processes are necessary:

1. Materials that assist students in decoding words phonetically will be utilized.
2. A series of learning activities will be used to motivate students to read more.
3. Eighth grade students will tutor the third grade students in a variety of reading comprehension skills.
4. Reciprocal reading techniques will be used with the students.

Project Action Plan

I. Prior to the start of the Pirate Buddy Tutorial Program

A. Letters to the parents of both third and eighth grade students sent out the 9th and 10th of August (return by Friday, August 24th)

B. Distribute teacher survey

C. Distribute parent survey

D. Follow-up phone calls to parents concerning consent forms

E. Training of eighth graders in the skills of decoding and reciprocal teaching (September 5th and 6th)

F. Pretest third and eighth grade students (September 11th and 13th)

II. Begin Pirate Buddy Tutorial Program

A. Set schedule for every Tuesday and Thursday

a. 3:00 – 3:15 review 8th grade tutoring

b. 3:15 – 3:25 pair share activities

c. 3:25 – 3:45 word decoding skills

d. 3:45 – 4:05 reciprocal teaching

e. 4:05 – 4:15 wrap-up activities/reflection time

B. Encourage reading

a. Reading logs

b. Pair share

c. Graph the number of minutes spent reading

d. Incentive charts

e. Make sure each student has a library card

C. Decoding skills

a. Resources will be made based on the *Reading Reflex* activities

b. Computer software used based on activities developed by *Read America*

D. Comprehension skills

a. Introduce third grade students to reciprocal teaching techniques: summarizing, predicting, questioning, and clarifying

b. Increase reading fluency through decoding skills

c. Use of graphic organizers and schematic maps

d. Discussion and reflection on the texts read

e. Read aloud activities that include the retelling of texts (orally or in writing)

III. Conclude the project for research in mid-January

(Pirate Buddies will conclude in May)

A. Posttest the third and eighth grade students

B. Distribute parent surveys

C. Distribute student surveys

D. Social Celebration

Methods of Assessment

In order to assess the effects of the intervention strategy, tests will be administered to assess decoding and comprehension skills. In addition the students will maintain writing journals for the Phono-Graphix lessons and as a place to predict and summarize for the reciprocal teaching lessons. Discussions with the students will be held as part of the assessment process.

CHAPTER 4

PROJECT RESULTS

Historical Description of the Intervention

The objective of the project was to increase reading ability. Eighth graders were trained as tutors and gave one-on-one instruction to third graders. Students were taught to decode words phonetically by incorporating the Phono-Graphix method as described in Chapter 3. The group also read storybooks to their tutors and practiced the reciprocal teaching techniques of predicting and summarizing.

The original group of third graders was selected by below grade level reading scores on the Stanford Test. Of the 13 parents contacted for participation in the study, only two responded. Because of the poor response, a third grade classroom was selected and any child that wanted to be involved in the after school reading program was invited to join regardless of test scores. The two original students were kept in the program and 10 more from this classroom were added. Pretests were administered to the test subjects and a control group. In an attempt to rule out teacher influences on the study, the control group consisted of the same number of students used in each classroom – two from one classroom and ten from another.

The Stanford Test was also used in selecting the eighth grade tutors. The eighth grade students in the program were neither the highest nor the lowest readers in the school. The students were selected by previous faculty members who knew the students to be responsible role models. Although the researchers stressed the importance of making a commitment for the duration of this project, there was a great deal of absenteeism and a drop out rate which disrupted the attachments some third graders had made to their tutors. The project was ended a week earlier than planned because of increased problems with attendance.

The study lasted from October 4, 2001, to December 4, 2001, where students attended twice a week from 3:30 P.M. to 4:15 P.M. and received a total of 15 days of instruction. Eighth graders were given a full day of "training" prior to meeting with the third graders. Also, the tutors were expected to receive "training" or instructions on how to teach certain ideas from 3:00 P.M. to 3:30 P.M. and then stay until 4:15 P.M. with the third grade students everyday the program met. The time before the arrival of the third graders was used to have open discussions with the eighth graders about how the program was working and to reinforce expectations concerning the importance of their work with these children. The attendance of the third graders was impressive. Nine out of the ten third graders were in attendance more than 80% of the days. The other student had a 60% attendance rate. However, attendance for the eighth graders was poor. Four students dropped out partway through the program, and half of the eighth graders were in attendance less than 75% of the time.

Each session started with a *Reading Reflex* lesson designed to help students decode words. As each pair finished their assignment for the day, the third grader

would then read a story to their tutor. The tutor was instructed to either practice predicting or summarizing during these reading sessions and to record the responses of the third grader in a journal. A more detailed discussion of these reciprocal teaching techniques would follow the complete discussion of the *Reading Reflex* lessons.

One of the important aspects of the program was the diversity of the lessons provided. The lessons were found in *Reading* Reflex a book by McGuinness and McGuinness. This text was used exclusively and in the order that was recommended. Therefore, a summary of the salient parts will be covered here and the page numbers of the book will be cited.

The first idea taught was that letters were pictures of sounds and thus letters were referred to as "sound pictures" not as letters; hence the term Phono-Graphix. (Letters did not make sounds and most phonics programs teach this.) Please note that when the term "sound picture" was used to describe the lessons, it referred to the letter(s) that represented a sound. There were three lessons based around three letter words: Fat Cat Sat, Bug on Jug, and Ben Bun which could be found on pages 83-91. The letters of the words were cut up and placed in envelopes along with a list of words the letters made. The tutor called a word from the list while the third graders moved the letters into place at their desks to spell the correct word. As each letter was picked, the tutee made the sound of each sound picture as the word was spelled. Tutors were instructed to make sure that each sound was pronounced and not blended. For example, in the word 'cat' each of the three sounds needed to be made separate rather then blended as in 'ca' 't' or 'c' 'at'. In a typical phonics program it would be emphasized here that all the vowels in this activity were "short". However, with *Reading Reflex* this

phonics idea was not embellished or expended. It was felt by the McGuinness' that rules like this one are confusing to children and are of little use in learning how to read and write. It was this kind of thinking that had streamlined this program so that there was no wasted time devoted to ideas that were confusing or inconsistent to the learner.

After each of the three lessons was completed, students played sound bingo. By using the sound pictures from their envelopes, sound bingo was used as a review of each sound represented by letters. Students started by turning the sound pictures face down on their desk. As they picked one letter up, they made the sound it represented, found it on their card, and traced the sound picture while saying the sound once more. Tutors could also choose to pick the sound picture, say the sound and have the tutee find the picture it represented. These lessons were found on pages 93-129.

The next set of lessons, found on pages 131-137, focused on reading and spelling words with three sounds. This was when the students started to learn that sounds blend together to make words. Each pair was once again given envelopes but this time they contained word lists instead of just letters. The lessons were once again called Fat Cat Sat, Bug on Jug, and Ben Bun but were in word list form. This time the tutor called out one word at a time and encouraged the tutee to spell the word on lined paper. As each letter was drawn or "mapped," tutors were to encourage tutees to say the sound as the sound pictures were written. Spelling silently was not allowed, because some students spelled by letter name rather than sound. Tutors were instructed to be aware that some students rely on guessing words and that if they heard the wrong sounds for a word to stop the tutee and give them the correct sound and let them try to sound out the word correctly.

In the next lessons students, practiced words containing adjacent consonants. Word lists contained real and non-sense three and four letter words. Sound pictures were once again cut up and placed into envelopes. The words were called out by the tutor. Each tutee once again selected the sound picture and said each sound as the word was arranged in the correct order on the desktop. Tutors were instructed to listen for each sound and to correct tutees if they tried to blend two sounds into one such as 'fr' instead of 'f' 'r' in the word frog. These lessons were found on pages 153-183.

Students again practiced spelling whole words on lined paper then read Stan's Planet found on pages 196-197, Skip's Gift on pages 198-199, and The Trip from pages 200-201, to reinforce the words they had practiced.

By this time the third graders were quite good at spelling and decoding simple words. They had made the important connection that words represent a series of sounds, so the group proceeded to chapter 5 in teaching the advanced code. Up until this point, one letter represented one sound. In the advanced code, two or more letters (sound pictures) could represent one sound and similar letter groupings could represent different sounds.

Due to time constraints and because the students seemed to be doing so well, some of the beginning lessons in this chapter were skipped. Lessons were started on page 226 with the word lists containing the following sounds shown in the book: <sh>, <th>, <ch>, and <ck>. In these word lists it was important to point out that these letters together made one sound that was represented by the bold print in each word. For example '**sh** i p' represented three sounds. Therefore it was easy to see how many sounds could be heard as each word was spoken. Students were to read all the words

for each of the four sound pictures and then read Jack Rat Ran Past found on pages 258-259, This Ship on page 260, and The Stick found on page 261. These stories once again reinforced the words practiced in the lessons.

The next lesson, from pages 227-231, focused on how the same sound could be represented by different sound pictures. In the 'oe' word list, sound pictures are represented as <oa> as in boat, <o e> as in note, <ow> as in show, <o> as in hold, and <ough> as in dough. Here it was pointed out that more than two letters could represent a single sound as in dough. Students were to look at the word list, say each word and decide the group to which the word belonged. They then wrote or mapped each word under the correct heading, and said the sounds that were represented by each sound picture. Special care was taken to describe the words in the <o e> section such as 'note' and 'cone'. The students were instructed to think of this grouping of words as a sound picture that was separated. It was pointed out that the word 'note' should look like 'noet,' but somebody decided that the "e" should be at the end of the word even though the sound happens where the "o" is located. The "e" was not to be referred to as "silent" nor was a discussion of "long vowel sounds" to be given (a common practice in typical phonics programs). Again, the reasoning by the authors of this program stated that describing words like this would be confusing to children and should thus be eliminated from instruction. Finally, students read The Coach, a story on pages 262-263, to reinforce the lesson.

The next lesson, on page 231, followed the same format only the students were to organize the 'ow' word list into <ow> as in now, <ou> as in out, and <ouse> as in house. They then read The Cloud, a short story found on page 266 of the program.

The prominent idea in the next lesson was that the same sound picture or letter groupings could sometimes have different sounds. This was the first lesson where the students began to struggle. Called a sound sorting activity, students had to determine if the word containing <ow> belonged to the 'oe' word list, such as 'know', or if it belonged to the 'ow' word list, such as 'brown'. Tutors were instructed to help their third graders by having them try both sounds for the sound picture. In the word 'show' for example, students were to say "sh 'oe' and sh 'ow' as in 'now'." Students then mapped these words into the correct column sounding out the sound pictures as they wrote each letter. These lessons could be found on pages 247-249 of the *Reading Reflex* book.

The students' next lesson also seemed to bring some difficulties for both the third and eighth graders. It was titled Word Analysis, and could be found on pages 249-251. The eighth graders prepared for this lesson by writing all the words in the 'ow' word list in purple marker. Third graders were then to underline each of the sounds they heard. For example, the word "house" would look like this: h ou se, and therefore contained three sounds.

The last lesson completed was the 'er' sound list on page 232, where students had to group the 'er' sounds of <ir> as in girl, <ur> as in hurt, <er> as in term, <or> as in worm, <ear> as in earn, and <ar> as in dollar. Following this lesson, students read The Hurt Girl, a short story provided by the program, found on page 267.

Each day after the students completed the Phono-Graphix lessons, the student pairs read from various books they had chosen. Each week as the students read they were to practice either predicting or summarizing from the reciprocal teaching techniques. Instead of trying to incorporate all four of the reciprocal techniques, the

activities of this study were limited to predicting and summarizing. So the third graders would not be worried about spelling and grammar, the eighth graders were to write down the predictions and summaries.

The third graders choose books and predicted what they thought the book would be about. The third graders made their predictions about the book and the eighth grader wrote down the predictions in the third graders' writing journals. See Appendix B for an example of the predicting sheet the partners used to record their information.

If the pairs were having difficulty predicting, one of the researchers would try to prompt the third grader with questions or suggestions about what the book would be about. For example, if the book had a picture on the front one question might be, "What might the picture be telling about the story?" By modeling this behavior for the third graders, they became better at predicting as the program continued. The eighth graders also helped to prompt their partners by reading the backs of the books, so the students got an overview of the book.

After making the predictions, the third graders would read to their eighth grade partners. The students would read between a few pages of text and a whole chapter of the story before stopping to check their predictions. The third graders would answer the question, "What really happened?" Again the eighth graders wrote down the third graders' responses about what really happened in the story. As conventional reciprocal teaching defined predicting as a means for students to find purpose in reading, this was the same reason to use predicting in the tutoring program. Any predictions made by the students would fulfill the need for reading to prove or disprove the predictions.

After checking the initial predictions, the third graders made more predictions about the next events to occur in the story line. The researchers and eighth graders helped to show the third grade students how to look at what had just happened in the story and make further predictions. An example would be to realize if the boy in the story just lost his mother and father, because they died, what might happen to the boy next? Where might the boy have to live? After making additional predictions the pairs would read more of the story to find out what really did happen.

The student pairs also used the reciprocal teaching technique of summarizing to improve reading ability. After the third grader picked a book to read, they would read to their eighth grade buddy. As with the technique of prediction, the buddies would read at least a few pages of text and in most cases they read a complete chapter, before stopping to summarize. The eighth graders would prompt the third graders with the question, "What happened in the story?" The third graders responded with what they thought of as the most important elements of the story. The eighth graders then wrote down the summaries in their writing journals. For an example of the summarizing sheet see Appendix C. The eighth graders told their partners the summaries could be only three sentences long, so the third graders had to think of only the really important parts of the story line. This way the third graders had to focus on what was most important to the story. After summarizing the part of the book they had read, the partners read more of the story. They continued to read and summarize as time permitted.

The students alternated between predicting and summarizing each day the tutorial program met. After the eighth graders had received their training in Phono-Graphix, the eighth graders would be reminded which of the reciprocal teaching

techniques they were to be using with their third grade partners. As needed the groups received more predicting and summarizing sheets to be placed in their writing journals.

Presentation and Analysis of Results

After completing the program in December, the third graders in the program and the third graders in the control group were given the posttests. Each of the students took the three tests they were given at the start of the project. The Reading Inventory, the Word Decoding Assessment, and the Wide Range Achievement Test were given to assess the students reading abilities in decoding and comprehension.

The Reading Inventory, a standardized test, was designed to test the students' abilities to comprehend grade level passages. After reading a short story the students were asked questions about the text, and if they scored 80% or better, they read the next grade level passage. When the students scored below an 80%, the testing stopped. In order to posttest the students, the researcher gave the students the last test that they had passed on the pretest. If the student received a pretest score of an 80% on the third grade level, but they were unable to pass the fourth grade pretest, the student started with the third grade level during the posttest. Table 6 and table 7 showed the results of the pretest and the posttest for both groups of students. The asterisks included in the charts represented the tests the students were unable to take due to a score of less than an 80% on the previous test level.

Table 6

Reading Inventory Assessment – Pretest and Posttest – Tutorial Group

Students	Test	Grade 2	Grade 3	Grade 4	Grade 5	Grade 6	Change
One	Pre	100%	80%	60%	*	*	No change
	Post		*100%*	*60%*	*	*	
Two	Pre	60%	*	*	*	*	Improved 3 grades
	Post		*100%*	*80%*	*60%*	*	
Three	Pre	60%	*	*	*	*	Improved 3 grades
	Post		*80%*	*80%*	*60%*	*	
Four	Pre	80%	40%	*	*	*	No change
	Post	*80%*	*60%*	*	*	*	
Five	Pre	40%	*	*	*	*	Improved 2 grades
	Post		*100%*	*40%*	*	*	
Six	Pre	100%	60%	*	*	*	Improved 3 grades
	Post		*100%*	*80%*	*100%*	*40%*	
Seven	Pre	100%	80%	80%	0%	*	Improved 1 grade
	Post		*80%*	*80%*	*100%*	*60%*	
Eight	Pre	80%	100%	80%	60%	*	No change
	Post		*100%*	*80%*	*60%*	*	
Nine	Pre	60%	*	*	*	*	Improved 3 grades
	Post		*100%*	*80%*	*40%*	*	
Ten	Pre	80%	80%	40%	*	*	Improved 1 grade
	Post		*80%*	*80%*	*60%*	*	

Table 7

Reading Inventory Assessment – Pretest and Posttest – Control Group

Students	Test	Grade 2	Grade 3	Grade 4	Grade 5	Change
One	Pre	60%	*	*	*	Improved 4 grades
	Post		*100%*	*80%*	*80%*	
Two	Pre	20%	*	*	*	Improved 3 grades
	Post		*80%*	*60%*	*	
Three	Pre	100%	80%	0%	*	Improved 1 grade
	Post		*100%*	*80%*	*40%*	
Four	Pre	0%	*	*	*	No change
	Post	*40%*	*	*	*	
Five	Pre	100%	60%	*	*	Improved 2 grades
	Post	*100%*	*80%*	*80%*	*40%*	
Six	Pre	40%	*	*	*	No change
	Post	60%	*	*	*	
Seven	Pre	60%	*	*	*	Improved 3 grades
	Post	*100%*	*100%*	*80%*	*20%*	
Eight	Pre	20%	*	*	*	Improved 1 grade
	Post	*80%*	*40%*	*	*	
Nine	Pre	0%	*	*	*	No change
	Post	*20%*	*	*	*	

The most important result of this assessment showed the tutorial and control groups both made significant gains, but those gains were essentially the same. Average gains in comprehension were 1.6 years for the tutorial group and 1.55 years for the control group.

A comparison of the two groups at the beginning of the study showed these groups were very different in their ability to comprehend text. The tutorial group had a much higher comprehension rate on the third grade test compared to the control group. See figure 1. For the tutorial group 40% could pass the third grade test, whereas only 11% of the students in the control group could pass the test. Posttests also showed great gains for both groups; 90% passing scores for the tutorial group and a 44%

passing score for the control group. Still, the control group made larger gains in comprehension with a percent of change of 125 for the tutorial group and 409 percent of change for the control group.

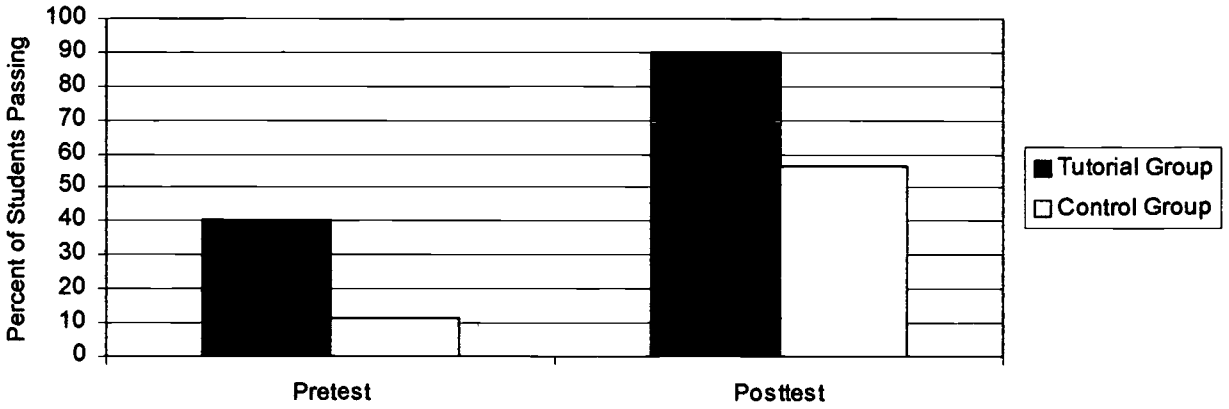

Figure 1. Passing rates on the third grade comprehension test.

The Word Decoding Assessment, was a teacher made instrument designed to test students' abilities to decode real and nonsense words. The students were given 30 words to read and they were marked on if they were able to sound out the word correctly on the first try. See table 8 and table 9 below.

Table 8

Word Decoding Assessment – Pretest and Posttest – Tutor Group

Students	Pretest Scores	Posttest Scores	Difference
One	22	*22*	-
Two	24	*26*	2
Three	23	*24*	1
Four	19	*23*	4
Five	23	*27*	4
Six	22	*25*	3
Seven	23	*23*	-
Eight	24	*27*	3
Nine	21	*21*	-
Ten	15	*18*	3

Table 9

Word Decoding Assessment – Pretest and Posttest – Control Group

Students	Pretest Scores	Posttest Scores	Difference
One	25	27	2
Two	23	26	3
Three	21	22	1
Four	16	22	6
Five	14	21	7
Six	23	25	2
Seven	25	26	1
Eight	24	25	1
Nine	1	8	7

The results of this test showed that almost all of the students made gains on their decoding skills. All but three were able to read more words correctly on this assessment. However, once again the control group out performed the tutorial group. The average increase in the number of words decoded correctly was 2 for the tutorial group and 3.3 for the control group.

The Wide Range Assessment Test, a standardized test, was administered to determine the students' abilities at word decoding. The students read a list of words until they mispronounced ten consecutive words. The students were scored based on how many total words they were able to read. The students received grade level scores determined by how many correct words they said. The students' pretest and posttest scores were shown in table 10 and table 11.

Table 10

Wide Range Achievement – Pretest and Posttest – Tutorial Group

Students	Number of Words			Grade Level		
	Pre	Post	Percent of Change	Pre	Post	Change
One	60	*62*	3.3%	Beginning 3	*Beginning 3*	-
Two	58	*69*	19.0%	End 2	*Beginning 4*	1.3 years
Three	56	*56*	0%	End 2	*End 2*	-
Four	59	*62*	5.1%	End 2	*Beginning 3*	0.3 years
Five	56	*64*	14.3%	End 2	*End 3*	1.0 years
Six	59	*68*	15.3%	End 2	*Beginning 4*	1.3 years
Seven	59	*69*	16.9%	End 2	*End 4*	2.0 years
Eight	62	*67*	8.1%	Beginning 3	*Beginning 4*	1.0 years
Nine	57	*57*	0%	End 2	*End 2*	-
Ten	49	*52*	6.1%	Beginning 2	*Mid 2*	0.3 years

Table 11

Wide Range Achievement – Pretest and Posttest – Control Group

Students	Number of Words			Grade Level		
	Pre	Post	Percent of Change	Pre	Post	Change
One	70	*86*	22.9%	End 4	*End 8*	4.0 years
Two	61	*71*	16.4%	Beginning 3	*End 4*	1.7 years
Three	57	*70*	22.8%	End 2	*End 4*	2.0 years
Four	46	*49*	6.4%	Beginning 2	*Beginning 2*	-
Five	52	*52*	0%	Mid 2	*Mid 2*	-
Six	60	*63*	5.0%	Beginning 3	*Beginning 3*	-
Seven	62	*65*	4.8%	Beginning 3	*End 3*	0.7 years
Eight	63	*66*	4.8%	Beginning 3	*End 3*	0.7 years
Nine	30	*35*	16.7%	Beginning 1	*Beginning 1*	-

This assessment also showed that the tutorial group started at a higher reading level prior to the study compared to the control group. See figure 2.

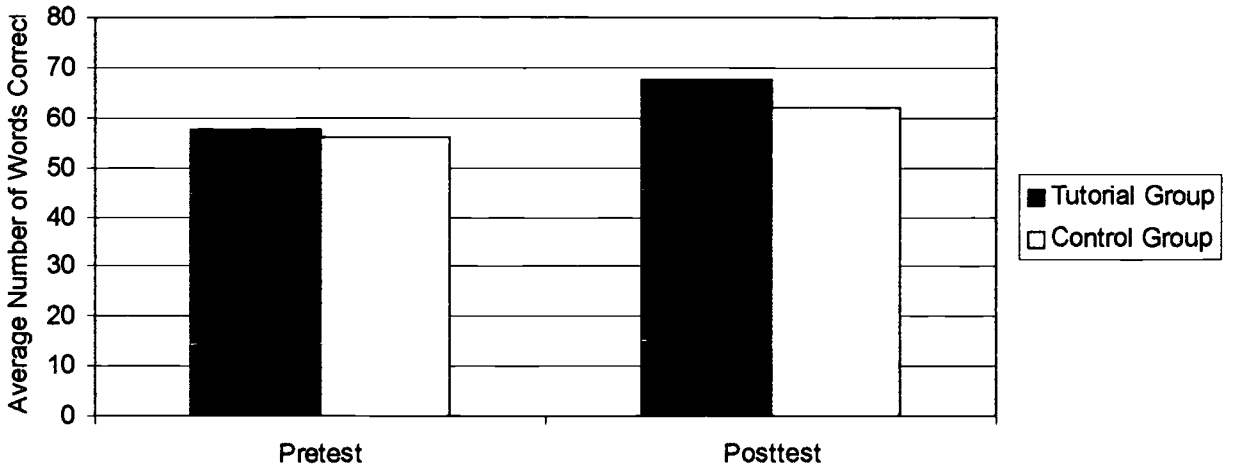

Figure 2. Average scores on the Wide Range Achievement Test.

The average score of the pretest for the tutorial group was 57.5 compared to 55.7 for the control group. Once again, both groups made gains and posttest scores showed the tutorial group to have scored a 67.6 and the control group a 61.9. It is the percent of change for these two groups that showed that the tutorial group made slightly more progress than the control group with a percent of change of 8.9 versus a 7.7 percent of change for the control group.

When analyzing the years of growth made for both groups, again the control group out performed the tutorial group. An average showed that both groups tested at the end of second grade for the pretest and tested out at the beginning of third grade on the posttest. The average years' growth for the two groups was .72 for the tutorial group and 1.0 for the control group. This .28 difference translated to about a third of a year of growth more for the control group.

Although both groups showed gains on this assessment, a comparison of gains for the two groups was mixed. The tutorial group made slightly more gains on the

average word score but the control group had a slightly higher average of growth in years.

The scores of the third grade Stanford Test were unavailable at the time this report was written. Therefore, a final comparison of the students cannot be made regarding the Stanford Test.

Conclusions and Recommendations

Based on the presentation and analysis of the data on word decoding and reading comprehension, the tutorial students showed very little to no marked improvement compared to the control group. The lessons developed around teaching phonemic awareness appeared to have little transference to improving word decoding skills. The lessons on predicting and summarizing also appeared to have made no impact on students' abilities to comprehend texts.

The poor results of the word decoding assessment had more to do with the fact it was a poorly designed teacher made assessment and the results on this measurement tool should be disregarded. The researchers would have preferred to use the nonsense word decoding assessment on page 303 of *Why Our Children Can't Read and What We Can Do About It*, by McGuinness, but the researchers were not positive about the pronunciations of the extensive list. Therefore, a very simple assessment was made, which unfortunately was not challenging enough to show growth. The researchers suggested that all assessments in a study of this type be standardized on national norms.

The researchers of this study agreed that the use of lessons from *Reading Reflex* was beneficial to the students of this study, and therefore recommend its use in the

future. However, the pacing of this study was such that the beginning lessons were too easy for the students and too much time was spent on information they already knew. It would have been more beneficial to have advanced to the more challenging lessons further on in the book. It was also recommended that this method be used for younger or struggling readers. Also, more time should be set aside for additional training of the tutors to make cross-age tutoring a more successful intervention. The lessons in *Reading Reflex* were selected in part due to its apparent ease of delivery. Although it was designed so a parent could use this method with their own child, it was recommended that teachers complete a one-week training workshop before they embarked on formally teaching this method to children. This was due to the fact there were aspects of the program that were novel, and thus forced one to think and discuss word decoding in new ways. On the other hand, there were aspects of the program novices would inadvertently teach incorrectly, because of their reliance on the familiar, but confusing practices of phonics. Although the researchers tried to teach the eighth graders these new ways of thinking and talking about words with their tutees, some tutors would inevitably give the wrong delivery or make mistakes especially with some of the more advanced lessons.

As for the reciprocal teaching techniques of predicting and summarizing, the researchers recommended its continued practice. Eighth graders were required to record the third graders' answers in a writing journal. This worked very well in that it allowed the third graders to think and respond with ease rather than concentrating on writing their answers. In turn, they had more time to read their self- selected books during these sessions.

Using cross-age tutoring was a successful intervention for the third graders. Evidence for this included an excellent attendance rate for the third graders and positive comments about the students' attitude from their classroom teachers. Because the comments were so positive and the researchers saw the enthusiasm the students showed upon arrival, it was felt that the self-esteem of the children increased. Not only were they excited to work with the older students, no other elementary students from their school came over to the junior high, which may have made them feel special. One of the benefits the researchers liked about cross-age tutoring was that it gave the third graders an opportunity to gain immediate feedback about word decoding, predicting and summarizing and this one-on-one attention may have also increased self-esteem.

Another component of reading the program tried to increase was outside reading. Unfortunately this part of the initial program failed due to the third graders not returning the outside reading logs. Stickers, praise and a graph were used to highlight the amount of outside reading completed between each tutoring session. For the first two weeks the response was good, but soon filtered out and was discontinued altogether.

Perhaps the biggest drawback of this study was that it lasted only two months with only 15 tutoring sessions. The researchers believed this was not enough time for the interventions used to effect a significant change in the students' reading abilities, and therefore, would recommend that it last the entire year. Another issue that may have impacted the students of this study was that over time the days became shorter and many of the third graders had to walk home in the encroaching dusk. The researchers cut the sessions short towards the end of the study, so the children would not be walking home in the dark. One recommendation would be to get parents and

students to car pool. Also, it was discovered the district had won a grant to be used for increasing Illinois Standards Achievement Test (ISAT) scores. Since this program had to do with increasing reading comprehension, this project could have qualified for funds to be used for an after school bus.

Another area of concern was the poor attendance of the eighth graders and the effect on the third graders. Although the researchers met with each of the eighth grade students and discussed the importance of making a commitment for the entire duration of the program, attendance and the drop out rate for them became an issue. Even though each of the students and their parents signed a form pledging to make the commitment, it seemed to have little effect on those that ended up dropping out. As a result of the poor attendance and drop rate, one or more of the researchers almost always had to tutor one of the third graders. Because the researchers were often tutoring, the rest of the group could not be monitored as closely as the researchers would have liked. One recommendation that might be beneficial would be to actually call each of the parents to make sure they understood the commitment involved and to ask for their support. It would be even better to set up a meeting with the parents.

Another aspect of the program worthy of discussion was the fact that the third graders were asked to walk over from the elementary building a block away. Two eighth graders picked them up and brought them over. The twenty minutes it took for the third graders to arrive allowed the researchers time to discuss the different aspects of the lesson for the day with the eighth graders already in the building. There were some problems with this, which may have impacted the results of this study. First of all, two eighth graders would miss the instruction given to the rest of the group. They then

had to be coached on the spot and monitored to make sure the delivery of the lesson was correct. There was one occasion where neither eighth grader picked up the children and the entire third grade group was over 20 minutes late. The researchers should have picked up the children for the walk over to the junior high. Also, there were times in the beginning of the program when parents were confused about where they were to pick up their children. Perhaps it would have been better to walk the eighth graders over to the elementary building, so that more time could have been spent with all the children engaged in the task at hand.

Another recommendation, which could have made the overall program more successful, was to get more parental involvement. In the planning stages there was a mention of inviting parents to an "open house" of the after school program, but the researchers simply did not have the time to coordinate this event. Another way to gain parental support would have been a phone survey, which would have allowed for parental input and a sense of involvement.

The researchers were fortunate to have had a supportive elementary principal and a classroom teacher who fully cooperated with the study. This type of support was essential to any program in which one was trying to effect change and it was recommended this support be forthcoming before embarking on a project of this nature.

Significant gains were made for both groups of children which was a strong indication the classroom teachers were doing an exceptional job with reading instruction. The 1.6 years gain in reading comprehension during the short span of this study was a testament to this fact. The study showed both groups made greater than expected gains. The tutorial group, however, made no measurable difference in the

results. Another area the researchers felt was very successful, but not measurable, was in the area of enhancing self-esteem through cross-age tutoring. The children could have felt special about being a part of this select group, felt good about all the one-on-one attention received, or gained positive feelings about the program through all the enthusiasm the classroom teachers and researchers exhibited. Further studies should attempt to measure students' feelings of self-esteem and self-confidence about reading, because the researchers believed there were many positive aspects about this study they observed, but were not captured in the original design.

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Appendix

Appendix A
Teacher Survey

Laura Marshall, Lisa Curran, and Lauren Guin, from Central Junior High, are doing research for graduate school on the reading comprehension of the children in our district. In order to have a complete picture of this issue we need your help. By completing this survey as accurately as possible, we will be provided with valuable insights into how reading is taught in the classroom. Your input is invaluable to us in our search for answers regarding the complexity of reading instruction and reading comprehension. Thank you in advance for your prompt attention and return of this survey.

1. What school are you teaching at?_____What grade?_____

2. Reflect back on your college education. How many courses did you take on teaching reading and reading comprehension? (Please circle one below.)

none 1 2 3 4 5 or more

3. What were the classes titled?_____

_____

_____

_____

_____

Check here if this statement applies____I can't recall some of this information.

4. Do you recall any college courses on how to teach children to read phonetically?
Yes No

5. Do you recall any college instruction on how to teach children to read whole words by sight? Yes No

6. Do you recall learning about whole language instruction in college? Yes No

7. How much time each day are the students engaged in Language Arts activities and instruction? (Reading, writing, spelling, creating things, listening to stories, ect.)

none up to ½ hour ½ hour – 1 hour 1 hour – 1½ hours

1½ hours – 2 hours more than 2 hours

If you circled more than 2 hours, please specify how much time you spend on Language Arts instructions:_____

8. Of the total time allotted to Language Arts instruction, how much of the time are students engaged in sustained silent reading? (Please circle one below.)

none 0-15 minutes 15-30 minutes 30-45 minutes

45-60 minutes more than 60 minutes

9. Of the total time allocated to Language Arts instruction, how much of the time are students engaged in learning how to decode words phonetically?

none 0-15 minutes 15-30 minutes 30-45 minutes

45-60 minutes more than 60 minutes

10. Of the time you have your students engaged in reading, please indicate (in percents) how you have divided this scheduled time. Please circle the percent that most closely represented your class.

Silent or guided reading	Practicing and assessing comprehension	Teaching and predicting spelling	Decoding words phonetically	Teaching sight words	Other
0%	0%	0%	0%	0%	0%
5%	5%	5%	5%	5%	5%
10%	10%	10%	10%	10%	10%
15%	15%	15%	15%	15%	15%
20%	20%	20%	20%	20%	20%
25%	25%	25%	25%	25%	25%
30%	30%	30%	30%	30%	30%
More than 30%	More than 30%	More than 30%	More than 30%	More than 30%	More than 30%

11. A large percentage of our students in District 6 are reading below grade level. What do you see as the three main reasons for this?

1._____

2._____

3._____

Thank you once again for taking the time to fill out our survey. If you are interested in the results, please do not hesitate to contact one of us at Central Junior High.

Appendix B
Sample Predicting Worksheet

Name:_____ Date:_____

Title:_____ Author:_____

Type of book:_____

PREDICTING	
What do you **think** will happen in the story?	What **really** happened in the story?

Appendix C
Sample Summarizing Worksheet

Name:_____Date:_____

Title:_____Author:_____

Type of book:_____

SUMMARIZING What happened in the story?

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Organization/Address: Saint Xavier University 3700 W. 103rd St. Chgo, IL	Telephone: 708-802-6219 FAX: 708-802-6208
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