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ABSTRACT

The purpose of this study was to determine if a paired reading program had a significant effect on first grader's reading achievement. Fifteen students in the experimental treatment were randomly paired to read stories. The study took place over a period of 10 weeks in a small suburban school district. Fifteen other students in the control treatment participated in sustained silent reading over the same 10 week period. The California Achievement Test was used as a pre and post test to measure achievement in vocabulary and comprehension. Findings suggested that both programs seemed to have a positive effect on reading achievement; however neither approach produced a statistically significant difference over the other. (Contains 37 references and the control and experimental vocabulary and comprehension scores.) (Author/RS)

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**The Effect of a Paired Reading Program  
on First Grade Reading Achievement**

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*Accepted  
3/25/99  
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**Presented in Partial Fulfillment of the Requirements  
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### Abstract

The purpose of this study was to determine if a paired reading program had a significant effect on first grader's reading achievement. Fifteen students in the experimental treatment were randomly paired to read stories. The study took place over a period of ten weeks in a small suburban school district. Fifteen other students in the control treatment participated in sustained silent reading over the same ten week period. The California Achievement Test was used as a pre and post test to measure achievement in vocabulary and comprehension. Findings suggested that both programs seemed to have a positive effect on reading achievement; however neither approach produced a statistically significant difference over the other.

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For many years, research has stressed the importance of the types of classroom instruction and processes used, to a student's academic and social development.(Brophy, 1986 as cited in Greenwood, Delquadri,& Hall, 1989) Many researchers have focused their studies on teaching strategies that seem to enhance these instructional processes to afford children the greatest opportunity for academic success. Among those strategies used is the practice of peer tutoring which seems to meet the needs of enhancing the academic behaviors of students of widespread ability levels. (Greenwood, Delquadri, & Hall, 1989)

In the mid 1960's there was a renewed interest in the practice of using peer tutoring to improve the reading achievement and attitudes of students in various classrooms. Hartup (1970) stressed the importance of peers interacting with one another and described peer tutoring as a situation which provided a healthy cooperative experience for learning new things and reinforcing and practicing old skills. (Hiebert, 1980) Topping (1989) reported that low achieving readers, in particular, seldom receive enough attention from teachers to improve learned skills. They seem to get lost in the shuffle of large classrooms where teachers are struggling to meet the needs of a diversity of students within certain time constraints, heightened curriculum demands and limited funding for resources. Programs of paired reading or peer tutoring provide a cooperative learning experience where children of all ability levels can practice and reinforce learned skills in a non-threatening atmosphere. Teachers found these types of programs cost effective and easy to implement and manage.

Most of the research done on peer tutoring has focused on programs where a more able reader functions as the tutor and a less able reader functions as the tutee in a cooperative reading pair. (Topping, 1989) Topping recognized the value of using these

types of cooperative reading experiences as an effective strategy to enhance reading performance. He found that both tutor and tutee frequently displayed improvements in academics and in a lot of cases, this was true even more so for the tutor. Topping also reported on many other studies which have found a marked area of growth in positive self-concept and attitudes towards reading of both tutors and tutees.

In a similar type of program, Hatt (1993) looked at the language activities produced by cross-age reading pairs and their implications for increasing reading achievement. Hatt instituted a "Buddy Reading" program between second and fifth grade students of matched ability respectively. During observations of the pair interactions, Hatt found that reading time was not restricted to the practicing of decoding skills, but included much more meaningful talk about characters, events, text, illustrations and personal experiences. Short and Pierce (1990) concluded that "reading among peers has long been reported as a valid approach to socialize the act of reading and in turn enrich the personal benefits received."(Hatt, 1993, p.23) The type of interaction that occurred between these student pairs seemed to support Rosenblatt's theory that meaning results from an interaction between the reader and the text. (Burns, Roe, & Ross, 1996) In these paired reading relationships, social dialogue occurred, ideas were exchanged and children brought a more powerful, shared and meaningful understanding to what they read.

Dixon-Krauss (1995) also looked at how peer social interaction improved the reading and writing skills of first and second grade cooperative pairs. The findings suggested that students' word recognition and use of higher level thought processes improved as a result of partner storybook reading and dialogue in response journals. In assessing the attitudes of these readers before and after treatment, the study found that the children felt more secure about reading aloud and about how their peers viewed their

reading performance.

In response to the issue of meeting the academic needs of students of widespread ability levels, Fuchs, Fuchs, Mathes, and Simmons (1997) studied the effectiveness of a Peer Assisted Learning Strategies Program (PALS) on the reading progress of three different types of learners - low achieving students with and without disabilities and average achieving students. After engaging in several types of paired reading activities, the study found that both types of low achieving students demonstrated significantly greater progress in reading achievement and social skills and the average achievers showed some improvement also as compared to a control group who did not participate in the PALS program.

All of the aforementioned studies have included an element of structure in the experimental design where tutors and tutees were paired according to difference in age or grade level or varying ability level to some degree. Much less research has been conducted to investigate the effects on achievement of an unstructured, same age, random ability paired reading program.

Hong (1981) investigated one type of these paired reading programs for beginning readers called "Booktime." Small groups of first graders were given time to choose a book and sit quietly next to the library corner to read. Hong reported on the children's natural inclinations to assemble and read in pairs and the benefits of this social interaction process. He noted that children exchanged responses and reactions to literature selections, decoded words in the text, and gained a better understanding of what the story was about.

Koskinen and Blum (1986) discussed the importance of providing time and real literature experiences where children could read contextual materials in addition to the

teacher directed instruction they received. They presented a strategy of paired repeated reading, which incorporated this type of learning experience. Koskinen and Blum reported on the need for children to be meaningfully involved with books in a social context where they could reinforce and practice learned skills with support and encouragement from a same age peer. They also discussed the fact that “most successful learners seem to seek the practice they need spontaneously. The challenge however is finding time for practice within the classroom day for students who are not automatically doing so.” (Koskinen and Blum, 1986, p.74) Koskinen and Blum found that random paired repeated reading partnerships can be beneficial for both reader and listener. The benefits seen were significant improvements in the oral fluency, word recognition, and comprehension of below average readers.

### **Hypothesis**

A need to expand on the current and limited research investigating the effects of a random, same age, mixed ability paired reading program on reading achievement is indicated. It was hypothesized in this study that instituting a program of paired reading in the first grade would not have a positive effect on the students’ reading achievement. Considering the plethora of research related to peer tutoring and paired reading programs (where more able readers help less able readers) and the positive effects they have had on reading achievement, the same might hold true, with respect to achievement, for a program of paired reading involving mixed ability levels of same age peers who are randomly paired to participate in daily unstructured real literature experiences. It is the purpose of this study to determine if this is so.

### **Procedure**

The population chosen for this study was two homogeneously grouped first grade

classes from a small, middle class, suburban (K-1) elementary school in Morris County. Prior to the institution of the paired reading program, the classes were matched in ability level according to their scores on the Metropolitan Readiness Test. Fifteen students from one class were assigned to the experimental treatment and fifteen students from the other class were assigned to the control treatment.

Both the experimental and control treatments were pretested for vocabulary and comprehension using the California Achievement Test, Fifth Edition - Level 11, Form A. The students in the experimental treatment group were randomly paired with a reading partner and their roles alternated daily as a reader or a listener. Pairs were given brief instructions on how to interact during the paired reading experience. First, they were reoriented to their classroom library corner and shown how to choose books appropriate to their reading level. Next, the teacher modeled several positive behaviors for the children to utilize during the reading experience. The listeners were told to assist their partners by helping them sound out unfamiliar or difficult words and encourage them with positive comments about their performance as they read. At the culmination of the reading session, listeners were responsible for congratulating their partner for their excellent job reading and making one positive comment about some aspect of their partner's reading performance that they liked that day.

Paired reading took place at the same time daily. The reader selected two books from the library corner to read to his/her partner for a fifteen minute time period each day. The listener fulfilled his role as described above. The paired reading program followed the same format each day, however the partner roles alternated between reader and listener. Partners were also changed at random on a weekly basis. When a student was absent, the partner joined another group or read with the teacher. During paired reading sessions, the

teacher circulated around the room observing the interactions and giving guidance and support as needed. Both the experimental and control treatments received the same basal instruction using the Heath Reading Program. However, instead of paired reading, the control treatment group engaged in a fifteen minute period of silent independent reading at the same time daily.

At the conclusion of a ten week period, all children were given the California Achievement Test, Fifth Edition - Level 11, Form A again. Mean raw scores for both groups, in the areas of vocabulary and comprehension, were collected for both pre and post test measures. A t - test was used to determine the significance of the difference between the means for the experimental and control treatments with respect to vocabulary and comprehension.

### Results

The mean, standard deviation, and t-test results for pre and post test vocabulary and comprehension scores are shown in Tables 1-4.

Comparisons between pretest results on the vocabulary sub test are indicated in Table 1.

Table 1

#### Vocabulary Pretest Results

Sample	M	SD	t
Silent Reading	23.60	4.05	1.65
Paired Reading	20.93	4.76	

The sustained silent reading control treatment achieved a mean of 23.60 compared to the paired reading experimental treatment who achieved a mean of 20.93. This indicates a

2.67 difference, in favor of the control treatment; however the  $t$  of 1.65 shows that this difference in vocabulary pretest achievement was not significant.

Comparisons between post test results on the vocabulary sub test are indicated in Table 2.

Table 2

**Vocabulary Post Test Results**

Sample	M	SD	t
Silent Reading	26.07	5.59	0.39
Paired Reading	25.40	3.50	

The control treatment achieved a mean of 26.07 compared to a mean of 25.40 for the experimental treatment. This indicates a .67 difference between the means in favor of the control treatment; however the  $t$  of .39 indicates the difference in vocabulary post test achievement was not significant. Both sustained silent reading and paired reading seemed to produce positive gains in vocabulary achievement, however neither group achieved a significant difference.

Comparisons between pretest results on the comprehension sub test are indicated in Table 3.

Table 3

**Comprehension Pretest Results**

Sample	M	SD	t
Silent Reading	24.87	4.47	0.43
Paired Reading	23.93	7.21	

The control treatment achieved a mean of 24.87 compared to a mean of 23.93 for the experimental treatment. This indicates a .94 difference between the means, in favor of the control treatment, however the  $t$  of .43 indicates that this difference was not significant.

Comparisons between post test results on the comprehension sub test are indicated in Table 4.

Table 4

**Comprehension Post Test Results**

Sample	M	SD	t
Silent Reading	27.40	5.01	0.56
Paired Reading	28.53	5.94	

The control treatment achieved a mean of 27.40 compared to a mean of 28.53 for the experimental treatment. A difference of 1.13 between the means is indicated, in favor of the experimental treatment, however the  $t$  of .56 indicates that this difference was not significant. These cumulative results indicate positive gains in reading comprehension for both groups, however neither achieved a significant improvement over the other.

**Conclusions and Implications**

The hypothesis of this study, that a program of paired reading in the first grade would not have a significantly positive effect on students' reading achievement, was supported. Neither paired reading or sustained silent reading produced a statistically significant difference over the other. The results of this study, however, indicate that although paired reading had no significant effect on achievement, it did seem to positively impact student behaviors and attitudes towards reading. Several factors may have influenced the positive behaviors and attitudes displayed by the students in the paired

reading program. These factors include (a) self-selection of books, (b) sharing thoughts about characters, events or settings, and (c) alternating the role of being the “listener” which included acting as the teacher and assisting the peer partner.

In the paired reading classroom, the teacher observed student behaviors throughout the course of the study, that would have appeared to have positively impacted students’ reading achievement. Interest and motivation seemed to increase tremendously when the students were able to select the books they would read to their partners. They were excited about the books they chose to read and began to pick up more challenging texts. The teacher also observed that students employed strategies they had seen modeled by the teacher, in everyday reading lessons, in their own paired reading experience. For example, students helped one another sound out words, figure out meanings, and understand text with the help of illustrations and informal discussion. This coincides with Hatt’s (1993) findings in a shared reading encounter that reading time was not restricted to sounding out words, but included more meaningful talk about parts of a story, illustrations, and personal background knowledge. Hong (1981) also pointed out the educational benefits of “quiet talk” during partner reading. He concluded that it can be helpful in gaining a general sense of what the story is about, exchanging personal reactions and feelings of what is being read, and using decoding skills to figure out words in the text. Students began to explore what the story was about through conversations about the pictures and events that were occurring. The teacher also noted that in whole group classroom discussions both during and after this program, students added more detail to their dialogue about stories and those students who were usually reluctant to participate began to add to classroom book talks.

By allowing children to engage in extended periods of free reading time, you are

providing periods of time for practice and reinforcement of skills in a meaningful context. This may not occur within the confines of large classrooms containing diversified levels of student ability. Koskinen and Blum (1986) discuss the importance of this time particularly for low achieving readers who seldom receive adequate time to read or practice skills in traditional programs of instruction. The positive gains in the areas of vocabulary and comprehension achieved by the experimental group, seem to indicate that the extra practice and reinforcement of skills in extended free reading time benefited most students and particularly helped build the self-confidence of the low achieving readers in the class. Students became more independent in their seat work which also could have been a result of the reinforcement of skills during paired reading.

Social benefits in the paired reading classroom were noted as well. Partners were randomly paired from week to week instead of the traditional high reader/low reader pairing seen in many shared reading programs. As a result of interacting with a different partner each week (who usually was at a different level of achievement) students learned to be more appreciative of differences among their peers. However, there were occasions where low readers were paired with high readers and felt inferior when they attempted to read. As a result their partner became frustrated and the session was unproductive and uncomfortable for both parties involved. There may be a need for more careful pairing by the teacher to incorporate students' ability levels as well as their personalities when creating the pairs.

In the sustained silent reading classroom, the observer also noted several positive behaviors that seemed to result from participation in the program. The children became less dependent on the teacher for help in applying decoding strategies while engaging in independent quiet reading. They attempted to sound out words and make sense of what

they were reading more often with less support from the classroom teacher. Over the course of the ten week period, the observer noted that students began to pick up more challenging books for independent reading, which seemed to rise from greater self-confidence and a positive view of themselves as good readers. Motivation was high and the children were excited about reading books of their choice rather than being told what to read. Mary Leonhardt (1998) supports the benefits of this type of program and has found that being given the chance to engage in periods of free choice reading can benefit all types of readers. Poor readers can enjoy the chance to read material that interests them, average readers begin to see reading as a fun experience rather than a chore, and advanced readers begin to read highly challenging books and engage in more critical thinking activities.

For educators today, both of these types of reading programs are examples of classroom experiences that seem to foster positive attitudes toward reading, and help their students grow in their vocabulary and comprehension skills. According to Bender (1967) most teachers today, who are using a traditional method of instruction, do not have the time or resources to help the low achieving student or the advanced student rise to his potential due to the large number of children and the teaching load involved. One easily managed and cost effective way to increase individualization in the classroom and allow students more time to practice reading is through a paired reading program. Although the research in this study has shown that paired reading had no significant effect on achievement, it can be used as a valuable tool which may produce positive gains in vocabulary and comprehension. For those teachers whose educational philosophy includes a strong component of social and collaborative learning, paired reading is easy to implement and would be a valuable addition to any classroom environment. By allowing

children to engage in meaningful talk at their own level, you increase the chance that comprehension will be enhanced and that skills will be practiced and reinforced. Meaningful discussions will ensue, during the sharing, where children explore and learn new ways of reading in a safe atmosphere with peer support and encouragement. The program can be implemented to supplement existing instructional programs in any type of classroom with little need for preparation or resources.

Although little training was given to the students prior to the program, it is the researcher's opinion that more structured and ongoing mini lessons should be utilized both before and during the course of the program. Mini lessons, including teacher modeling of how to use different word attack skills or context clue strategies, are strongly suggested to increase the chance partners will assimilate and apply these strategies when helping their partners read. This in turn may lead to a more significant increase in reading achievement.

Although this random paired reading program worked well for the most part, it is suggested that a more careful pairing of students take place for maximum benefits to be received by all students involved. It is the researcher's opinion that students worked better together when paired with someone of similar or near similar reading level and personality. Further research in this area should include a study of first graders from different socioeconomic and geographical areas to compare achievement gains. It is also suggested that the study take place over a longer period of time, particularly in a first grade classroom where the students are just beginning to learn to read and build their confidence.

As a result of paired reading, teachers may find more time for attending to the individual needs of various students. Students seem to become more independent

readers when given the time to explore reading in a social context. Most importantly, paired reading may be the answer to motivating and catching the interest of beginning readers. As a result of this program, students were excited about reading to their friends and engaged enthusiastically in the reading process. Motivating children and instilling in them a love of reading is essential to beginning reading success in the early years. The researcher observed that after participating in this type of program, children kept books in their desks and preferred reading a book in their spare time to working on other available activities.

The sustained silent reading program can also be an easily implemented and cost effective method of enhancing reading instruction. This program may be particularly appealing to teachers whose educationally philosophy is more slanted towards independent quiet activities. Both reading programs can be a valuable asset to any classroom and will motivate, stimulate interest and let students take an active role in becoming confident readers who enjoy literature for its own purpose.

**Paired Reading and Achievement: Related Research**

Peer and cross-age tutoring have become established and useful practices for individualizing instruction to meet the needs of students with a wide variety of ability levels. Bender (1967) states that with the growing number of students in classes and heightened curriculum demands placed on teachers, educators do not have adequate time to provide reinforcement for the slow learners and challenging activities for the gifted students. Thus, the dilemma teachers face of how to find time, alternative means, and methods of providing differentiation of instruction to ensure all children reach their learning potential. Many strategies have been formulated by experts in the field attempting to meet the changing instructional needs present in schools today. However, numerous strategies have failed because of the level of teacher effort required or the cost of purchasing additional materials, inherent in effectively implementing them.

(Greenwood, Carta, and Hall, 1988) Peer-mediated instructional practices seem to overcome these difficulties and provide teachers with an easily manageable and cost-effective method of enhancing the academic and social behaviors of their students.

In a review of the research in this field, Rekrut (1994) stated that “peer and cross-age tutoring are as natural as sibling relationships and occur whenever a more accomplished student aids a lower achieving classmate, or when an older student instructs a younger one.” (p.356) Within the peer tutoring context, a more able reader (tutor) helps a less able reader (tutee) understand concepts, practice skills, and develop strategies to improve fluency and increase comprehension. (Bender, 1967) Many educators neglect the use of peers as powerful agents for increasing reading achievement and improving attitudes and self-concepts. (Jenkins and Jenkins, 1987)

The earliest form of peer tutoring was established in England, during the 19th century, by Joseph Lancaster and Andrew Bell in response to the difficulty of educating

large groups of children in a one room schoolhouse. (Rekrut, 1994) To effectively meet the needs of a student body, diverse in both age and ability level, older and more proficient students were trained to teach the younger children. The schools operated based on the principle that children learn most effectively from their peers. (Guttek, 1992 cited in Rekrut, 1994)

The early reports of success in using peers as teachers, spurred the renewed interest and research of the mid 1960's of using peer and cross-age tutoring as effective educational strategies. There were a significant amount of studies and large scale tutoring projects begun during this time period. Among them, Weitzman (1965) conducted a study to determine the effects of a tutoring program where thirty high school juniors and seniors taught groups of three to five students using their own strategies in math, language and science. The study sought to determine the effects of this program on the achievement of tutees with respect to tests, quizzes, reports, essays, homework, interest and motivation in the subject areas, and study habits. Findings indicated that the effect on achievement of tutees with regard to tests and quizzes was not significant; however improvement on reports, essays, homework, study habits, and increased interest in subject areas was found.

Large scale tutoring projects also emerged in response to a growing concern of the underachievement of lower class children in reading. In most cases, the easy answer was hiring a professional to provide extra help for a struggling student. However, because of the expense, this type of solution was not feasible for the underprivileged families of these children. The widespread need to address this issue prompted the founding of a program called the Mobilization For Youth. ( Cloward, 1967) Instituted in New York City, the program used tenth and eleventh grade high school students from low

income areas to tutor fourth and fifth grade students who were performing below grade level in reading. Both tutor and tutee groups were of similar African American or Puerto Rican descent. Several experimental studies were set up to evaluate the effectiveness of the program. The findings concluded that students who were tutored showed a gain of six months in reading compared to a control group who demonstrated only a three and a half month gain. The implications of these studies indicate that utilizing students to tutor, who come from similar backgrounds as tutees, creates an empathic relationship in which both parties benefit socially and academically. (Cloward, 1967) These positive outcomes provide an alternative strategy of casting low motivated, at risk students in the role of teacher to improve their self esteem and academic achievement. It far outweighs the deleterious effects of putting them in conventional learning situations where they are forced to read out of lower level texts and subsequently feel inferior to their peers.

In 1968, Lippit and Lippit (cited in Devin-Sheehan, Feldman, and Vernon, 1976) also developed a cross-age tutoring program which was implemented in the Ontario - Montclair School District. Within a three year time period, seventh and eighth graders tutored low achieving fourth, fifth, and sixth grade students in reading, math, and language arts. Results indicated that tutors and tutees achieved academic gains as a result of their participation in the program.

Fleming (1969) reported on another project called Student Team Action (STA) established in the Portland Oregon School System. The focus of the program was to make learning experiences more meaningful for the children and allow time for more individualized instruction. Within this program, upper grade students prepared lessons and taught them to primary grade students. The tutors were motivated to reach the young children as they developed insight into the responsibilities of being a teacher. The

self-esteem of the primary children grew as they had the chance to express ideas and feel support in a safe and positive learning atmosphere. Cloward concluded that the tutoring project had positive effects in the academic and affective domains of both tutor and tutee. (Cloward, 1967)

During the 1970's there was a scarcity of teachers in the United States and thus a revival of initiative by educators to use peer and cross-age tutoring as integral components of their daily instruction. (Rekrut, 1994) A myriad of teachers have observed the positive effects of tutoring on the low achieving student. Topping (1989) reported that low achieving readers seldom receive the attention they require from teachers to improve learned skills. Subsequently it is beneficial for them to engage in a structured cooperative experience where they are learning new things, reinforcing old skills, and receiving consistent feedback and praise in a supportive atmosphere. (Hiebert, 1980)

The main focus of the major research conducted in this field has centered on the effect of the tutoring process on low achieving or younger tutees. However, a significant amount of research has also been conducted to analyze the effects of such programs on the tutor. Bender (1967) stated that the tutor is forced to organize and verbalize his thoughts to convey concepts and skills to the tutee. By engaging in this process, the tutor helps himself better understand and conceptualize the information in his own mind. The subsequent review of studies will look at effects on both tutor and tutee in peer and cross-age tutoring.

One study addressed the difficulty sixth grade teachers faced in finding positive ways to build the reading skills and self - confidence of their low achievers. Frager and Stern (1970) found that these students rebelled when forced to read out of primer level texts in remedial reading instruction. A more promising alternative was to immerse them

in the role of the teacher and challenge them with the responsibility of helping a younger child learn to read. Frager and Stern reported on the findings of a study in which forty eight sixth grade high and low achievers were paired with kindergarten students to provide remedial help in reading. Results indicated that both groups of high and low achieving tutors demonstrated an improvement in school morale, self-esteem, and attitude about their own reading ability.

Morgan and Toy (1970) based their research on the principle that educators should continue to strive to establish child-centered classrooms where students are active participants in their own learning process. This is a common goal of many teachers and supports the foundation for the tutoring programs set up in their classrooms. Morgan and Toy conducted a study of thirty two students (grades two - five) in a rural New York State School System in which half were assigned to an experimental 'student learner' group and half to a control 'student learner' group. Students in the experimental group were tutored by students in the eighth through twelfth grades. Both student learners in the experimental group and their tutors showed significant gains in achievement over a four month period as measured by pre and post test performance on the Wide Range Achievement Test. On the basis of this study it was proposed that children teaching other children is a necessary process in order for them to learn most effectively.

Some studies have keyed in on the role of adults providing help in a one-to-one tutoring context. In 1971, Shaver and Nuhn studied the effects of a tutoring project where adults taught fourth, seventh, and tenth grade underachieving students over the course of a year. (Devin-Sheehan, et al., 1976) Significant gains were made by students in all three grades. Many students made progress toward or exceeded their learning potential in the areas of reading and writing. (Shaver and Nuhn, 1971 cited in Devin-Sheehan, et al.,

1976)

Another study compared the effects of Reciprocal Peer Tutoring (RPT) to direct adult-child tutoring. Allen and Boraks (1978) paired children of the same age and ability level in grades two to five. The pair alternated their role as tutor and tutee and taught one another, after having been instructed to use several different types of teaching behaviors. Results showed that students in the RPT group achieved greater academic gains than those who were tutored by adults. Boraks and Allen emphasized the high element of structure involved in the RPT program and its influential role as a contributing factor to the achievement gains observed.

The 1980's brought about a more intensified look into the practice of using peer directed activities to multiply learning opportunities both in and outside the classroom. Hiebert (1980) observed peers as reading teachers. She stated that as students' developmental levels and experience with social interaction increased, they were able to engage in independent activities that were far more complex. Trovato and Bucher (1980) utilized peers as reading teachers and built in an added component of home-based reinforcement. The purpose of the study was to determine how peer tutoring effected the reading achievement of deficient readers in grades two to four. Participating students were randomly assigned to three groups - Peer Tutoring Only, Peer Tutoring with Home-Based Reinforcement, and a control group. Findings indicated that those students in the Peer Tutoring Only group demonstrated a significant increase in oral reading and comprehension skills. That effect doubled for the students in the Peer Tutoring with Home-Based Reinforcement group. This study supported strong implications of the need for parents to provide reinforcement of school practices at home.

In 1982, Cohen, Kulik, and Kulik compiled a meta-analysis of findings from

tutoring programs in sixty five independent schools. A previous meta-analysis by Hartley in 1977, found positive effects of tutoring in teaching mathematics to elementary and secondary students. In addition, he discovered that those effects were stronger than when other forms of instruction were used, such as computer based or conventional programmed instruction.( Cohen et al., 1982) Cohen, Kulik, and Kulik (1982) attempted to expand Hartley's research and include outcome data from studies that looked at achievement in a wider variety of subject areas, and the effects of tutoring on attitude and self-esteem. Out of the fifty two achievement studies reported, forty five demonstrated that tutees scored higher on performance tests compared to those instructed in conventional classes. Of the studies completed to examine effects on the tutor, thirty three of the thirty eight studies indicated that tutors performed better on tests than did control students. The remaining studies investigated the effects of tutoring on students' attitudes toward subject matter and self-concept. The results indicated positive effects for both tutor and tutee in these areas.

The 1980's also brought an investigation into the effects of paired reading. Within this program, random same age peers participated in a cooperative unstructured reading experience. Although most of the research has found positive gains for students in a highly structured tutoring atmosphere, unstructured programs have proven to be effective as well. Gerber and Kaufman (cited in Leach, 1993) noted, "... peer tutoring may be at least as effective as teacher led instruction under certain conditions, and that peer tutoring as a supplement to teaching may be better than teaching alone." (p.160)

Hong (1981) researched one type of these programs called "Booktime". Booktime allowed children to read books quietly in the library corner. Hong found that students naturally gathered to read in pairs, exchanged responses to literature selections, decoded

words in the text, and gained a more comprehensive understanding of what the story was about when engaged in this type of recreational reading.

Koskinen and Blum (1986) also discussed the importance of children engaging in real literature experiences and presented a strategy of paired repeated reading to reflect this idea. Within these paired reading interactions, randomly assigned, same age peers were meaningfully involved with books in a social context where they could practice old skills, develop new skills, and receive encouragement and feedback from their peers. Koskinen and Blum concluded that random pairing of reading partners was beneficial for both reader and listener. They observed gains in oral fluency, word recognition and comprehension of below average readers who participated in this type of peer interaction.

In 1987, Keith Topping reported on a paired reading technique to build on the advantages of parents reading with their children at home. Within these partnerships, the child chose the text and shared the reading process with his/her parent. Praise was built into the process as an essential component to reward and reinforce correct reading strategies employed by the child. Evaluation studies which included feedback from parents, indicated that children who engaged in these types of unstructured paired reading partnerships, achieved three times the normal progression in accuracy and fluency of reading and five times the normal progression of understanding of the text. Results from a random sampling of 345 parental questionnaires also showed that two thirds of the children surveyed read more independently and seemed to enjoy their active role in the reading process. (Topping, 1987)

Throughout the mid 1980's other studies continued to experiment with tutoring projects involving low achievers or learning disabled children. Limbrick, Mc Naughton and Glynn (1985) took a closer look at the research confirming that a good predictor of

students' achievement is the amount of time they spend actively engaged in reading. Based on this premise they felt that low achieving readers needed a considerable amount of engaged active reading time to learn appropriate skills. Unfortunately, observations of classroom instruction indicated that these children spent less time engaged in meaningful reading than their peers. To further investigate this problem, Limbrick, et al. (1985) conducted a study where three ten and eleven year old underachieving students tutored three underachieving six, seven, and eight year olds. Pairs participated in the reading of texts where modeling and praise was provided by the tutors. Another facet of the experimental design was for tutors to read silently along side tutees also reading silently, and requesting help from the tutors as difficulties arose. As a result of tutoring, tutees showed gains in reading skills and comprehension, and improved performance on classroom assignments and standardized tests. Tutors also demonstrated academic gains and increased oral reading levels as a result of independent silent reading of their own. This combined process of tutoring and allocation of extra time spent engaged in active reading was responsible for the positive effects observed in this study. Tutors were taught deliberate teaching strategies to use in their sessions which also seemed to be an essential component of the success of this program.

Another study focused on special education students acting in the role as the tutor in cross-age and peer tutoring programs. Scruggs and Osguthorpe (1986) conducted a study to evaluate the effectiveness of cross age (Experiment 1) and peer tutoring (Experiment 2) programs in which special education students acted as tutors. The study took place in a western rural public school system where forty seven elementary students in grades one through six were identified as learning disabled (LD) or behaviorally disordered (BD). LD and BD students tutored younger LD and BD students in

Experiment 1 and same age LD and BD students tutored each other in Experiment 2, alternating roles of tutor and tutee. Findings indicated that in Experiments 1 and 2, academic gains were achieved by both tutor and tutee, however only in Experiment 1 was there an improvement in attitude toward school by students. Thus, it can be concluded that cross-age and peer tutoring are promising alternatives to improving the academics and attitudes of special education students.

Dowhower (1989) reported on yet another technique for improving the reading ability of remedial and developmental readers in the regular classroom. She reported on the findings of several recent studies which have concluded that when children engage in experiences of repeated reading, their accuracy, reading rate, and comprehension skills increase. Dowhower comments on two types of repeated reading techniques - Assisted Repeated Reading which occurs when a child reads along with a live or audiotaped model of a passage, and Unassisted Repeated Reading where children practice repeated readings of passages or text independently. She reported that as a result of engaging in either process - slow readers demonstrated increases in reading rate and accuracy on unpracticed passages and made gains in comprehension on practiced texts. This also invariably led to gains in understanding of unpracticed texts. In one small study Dowhower found that after rereading five practice stories at a second grade level, students comprehension grew from 66% to 88% on unpracticed passages. Other teachers have integrated this technique into cooperative learning experiences such as the paired repeated reading program created by Koskinen and Blum (1986). Either way it is incorporated into instructional routines of a classroom, the research shows that repeated reading is a beneficial practice that can be used to enhance the reading skills of both good and poor readers.

Some studies in the 1980's rose out of a concern for the dissatisfaction of instructional practices provided to children of widespread ability and socioeconomic levels. Delquadri, Greenwood, Whorton, Carta and Hall (1986) provided an overview of research studies conducted to investigate the effects of classwide peer tutoring to help improve the education of minority, disadvantaged or learning disabled children in regular and special education classrooms. After several research observations, it was discovered that students were not engaging in an active level of responding during teacher directed instruction which invariably had negative effects on their achievement. Based on the assumption that the opportunity to respond was a critical component of student achievement, classwide peer tutoring procedures were implemented to create the active student responding necessary for success in oral reading and writing activities. One study found that active student responding increased from 28% to 78% as a result of classwide peer tutoring in oral reading, comprehension and workbook activities (Elliot, Hughes and Delquadri, 1984 cited in Delquadri et al., 1986).

Greenwood, Carta and Hall (1988) presented a review of research to discuss peer tutoring strategies as effective for changing student behaviors such as attention, compliance and appropriate social interaction. Often times behavioral management techniques are employed by teachers in isolation and do not attend to the academic and behavioral demands of the whole class. Researchers have found a strong connection of compliance in the classroom to the academic experiences provided to the children. Therefore organizing peer mediated tutoring experiences where children are actively engaged in academic behaviors, will decrease the likelihood that they will engage in inappropriate behaviors. Topping (1989) supported this theory and commented that the very cooperative, active and interactive nature of peer tutoring entices children with

behavioral problems to act appropriately and find great satisfaction from acting as the tutor in the paired relationship.

As the 1980's came to a close, a broad variety of cooperative learning strategies continued to be applied across various grade levels and subject areas among educators in the United States. (Slavin, 1987) Most teachers to date have implemented cooperative learning strategies as a supplement to their instructional programs across subject areas. However those who have adhered to conventional programs of instruction are denying their students the benefits to be gained from the use of peer involvement in classroom activities.

Research conducted from Johns Hopkins University (Slavin, 1987) focused on various methods of cooperative learning that could replace traditional instruction in particular subject areas. One program examined the use of peer teaching to instruct third and fourth graders in reading and writing. The program, Cooperative Integrated Reading and Composition (CIRC) included students working in team pairs who participated in oral reading, predicting and summarizing, spelling, decoding of vocabulary and writing process skills. Findings from the eleven experimental and ten control classes indicated positive effects on achievement favoring the experimental group in areas of reading comprehension, vocabulary, language expression, mechanics, and spelling. In general, classes instructed with CIRC methods showed gains of 30% to 70% of grade equivalents more than control students. Various types of cooperative group or paired experiences have proven to be highly effective in accelerating the achievement of reading and language skills of elementary students. (Slavin, 1987)

The more recent research of the 1990's has sought to broaden our understanding of why and how peer and cross-age tutoring produce various effects and implications in

the field of education. Further experimental research was conducted most recently to build and expand on studies previously mentioned in this review. The amount of students being identified as learning disabled, low achieving, or at risk has grown at an alarming rate during the 1990's. Teachers again are struggling to acquire more comprehensive strategies for attending to the needs of these learners in their classrooms.

Many of the more recent studies have reported on positive effects in the affective domain of learning such as improved self-concept, attitude, and the building of partnerships and bonds among children of various ages. Susan Coleman (1990) used middle school remedial readers as cross-age tutors to teach kindergarten and second grade students reading and writing. As a result of planning activities for their students, tutors developed leadership skills and had more positive attitudes towards reading and writing as a result of the improvement of their own skills.

Gartner and Riessman (1993) reported on a new model of peer tutoring where self-esteem rose as low achieving tutors, who were previously tutees, organized and relearned material in order to effectively communicate it to tutees. This developmental process removed the negative stigma often attached to getting extra help and replaced it with the idea that every student was giving and receiving as part of the learning process.

Leland and Fitzpatrick (1994) assessed the attitudes of sixth grade students after being paired with kindergarten children to teach reading and writing skills. A pre-assessment of attitudes indicated that the tutors lacked self-confidence and did not view themselves as competent readers and writers. Tutors demonstrated the use of story mapping skills in order to co-author books with their kindergarten partner. As a result of their participation in this project, tutors reported a positive attitude when engaging in reading and writing activities both at home and at school, and stated that they felt

important as the role model in the learning partnership.

Dixon-Krauss (1995) conducted a study to investigate how peer social interaction as part of reading instruction improved the reading and writing skills of twenty four first and second graders participating in cooperative pair groups. The study found that students' word recognition and use of higher level thought processes improved as a result of partner storybook reading and dialogue in response journals. Dixon-Krauss also assessed the attitudes of these readers before and after treatment and found that children felt more secure about reading aloud and about how their peers viewed their reading performance after treatment.

In response to the growing need for teachers to use strategies to differentiate instruction to reach the gifted and provide reinforcement for the slow learners, D. Fuchs, Mathes and Fuchs (1995) designed a Peabody Classwide Peer Tutoring program (CWPT) which paired a high and low performing reader to participate in activities of retelling, paragraph shrinking and prediction relay. It was found that as a result of being involved in the CWPT program, a variety of learners including low, average, high, and those with disabilities, made gains in reading achievement.

Most recently, an expansion of the above mentioned study was conducted to study the effectiveness of a Peer Assisted Learning Strategies Program (PALS) on the reading progress of low achieving students, with and without disabilities, and average achieving students. Student pairs, consisting of a high reader as the tutor and a low reader as the tutee, participated in thirty five minute sessions of practice with three different types of reading activities. Findings showed that achievement and social skills increased across the various learner types after the program was implemented.

The most common integration today, of one-to-one tutoring instruction, can be

seen in the Books and Buddies programs established in widespread classrooms. A Reading Buddies project was developed in 1996 in which high school students tutored first graders. (Caserta-Henry, 1996) Tutors were responsible for lesson planning and learned how to assess students' developmental skills, deal with behavior problems, and help encourage children who had low self-esteem. As a result of tutoring, high school students displayed increased academic growth. First graders also had more positive attitudes toward reading and were more willing to take risks in their reading experiences. (Caserta-Henry, 1996)

Another Books and Buddies program was created by Kreuger and Braun (1999) in response to meeting the needs of a large population of ESL students in their school district. Twenty two grade two students and twenty eight grade three students were paired to participate in daily reading activities. Findings indicated that second graders achieved an increase of 1.5 years and third graders achieved an increase of 1.65 years with respect to fluency and comprehension. This study provided further support for the positive effects on achievement that occur during paired reading for both tutor and tutee.

Peer and cross-age tutoring are topics that have been researched for decades. As a result, a general agreement among researchers has emerged. Since the type of instructional processes and routines used by teachers invariably affects a student's cognitive and social growth, it is imperative that educators continue to find alternate methods of instruction to increase their students' achievement. Cooperative and peer-mediated instruction have proven to be optimal strategies for achieving this goal. In general, the research cited in this review points to the increased achievement and social growth of elementary and secondary school students who participate in peer directed activities.

The trend in education today is to provide alternative avenues for learning that prepare children to become self-directed managers of their own learning processes. As a tutor, becoming engaged in the role of providing support, guidance, and academic assistance to another student, allows the tutor to assume responsibility for his own learning and other's learning experiences. (Hedin, 1987) In the same respect, the tutee benefits from participating in a structured learning experience where he/she may receive the one-to-one interaction, feedback, and praise often neglected because of the time constraints and true nature of traditional classroom instruction. Slavin (1987) put it best when he stated that

“students and teachers should feel that the idea that students can help one another learn is not just applied on occasion, but is a fundamental principle of classroom organization. Students should see one another as resources for learning, and there should be a schoolwide norm that every student's learning is everyone's responsibility, that every student's success is everyone's success.” (p.12)

One of the most flexible, cost-effective and manageable ways to do this is by utilizing peer directed learning experiences as a central focus of classroom instruction.

Within the field of peer tutoring and cross-age reading, most of the research studies have cited a high element of structure inherent in these programs as a strong predictor of their success. There seems to be a need for further research to investigate the advantages of peer-mediated reading where pairs are chosen at random in the same grade classroom to partake in unstructured literacy encounters. Shared reading is easy to set up and monitor and provides a flexible method of individualizing instruction. This type of cooperative learning experience may be just as effective, if not more effective, than other types of conventional whole group literature instruction offered in many classrooms today. The benefits to be gained by both teacher and students are immeasurable.

**References**

- Allen, A.R. & Boraks, N. (1978). Peer Tutoring: Putting it to the Test. The Reading Teacher, 32, December, 274-278.
- Bender, K.R. (1967). Using Brighter Students in a Tutorial Approach to Individualization. Peabody Journal Of Education, 45, 156-157.
- Burns, P.C., Roe, B.D., & Ross E.P. (1996). Teaching Reading in Today's Elementary Schools. New Jersey: Houghton Mifflin Company.
- Caserta-Henry, C. (1996). Reading Buddies: A First Grade Intervention Program. The Reading Teacher, 49(6), 500-503.
- Cloward, R.D. (1967). The Nonprofessional in Education. Educational Leadership, 24, April, 604-605.
- Cohen, P.A., Kulik, J.A., & Kulik, C-L.C. (1982). Educational Outcomes of Tutoring: A Meta-analysis of Findings. American Educational Research Journal, 19 (2), 237-248.
- Coleman, S. (1990). Middle School Remedial Readers Serve As Cross-Grade Tutors. The Reading Teacher, 43 (7), 524-525.
- Delquadri, J., Greenwood, C.R., Whorton, D., Carta, J.J., & Hall, R.V. (1986). Classwide Peer Tutoring. Exceptional Children, 52 (6), 535-542.
- Devin-Sheehan, L., Feldman, S. & Allen, V.L. (1976). Research on Children Tutoring Children: A Critical Review. Review of Educational Research, 46 (3), 355-385.
- Dixon-Krauss, L.A. (1995). Partner Reading And Writing: Peer Social Dialogue and the Zone of Proximal Development. Journal of Reading Behavior, 27 (1), 45-63.
- Dowhower, S.L. (1989). Repeated Reading: Research Into Practice. The Reading Teacher, 42 (7), 502-507.
- Fleming, J.C. (1969). Pupil Tutors and Tutees Learn Together. Today's Education, 58 (7), 22-24.
- Frager, S. & Stern, C. (1970). Learning by Teaching. The Reading Teacher, 23 (5), 403,417.

- Fuchs, D., Fuchs, L.S., Mathes, P.G., & Simmons, D.C. (1997). Peer-Assisted Learning Strategies: Making Classrooms More Responsive to Diversity. American Educational Research Journal, 34 (1), 174-206.
- Gartner, A. & Riessman. (1993). Peer-Tutoring: Toward a New Model. ED 362506.
- Greenwood, C.R., Carta, J.J., & Hall, R.V. (1988). The Use of Peer Tutoring Strategies in Classroom Management and Educational Instruction. School Psychology Review, 17 (2), 258-275.
- Greenwood, C.R., Delquadri, J.C., & Hall, R.V. (1989). Longitudinal Effects of Classwide Peer Tutoring. Journal of Educational Psychology, 81(3), 371-383.
- Hatt, C. (1993). Shared Reading, Shared Learning. The New England Reading Association Journal, 29 (1), 22-27.
- Hedin, D. (1987). Students as Teachers: A Tool for Improving School. Social Policy, 17 (3), 42-47
- Hiebert, E.H. (1980). Peers as Reading Teachers. Language Arts, 57 (8), 877-881.
- Hong, L.K. (1981). Modifying SSR For Beginning Readers. The Reading Teacher, 34 (8), 888-891.
- Jenkins, J.R. & Jenkins, L.M. (1987) Making Peer Tutoring Work. Educational Leadership, 44 (6), 64-68.
- Koskinen, P.S. & Blum, I.H. (1986). Paired Repeated Reading: A Classroom Strategy For Developing Fluent Reading. The Reading Teacher, 40 (1), 70-75.
- Kreuger, E. & Braun, B. (1999). Books and Buddies: Peers Tutoring Peers. The Reading Teacher, 52 (4), 410-414.
- Leach, C. A. (1993) The Effect of a Paired Reading Program on Reading Achievement and Attitude in a Third Grade Classroom. Exit Project (Research in Reading), William Paterson College. ED 358424
- Leland, C. & Fitzpatrick, R. (1994). Cross-Age Interaction Builds Reading/Writing Enthusiasm. Education Digest, 59, March, 66-69.

- Leonhardt, M. (1998). Make Lemonade - How to Sweeten Your School's Climate for Reading. School Library Journal, 44, November, 28-31.
- Limbrick, E., McNaughton, S., & Glynn, T. (1985). Reading Gains For Underachieving Tutors and Tutees in a Cross-Age Tutoring Programme. Journal of Child Psychology and Psychiatry and Allied Disciplines, 26 (6), 939-953.
- Mathes, P.G., Fuchs, D. & Fuchs, L.S. (1995). Accommodating Diversity Through Peabody Classwide Peer Tutoring. Intervention in School and Clinic, 31 (1), 46-50.
- Morgan, R.F. & Toy, T.B. (1970). Learning By Teaching: A Student -To-Student Compensatory Tutoring Program In A Rural School System And Its Relevance To The Educational Cooperative. The Psychological Record, 20, 159-169.
- Rekrut, M.D. (1994). Peer and Cross-Age Tutoring: The Lessons of Research. Journal of Reading, 37 (5), 356-62.
- Scruggs, T.E. & Osguthorpe, R.T. (1986) Tutoring Interventions Within Special Education Settings: A Comparison Of Cross-Age And Peer Tutoring. Psychology in the Schools, 23, April, 187-193.
- Slavin, R.E. (1987). Cooperative Learning and the Cooperative School. Educational Leadership, 45 (3), 7-13.
- Topping, K. (1987). Paired Reading: A Powerful Technique For Parent Use. The Reading Teacher, March, 608-614.
- Topping, K. (1989). Peer Tutoring and Paired Reading: Combining Two Powerful Techniques. The Reading Teacher, 42(7), 488-494.
- Trovato, J. & Bucher, B. (1980). Peer Tutoring With or Without Home-Based Reinforcement, For Reading Remediation. Journal of Applied Behavioral Analysis, 13, Spring, 129-141.
- Weitzman, D.L. (1965). Effect of Tutoring on Performance and Motivation Ratings In Secondary School Students. California Journal of Educational Research, 16, 108-115.

**Appendices**

**Appendix A**  
**Control and Experimental Vocabulary Scores**

**Control Treatment**  
**Vocabulary Scores**

**Experimental Treatment**  
**Vocabulary Scores**

\*Scores show the number correct out of 32 questions.

\* Scores show the number correct out of 32 questions.

	<b>Pretest</b>	<b>Post Test</b>		<b>Pretest</b>	<b>Post Test</b>
1.	17	18	1.	28	30
2.	23	22	2.	17	25
3.	24	23	3.	26	29
4.	24	29	4.	24	26
5.	29	32	5.	19	27
6.	29	32	6.	19	22
7.	16	13	7.	26	31
8.	24	28	8.	25	28
9.	28	30	9.	24	28
10.	21	28	10.	16	22
11.	24	30	11.	16	22
12.	23	25	12.	18	24
13.	28	30	13.	12	19
14.	23	21	14.	19	22
15.	29	30	15.	25	26

**Appendix B**  
**Control and Experimental Comprehension Scores**

**Control Treatment  
 Comprehension Scores**

**Experimental Treatment  
 Comprehension Scores**

\*Scores show the number correct out of 32 questions.

\*Scores show the number correct out of 32 questions.

	Pretest	Post Test		Pretest	Post Test
1.	22	16	1.	32	32
2.	28	28	2.	20	28
3.	21	25	3.	32	33
4.	29	33	4.	28	34
5.	30	32	5.	23	30
6.	32	32	6.	18	28
7.	17	23	7.	32	32
8.	27	25	8.	32	33
9.	18	21	9.	27	30
10.	24	33	10.	16	26
11.	25	31	11.	16	22
12.	25	25	12.	22	31
13.	27	26	13.	10	11
14.	20	29	14.	20	25
15.	28	32	15.	31	33

