Reciprocal Teaching and Comprehension:

A Single Subject Research Study

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I would like to dedicate this Master's Thesis to my husband, Christopher, who has supported me throughout my graduate career. More importantly, he has taught me that if I can reach just one student in my class, I have accomplished more than most people do in their lives.

Lastly, I would like to acknowledge my parents, Robert and Susanne, whom without their guidance and love, I could never have reached my academic goals or have blossomed into the person and teacher I am today.

Reciprocal Teaching and Comprehension

Abstract

The purpose of this study was to investigate how reciprocal teaching affected vocabulary acquisition and reading comprehension in four at-risk students in a fourth grade inclusion classroom. A single subject research study method was used to measure the baseline of each student. Subsequently, students were assessed daily after receiving two interventions that alternated during a six week period: reciprocal teaching and guided reading. Key findings indicated that three of the participants increased in both vocabulary acquisition and reading comprehension skills. However, there were no differences found when both interventions were used for one of the participants. Overall, all participants gained the most benefits from the reciprocal teaching method.

Definition and Rationale of Reciprocal Teaching

There are many definitions of reciprocal teaching. Carter (1997) defined reciprocal teaching as the following:

> Reciprocal teaching parallels the new definition of reading that describes the process of reading as an interactive one, in which readers interact with the text as their prior experience is activated. Using prior experience as a channel, readers learn new information, main ideas and arguments. Most important, readers construct meaning from the text by relying on prior experience to parallel, contrast or affirm what the author suggests. All excellent readers do this construction. Otherwise, the content would be meaningless, alphabetic scribbles on the page. Without meaning construction, learning does not take place. Reciprocal teaching is a model of constructivist learning (Carter, 1997, p.65-66).

Lederer (2000) reported that Dole, Duffy, Roehler and Pearson (1991) stated that there were certain strategies that were crucial to understand and master in order to comprehend, such as summarizing and questioning. These strategies along with two more were implemented and applied when using the reciprocal teaching method. Reciprocal teaching was defined by Lysynchuck, Pressely & Vye (1990) and Palinscar and Brown (1984; 1985) and reported by Klingner and Vaughn (1996): "The reciprocal teaching model has been used to improve comprehension for students who can decode but have difficulty comprehending text" (Lysynchuck, Pressley & Vye, 1990; Palinscar

& Brown, 1984; 1985; Klingner & Vaughn, 1996, p.275). Palinscar and Brown (1984;

1989) added to this definition in an article reported by Hacker and Tenent (2002):

"Reciprocal teaching is an instructional procedure in which small groups of students learn

to improve their reading comprehension through "scaffolded instruction" of

comprehension- monitoring strategies" (Palinscar & Brown, 1984; 1989; Hacker &

Tenent, 2002, p.669).

There are four strategies used in reciprocal teaching: predicting, clarifying,

questioning and summarizing. Predicting occurs by utilizing prior knowledge and

discussing what will happen next in the text (King & Johnson, 1999). King and Johnson

(1999) also stated that while students were reading they could evaluate their predictions

and use their knowledge to see if their predictions were correct. Clarifying means that

students used their metacognitive processes while monitoring comprehension (King &

Johnson, 1999). King and Johnson (1999) described the questioning strategy as one that

allowed students to identify main ideas and remember important information by creating

relevant questions to the text. Finally, King and Johnson (1999) defined summarizing as

the strategy that told whether or not the students understood the text.

Klingner and Vaughn (1996) stated that the teachers model these four

strategies by using the think-aloud approach. Students became familiar and comfortable

with this method after continuous modeling done by the teacher. After the teacher

models the four strategies, comprehension was enhanced when the dialogue amongst

students occurred (Lederer, 2000). In addition, Speece, MacDonald, Kilsheimer and

Krist (1997) stated that reciprocal teaching was an instructional approach that truly

engaged students in the lesson. Soon afterward students practiced and applied each of the

four strategies in isolation, and eventually students became the leaders of the conversation within the group with little or no teacher involvement (King & Johnson, 1999). Allen (2003) reported that Palinscar and Brown (1984) discussed important points in the process of reciprocal teaching:

> First, the acquisition of the strategies is a joint responsibility that is shared by the teacher and students. Second, although the teacher initially assumes the major responsibility for the instruction and modeling of strategies, responsibility is gradually transferred to the students. Third, all students are expected to participate in the discussion. The teacher enables all students to participate by providing scaffolds in the form of supporting statements and prompts or altering the demands on the student. Finally, students are continually reminded that the strategies are useful methods that will help to improve their comprehension of the text. By continually trying to construct meaning from the text, students come to realize that reading requires not only the ability to decode words but also metacognitive strategies that facilitate constructive and evaluative activities (Palinscar & Brown, 1984, Allen, 2003, p.324).

In addition, Carter (1997) also stated that reciprocal teaching was characterized as dialogue that took place between the teacher and the student. It was referred to as study reading that required effort and being able to use these strategies in must-read situations (Carter, 1997). Hashey and Connors (2003) stated that in order for

reciprocal teaching to be effective, students must have plenty of opportunities to apply these strategies. It was essential that students learned the strategies in small groups and were given feedback by the teacher. The reciprocal teaching procedure also fosters relationships betweens students (Hashey & Connors, 2003). This procedure weaned students from being dependent readers into independent readers.

Reciprocal Teaching and Comprehension

There are numerous ways reciprocal teaching and comprehension relate to one another. Summarizing, clarifying predicting and questioning are all strategies that fostered comprehension. Carter (1997) investigates that the combination of reading comprehension and self-monitoring of comprehension strategies is necessary for improvement while reading. It also provides many opportunities for teaching and reinforcing strategies. In this method, not only do students monitor their own comprehension, they also become active participants in their learning and learn from others in the process.   When students became the teacher and interacted with their peers, this too enhanced their comprehension. According to Lysynchuck, Pressley and Vye (1990), students observe teachers completing various tasks and modeling them. Afterwards students attempt the tasks with little support from the teachers. Eventually the students assume the role of the teacher using one of the aforementioned strategies (Lysynchuck, Pressley & Vye, 1990).   In addition, students also gain deeper insights into text concepts and understanding (King & Johnson, 1999). The following case studies support the notion that reciprocal teaching increased reading comprehension.

The reciprocal teaching method requires students to monitor their reading comprehension. Strategies are used so that students comprehend better as they read various types of texts (Taylor & Frye, 1992). According to Greenway (2002), the goal of reciprocal teaching is to make poor comprehenders aware of how these strategies work, which ones to use and how to use them. "For example, summarizing the main idea of a paragraph of text helps students not only to connect what they already know to this piece of text, but also to predict what might happen in the next paragraph to check their prediction"(Greenway, 2002, p.114). In addition, students were learning to process a deeper understanding of the text.

One strategy used in reciprocal teaching is questioning. Rosenshine, Meister and Chapman (1996) stated that when students created questions, they paid attention to the content. It was essential for understanding and comprehension. Rosenshine et al. (1996) described how students needed to use their text to search for information and formulate questions in order to help them understand what they read. This also enabled students to become more involved when they were reading (Rosenshine, Meister & Chapman, 1996). Rosenshine et al. also mentioned that a facilitator was used to model the question generation strategy. The facilitator used procedural prompts to scaffold instruction. These procedural prompts included signal words, generating questions, main idea, question types and story grammars. Overall, teaching students to generate questions during the reading process fostered comprehension as well as improved reading comprehension. King and Johnson (1999) reported that four question types were used: right there, think and search, author and you and on my own questions. Each question

type and its score indicated that students were able to answer questions successfully on a literal level as well as speculated about a topic in the text (King & Johnson, 1999).

Reciprocal teaching also helps improve reading comprehension by utilizing listening skills. Research suggests it is possible to train students with poor decoding skills using the four strategies of reciprocal teaching. Aarnoutse and Brand-Gruwel (1997) combined this method with direct instruction. An intervention program was used and consisted of twelve lessons that focused on each individual strategy through direct instruction and guided practice. The teacher also used a think aloud approach which worked well in small groups. Their reading comprehension and listening skills both improved. Aarnoutse, Van Den Bos and Brand-Gruwel (1998) researched further again using reciprocal teaching in another listening context. Again, these methods were used with poor decoders. Students were introduced to each strategy using direct instruction. Instead of reading a specific text, the students listened to an audiotape and applied strategies just as they would if they were actively reading. Once again, both comprehension and listening skills improved.

Brand – Gruwel, Aarnoutse and Van Den Bos (1998) continued to study reciprocal teaching methods and how they improved comprehension in listening settings. They used poor readers from elementary and special schools. A reading questionnaire and a number of pretests and posttests were used. Students learned each strategy step by step. They were taught as self-questions (Brand-Gruwel, Aarnoutse & Van Den Bos, 1998). Students received twenty lessons a week this time. Brand Gruwel et al. (1998) emphasized that using reciprocal teaching in the listening setting not only benefited those who comprehended poorly but those who decoded poorly as well.

LeFevre, Moore and Wilkinson (2003) found that tape-assisted reciprocal teaching was used to help poor decoders and helped them apply this method in order to help improve reading comprehension. Poor decoders were often not exposed enough to quality literature and therefore were not given opportunities to show what they knew. However, by using high expository texts that aroused students' interests, these students achieved reading success. These texts were in the form of cassettes for students to listen and read along (LeFevre, Moore & Wilkinson, 2003). This supported students who had difficulty reading on their own. The goal was to motivate students by using reciprocal teaching methods and become involved in the reading process.

It is evident that strong dialogue amongst students enables them to construct meaning through reciprocal teaching. King and Johnson (1999) conducted a study that investigated whether or not reciprocal teaching provided fifth graders with a strategy to understand a non-fiction text. When teachers modeled the strategies, participated in conversation and provided guided practice, students imitated their mentors (King & Johnson, 1999). They utilized the reciprocal teaching strategies to create meaningful dialogue and supported one another with valuable feedback. It was clear that students made connections and applied new knowledge in many ways when observing strong teacher modeling (King & Johnson, 1999).

Palinscar, Brown and Martin (1987) found that peer interaction in which students modeled reciprocal teaching promoted learning from the text and enhanced comprehension. The goal of this study was to help the tutees understand what they read. Student engagement increased throughout reciprocal teaching (Palinscar, Brown & Martin, 1987). Teachers prepared students in the class using this procedure and the tutee

was both responsive to specific tasks and an active participant. The interaction included the following:

> The tutor would ask the tutee to be responsible for the paragraph, the tutee would begin by asking questions, and then the tutor would praise the questions or rephrase the questions, frequently building the questions on the idea identified by the tutee and often explaining why the question needed to be rephrased. The tutee would then repeat the question that had been modeled by the tutor (Palinscar, Brown & Martin, 1987, p.249).

Kelly, Moore and Tuck (1994) discovered how reciprocal teaching not only improved reading comprehension but also how it assisted in students' abilities to recall information. The study revealed that this procedure was effective as an instructional procedure for students who experienced problems with reading comprehension (Kelly, Moore & Tuck, 1994). Teachers modeled the procedure and students applied the strategies. The more practice students had, the more they remembered what they were reading and understood the material. Kelly et al. (1994) stated the following: "The reciprocal teaching process appears to be effective in making novice readers more expert in the cognitive encoding, organization and integration of material they and in executive functions of self-monitoring and control of comprehension, thereby helping them to find that memory" (Kelly, Moore & Tuck, 1994 p.54).

In two studies, reciprocal teaching improved reading comprehension in students who were average decoders but poor comprehenders (Lysynchuck, Pressley & Vye, 1990; Westera & Moore, 1995). Narrative and expository passages were used with

questions that pertained to the main idea and inferential questions. Scaffolded instruction by the teachers enabled students to become independent when monitoring their own comprehension. "Throughout the process, the adult provided critical metacognitive information about the strategies, such as commentary about why, when, and where to use the procedures that were being trained. This information was provided when each strategy was introduced and during the review of the strategies at the beginning of each session" (Lysynchuck, Pressley & Vye, 1990, p.474). Standardized assessments were used before and after the experiment to measure students' comprehension, Results indicated that the questions and answers used in each passage measured comprehension skills that exemplified competent reading. Westera and Moore (1995) assessed high school students in New Zealand before and after the implementation of reciprocal teaching. After five weeks of reciprocal teaching, the students who received 12-16 sessions made the most improvement in reading comprehension when compared to those students who received 6-8 sessions. In addition, the students' fluency improved and their ability to use the strategies independently within this time frame.

Reciprocal Teaching and Learning Disabled Students

According to Billingsley and Ferro – Almeida (1993), reciprocal teaching was an effective intervention that enhanced comprehension in learning disabled students. In their study, teacher modeling was extremely important. Observation was the key to learning and it was crucial for this population of students to see and practice these strategies. Effective modeling of strategies was especially helpful. Lederer (2000) also explained that reciprocal teaching was a good technique to use with students with

learning disabilities. The techniques used in reciprocal teaching would lead to students transforming into independent readers.

Strategy instruction was very important when teaching learning disabled students. They needed to be taught the following: "what the strategy is, why it is important, how to perform the strategy, when and where to use it and how to evaluate it" (Billingsley & Ferro – Almeida, 1993, p.168). Bruce and Chan (1991) found instruction beneficial when it is first teacher-directed and then transferred to student-directed. They also discovered that dialogue amongst students helped them overcome obstacles that prevented comprehension understanding (Bruce & Chan, 1991). Students' ability to ask questions and summarize information correlated with the comprehension scores of various tests (Bruce & Chan, 1991). It was clear that strategy instruction and reciprocal teaching helped students with learning disabilities.

In addition, Dao (1991) noted how this procedure and strategy instruction aided refugee South Asian – American students who were at – risk academically. Reciprocal teaching was used so that these students could transfer these strategies to a new situation opposite of their own (Dao, 1991). Their situations were not pleasant. Many factors contributed to their learning difficulties. They lacked educational direction, experience and they were illiterate (Dao, 1991). Another was that they experienced trauma in their lives that lead to disruptive behavior in the classroom. These students also had no family support as well as various health and medical problems. With all of these obstacles faced by these students, they did respond to the procedure due to careful modeling of strategies. The social interactions that occurred were desperately needed. Prior to implementing this procedure, an appropriate assessment was used to address strengths and weaknesses. As

reciprocal teaching was conducted, students demonstrated independence and led discussions after strategy instruction was implemented (Dao, 1991). "In addition, reciprocal teaching addresses a concern and how to help the refugee learn to generate problem-solving strategies for novel academic tasks" (Dao, 1991, p.600). Overall, it was a practical way for students to develop and apply strategies while engaging in the text.

Palinscar and Klenk (1992) conducted a study that also indicated that strategy instruction benefited young children with learning disabilities. Children in reciprocal teaching groups were able to understand the text and main ideas of the story. "They measured children's understanding of passages about which discussions were held" (Palinscar & Klenk, 1992, p.216). A posttest was used which asked students to classify pictures of animals and recall information. The students in reciprocal teaching groups were able to perform these tasks. Furthermore, once strategy instruction was evident, students engaged more in group discussions. By using dialogue, students were able to identify main ideas more clearly and answer questions about the passages presented. "The strategies provided an entrée for students as they engaged in their roles as discussion leaders. In addition, the strategies provided a mechanism whereby the students could collaborate" (Palinscar & Klenk, 1992, p.217).

Strategy instruction proved to be successful with using aids and support sheets with those students who were learning disabled. It was crucial to be flexible since these students had different learning disabilities and did not all learn the same way. Klingner and Vaughn (1996) furthered their investigation by using students who were both learning disabled and use English as a second language. Klingner and Vaughn (1996) also determined that the use of strategy instruction with this population improved

comprehension skills. Spanish was the primary language spoken amongst these students and was used in discussion in order to communicate and clarify any misunderstandings with others that spoke primarily Spanish as well. In this procedure, support sheets were given to each student to help them identify the strategy and apply it to the activity. It described each strategy and how to use it. Eventually, after continuous use of reciprocal teaching, these students began to tutor younger children using the same strategies and participated in larger group discussions. Brand-Gruwel, Aarnoutse and Van Den Bos (1998) used similar support sheets in their study. Students were given index cards that not only served as a reminder, but also gave directions before applying the strategies. Speece, MacDonald, Kilsheimer and Krist (1997) also used similar index cards that helped students develop a strong sense of the strategies. Each card had an icon that represented each strategy that the students were performing. Since some of the participants experienced difficulty verbalizing which strategy they were using, this was done to correct the problem. Flexibility was necessary when teaching the reciprocal teaching method to learning disabled students so that individual needs were met.   During the five week period, teachers also used high interest literature and noticed how students began to participate in meaningful discussions.

Dialogue and discussion enhanced comprehension and social skills of those with learning disabilities. Lederer (2000) found that students were able to generate questions pertaining to the text and wrote summaries using the information during and after dialogue occurred. Students clarified questions and initiated ideas as the intervention continued (Lederer, 2000). Not only did this heighten reading comprehension, but learning disabled students were socially interacting with general education students.

Bruce and Chan (1991) discovered that dialogue enabled students to synthesize important parts of the text. "For example, during the discussion and dialogue it was noticed that the year five boys initially did poorly on daily comprehension tests because they often read only one part of the sentence, leaving the portion with qualifying words like "didn't" or "but", which gave a sentence a meaning opposite to what they had thought" (Bruce & Chan, 1991, p.51). This type of conversation helped students to break down the meaning of the text. Klingner and Vaughn (1996) stated that students who participated the most in discussions gained the most benefits. It also enhanced oral language and fluency as students spoke with one another in groups. Marston, Deon, Kim, Dimont and Rogers (1995) discovered that learning disabled students showed higher achievement by engaging themselves in discussion when reciprocal teaching was implemented.

Modifications and Reciprocal Teaching

In many cases, teachers have made modifications and adaptations when conducting the reciprocal teaching procedure. These modifications were made due to students' lack of internalizing the various skills and strategies that were taught during this approach. The changes made to reciprocal teaching reflected the teacher's own beliefs and proper use of strategies (Hacker & Tenent, 2002). Some of these changes not only assisted students in learning how to use the suggested strategies in reciprocal teaching, but they also furthered the concept and incorporated ways for students to stay organized, increase higher level thinking skills and improve writing ability as well. Reciprocal teaching proved applicable beyond the subject area of reading and was incorporated in other content areas. It was evident that the changes made improved reading comprehension and addressed different needs to different types of students.

Dialogue in reciprocal teaching makes it very effective and useful. According to Hacker and Tenent (2002), modifications were made and they enhanced dialogue amongst students. Teachers used the whole class rather than small groups when reciprocal teaching was in progress. While one student read aloud, the remainder of the class listened and created questions (Hacker & Tenent, 2002). When clarifying, students circled the words or sentences that seemed confusing to them. Hacker and Tenet (2002) also stated that in this study the class created a whole class summary rather than an individual summary. "By providing more directive (i.e. providing more highly scaffolded instruction), the teachers found that the students maintained their discussion of the text longer and more seriously, were more active in their reading, and were provided with good models for summarizing, clarifying, predicting and questioning" (Hacker & Tenent, 2002, p.703). Thus, the teacher had more control of the group, monitored the activities more closely and kept everyone on task.

Writing was another modification made in reciprocal teaching. Hacker and Tenent (2002) mentioned that students wrote their own summaries and questions in class. Afterwards these summaries were evaluated by other students. Coley, DePinto, Craig and Gardner (1993) stated that students summarized a chapter after reading and wrote a five to six sentence synopsis of what was read. Coley et al. (1993) also noted how students used response journals in order to record answers to questions. Marks, Pressley, Coley, Craig, Gardner, DePinto and Rose (1993) stated that students wrote a one sentence summary that highlighted what the story was about. The four strategies also helped students with prewriting skills and the writing process. Slater and Horstman (2002) found that applying the questioning strategy helped students through the writing process

by planning, revising and producing final drafts of their questions and answers after reading a passage. During clarification, students not only wrote down the items that were confusing, but they also wrote the various ways that helped them resolve the problems (Slater & Horstman, 2002). Complete summaries were also written. When students made predictions, they wrote them down and wrote a comparison based on their prediction and those of other students.

Coley et al. discovered how question-response cues were used to help students generate questions. This modification was effective when students applied the questioning strategy. "It gave students a much more elaborated schema for various types of questions" (Coley, DePinto, Craig & Gardner, 1993, p.257). Students led discussions that were very interesting. Another change made in this study was the use of Think-Pair-Share. There were two different ways this strategy was incorporated. Coley et al. explained that the teacher would ask a thought provoking question and students paired with a partner to discuss the answer together. This encouraged students to become social and interactive with one another. Another approach that was explained was to ask students to think of their own question that pertained to the text and then pair up with a partner to discuss their ideas. Either way was quite successful and demonstrated the students' ability to create and answer questions. Marks et al. (1993) noted that students prepared questions during and after reading. Question starters were administered and this was the basis of group discussions. These discussions also improved the types of questions that were asked.

Another modification used in reciprocal teaching was the incorporation of graphic organizers throughout the lessons. Coley et al. found that teachers used graphic

organizers when they taught a higher level skill, such as cause-effect relationships. An example of one mentioned in this study was the sequence chain that listed characters and events in the story (Coley, Depict, Craig & Gardner, 1993). This sequence chain also taught and reinforced summarizing a story. Students filled in boxes with a relevant event from the story. When the boxes were completed, it was evident that a summary was completed as well as the correct events in order. Furthermore, students were able to generate questions from these graphic organizers and incorporated them into discussions led by the students. Marks et al. found that students used story maps as well, and this showed that students were able to detect and describe the main events in the story. They also used Venn diagrams to compare and contrast all different types of information and showed similarities and differences. Students also used these Venn diagrams to compare characters and compare the text that they were reading to other literature that they previously read. These changes extended the strategies used in reciprocal teaching.

Reciprocal teaching was also modified as a way of teaching mathematical word problems. "Solving mathematical word problems is often hindered by students' failure to comprehend the problem" (VanGarderen, 2004, p.228). VanGarderen (2004) also stated that the four strategies were applied when the class divided into smaller groups. One student was elected the leader of each role rather than each student assigned a role during the procedure. For example, the leader asked if any phrase in the problem needed clarification. The other strategies were applied as well and then the students designed a plan to solve the word problems once comprehension was achieved. Furthermore, there were ways for students with significant reading problems to comprehend and understand the problems. Students read problems orally and if someone had difficulty creating a

question, a chart was provided for students to refer to that gave examples. If students had

problems summarizing, key words were highlighted or a diagram was created that

showed the main points of the word problem.

Reciprocal Teaching and Other Methods

Reading comprehension of students has become a controversial issue in our

country's school systems. Teachers have used numerous methods that facilitate

comprehension and also reinforce skills such as sequencing events, predicting outcomes,

drawing conclusions and finding the main idea (Alfassi, 1998). Research indicates that

strategy instruction enhances comprehension more than skill-related instruction and also

engages readers so that they can construct their own meaning of the text (Allen, 1993).

Reciprocal teaching has been compared to other methods of reading and strategy

instruction and proves to be the most promising technique. While there were methods

that shared many difference with reciprocal teaching, there were also methods similar to

this procedure.

Alfassi (1998) reported a study where students participated in both reciprocal

teaching and the traditional method of remedial reading. The traditional method

consisted of skills such as identifying the main idea, summarizing, drawing inferences,

sequencing events and vocabulary knowledge. This method also utilized workbook

pages and repetition of skills. Written work was also evaluated by the teacher. Alfassi

(1998) reported a study where students participated in both reciprocal teaching and the

traditional method of remedial reading. Self-monitoring skills were studied to see

whether or not comprehension was achieved. It was clear those students who were taught

using the reciprocal teaching procedure improved self-monitoring comprehension more

than those who were taught using the traditional method of remedial reading. Teaching strategies in a group was far more beneficial, especially for those who truly struggled with reading (Alfassi, 1998). Alfassi (1998) reported that Glaser (1990) stated that students gained knowledge and learned self-monitoring strategies that were needed in order to become independent learners. These strategies were practiced and applied throughout reading and students remembered what they read. Alfassi (1998) also noted that reading comprehension was a cognitive process rather than a set of skills that needed to be mastered. During the traditional method of remedial reading, there was too much emphasis on drill practice which left no room for students to construct their own meaning of the text.

Greenway (2002) reported about an approach called Inference Training that was also compared to reciprocal teaching. It involved teaching children to recognize key words or phrases in order to answer comprehension questions. These questions were both inferential and factual. "It was focused very much on the analysis of individual word meaning" (Greenway, 2002, p.117). Reciprocal teaching had a lot more to offer than Inference Training. First of all, there was no modeling or feedback given by the teacher in Inference Training. This approach was only concerned with one strategy rather than all four of them (Greenway, 2002). It did, however, work well with those students who experienced difficulty with words, speech and language, poor verbal and semantic skills. It was easier to teach than teaching comprehension monitoring and assisted those who had difficulty remembering what they read.

Another approach compared to reciprocal teaching was The Corrective Reading Program. According to Greenway (2002), this approach consisted of the following:

direct instruction from the teacher, feedback given to the student and positive reinforcement. It also addressed comprehension of the text using questions but no teaching of comprehension occurred. Another component of the program was called the Thinking Basics and it enforced the teaching of decoding and comprehension to those with behavior problems. Unlike reciprocal teaching, the students were never given the opportunity to play the role of the teacher. It was designed for the same purposes and had similar characteristics to Inference Training.

Transactional strategy instruction was another method compared to reciprocal teaching. It shared some differences. "Transactional strategy instruction is based on the hypothesis that long term instruction coordinating memory and comprehension strategies with the interpretive processes will result in skilled readers"(Allen, 1993, p.327). It is based more on direct explanation and taught in a longer time frame than reciprocal teaching so that the strategies were applied more effectively. Making meaning occurred during reading, and motivation to read was heightened which resulted in reading more and increasing knowledge (DeCorte, Verschaffel & Van De Ven, 2001).

In other ways, transactional strategy instruction shared similar characteristics to reciprocal teaching. DeCorte et al. (2001) stated that both reciprocal teaching and using transactional strategy instruction in small group settings worked well for students. When teachers scaffolded instruction for the class, students successfully imitated these strategies and the role of the teacher was transferred to them. The transactional strategy instruction approach was ongoing and focused on the following: utilizing prior knowledge when predicting, questioning, clarifying, mental imagery, relate prior knowledge to text and summarizing (Allen, 2003). "However, this method also tries to

look at how comprehension strategies link to other subject areas, how students exhibit various cognitive and metacognitive competencies, how they show knowledge that the text can mean different things to different people and how students react to these strategies" (Allen, 2003, p.328). Students who were taught using this method understood the text and participated more when working with their peers just as in reciprocal teaching. Poor readers who used this approach also became more confident with their own reading abilities. This type of strategy instruction enabled students to perform various academic tasks. Students learned from one another as they exchanged information and fostered their comprehension. As a result, skilled readers were produced due to teaching strategy instruction (Allen, 2003).

Areas of Agreement

Many researchers agree that reciprocal teaching is useful in reading classrooms. One area of agreement is how reciprocal teaching increases reading comprehension (Alfassi, 1998; LeFevre, Moore & Wilkinson, 2003; Westera & Moore, 1995). It was used effectively with elementary students (Taylor & Frye, 1992). Standardized reading scores improved as a result of reciprocal teaching. It helped raised test scores and increase student achievement (Carter, 1997; Greenway, 2002; Lysynchuck, Pressley & Vye, 1990). It especially supported adequate decoders who comprehended poorly by providing an effective instructional procedure and increased their level of comprehension (Kelly, Moore & Tuck, 1994; Klingner & Vaughn, 1996; LeFevre, Moore & Wilkinson, 2003). It truly impacted the way students attempted reading tasks (Aarnoutse, Van Den Bos & Brand – Gruwel, 1998). Oral language and fluency improved as well (Klingner & Vaughn, 1996; Westera & Moore, 1995).

Another area of agreement was the effect that student participation had on comprehension. Cooperative learning, group discussion and dialogue were all beneficial during the reciprocal teaching procedure (Allen, 2003; Bruce & Chan, 1991; Dao, 1991; King & Johnson, 1999). This type of dialogue helped students monitor their comprehension, construct meaning and actively participate throughout the process (Alfassi, 1998; Billingsley & Ferro – Almeida, 1993; Bruce & Chan, 1991; Dao, 1991; King & Johnson, 1999). Furthermore, students deserved opportunities to reveal the strategies they learned and apply them (Hashey & Conners, 2003; Palinscar & Klenk, 1992). Reciprocal teaching also produced longer dialogue and increased participation (Coley, DePinto, Craig & Gardner, 1993).

Researchers agree that reciprocal teaching supports the comprehension of learning disabled students. Scaffolded instruction increases learning disabled students' comprehension levels and is recommended for inclusive classroom settings (Lederer, 2000). Learning disabled students participated in a meaningful way through discussion of the text (Speece, MacDonald, Kilsheimer & Krist, 1997). In addition, when modifications were made in reciprocal teaching, students were able to demonstrate knowledge of the strategies and use them as well (Coley, DePinto, Craig & Gardner, 1993; Palinscar & Klenk, 1992).

Strong teacher modeling is another area in which researchers agree. It is a major factor in the reciprocal teaching method. This allows students to mimic their teachers and is crucial when using strategies for comprehension purposes (King & Johnson, 1999; Palinscar, Brown & Martin, 1987). Teacher feedback also raises comprehension levels (Billingsley & Ferro – Almeida, 1993; King & Johnson, 1999). After awhile, minimal

support from the teacher promoted the transfer of roles to occur between teacher and student (Klingner & Vaughn, 1996). Students internalized the strategies modeled by the teacher. Students used these strategies to help them comprehend the text.

Many researchers agree that reciprocal teaching can be incorporated in other content areas (Alfassi, 1998; Hashey & Conners, 2003; Lederer, 2000; Taylor & Frye, 1992). It was used in social studies classes where the summarizing strategy was implemented after reading passages in the text (Taylor & Frye, 1992). Reciprocal teaching was also used in writing activities and during the writing process (Greenway, 2002). Other skills and strategies were enhanced throughout the reciprocal teaching procedure. Students were able to develop metacognitive strategies (Aarnoutse, Van Den Bos & Brand – Gruwel, 1998; LeFevre, Moore & Wilkinson, 2003). Inferential skills increased as students connected prior and present knowledge (Coley, DePinto, Craig & Gardner, 1993; Greenway, 2002).

Researchers agree that the way reciprocal teaching was taught was an important part of the learning process. Direct instruction made it possible for students to learn, internalize and apply strategies (Aarnoutse, Van Den Bos & Brand – Gruwel, 1998; King & Johnson, 1999). Reciprocal teaching was used as whole class instruction rather than small group instruction (Alfassi, 1998; DeCorte, Verschaffel & Van De Ven, 2001; Lederer, 2000). It was evident that during whole class instruction the outcomes were similar to small group instruction.

<u>Areas of Disagreement</u>

Although reciprocal teaching is an effective way to enhance comprehension, engage students in their learning and apply various strategies, researchers found some limitations. The first problem was the time frame in which reciprocal teaching was taught. It was suggested that reciprocal teaching occur for a longer period of time, perhaps an entire school (Lysynchuck, Pressley & Vye, 1990; Rosenshine, Meister & Chapman, 1996; Taylor & Frye, 1992). There was not enough time for students to transfer strategies learned in reading and listening settings (Brand-Gruwel, Aartnouse & Van Den Bos, 1998). In some cases teachers spent too much time talking and not enough time managing the activities or allowing the transfer of roles from the teacher to student instruction (Marston, Deno, Kim, Diment & Rogers, 1998; VanGarderen, 2004). When the transfer from teacher to student instruction was made, there were too many long pauses in between where the teacher should have stepped in to model strategies (Brand-Gruwel, Aartnouse & Van Den Bos, 1998; Slater & Horstman, 2002). This caused confusion for students participating in the group.

Another problem was the effect reciprocal teaching had on learning disabled students. It should not have been assumed that all learning disabled students demonstrated the same strengths or weaknesses in specific skills or strategies (Lederer, 2000). In fact, further research should examine how strategy instruction could be help learning disabled students who read poorly. In addition, not all students internalize strategies as well (Slater & Horstman, 2002; VanGarderen, 2004). There was no evidence that students monitored their comprehension during reciprocal teaching.

The teaching of strategies was the next concern of reciprocal teaching . The level of difficulty of the text impacted how the strategies were taught (Rosenshine, Meister & Chapman, 1996). Students were having problems mastering strategies and applying them due to the challenging passages they read. When teaching the questioning strategy, Marks et al. and Slater and Horstman (2002) found that too many literal questions were developed by students and not enough higher level, literal questions. Taylor and Frye (1992) discovered that there were no differences between the experimental and control groups in their research when students created questions based on textbook material. While teaching the clarifying strategy, there were mixed reviews. Researchers found that it was a challenge to teach this specific strategy (Speece, MacDonald, Kilsheimer & Krist, 1997) and not enough clarification questions were asked during the procedure (Slater & Horstman, 2002). Marks et al. noted that throughout the process there was skepticism regarding the teaching and mastery of all the strategies. Strategy lessons should have been used more often (Brand-Gruwel, Aartnouse & Van Den Bos, 1998).

Finally, another limitation was the distinct purpose of reciprocal teaching. It was used as a post-reading discussion rather than strategy instruction during reading. Various modifications were implemented and deserved further research (Hacker & Tenent, 2002). Flexibility was necessary so that all components of reciprocal teaching were incorporated.

The literature review shows how reciprocal teaching affected reading skills. The present study investigates how reciprocal teaching affected vocabulary and comprehension growth. The current research has not yet been found in a single subject research method study.

Methodology

<u>Subjects.</u>

Four students in the fourth grade Inclusion class combined with general education students participated in a single subject research method study. Each of these students was below grade level reading. The Reading Program used in the school was the Rigby Series and One Hundred Book Challenge. Rigby used DRA assessment that placed students on the Guided Reading level where they functioned the best. The levels were arranged by colors. The One Hundred Book Challenge promoted independent reading for fifteen minutes in school and thirty minutes at home and was also leveled by color and grade. By fourth grade, students should be reading in the Turquoise color in the guided reading Rigby Series and Black for One Hundred Book Challenge. The study participants were reading below these levels.

One student, John, was classified as Specific Learning Disabled and Attention Hyperactivity Disorder. His ethnic background was Hispanic and he lived in an urban area.   John was 10 years old and reads on a 2.9 grade reading level. He was on White for One Hundred Book Challenge (mid year third grade) and Silver for Rigby (third grade). He demonstrated difficulty comprehending what he read and supporting his ideas with facts from the story. When John retold a story or takes an assessment, he did poorly. John was impulsive, often at times calling out answers that were not relevant to the story. He had problems retrieving information from his long term memory. He did exemplify a

few strengths: the strategies he used to decode unfamiliar words and how he used context clues to help define words.

Paula was a 9 year old fourth grade student who transferred to our school from the Bronx, New York. She was African –American and lived in an urban area. She was in the process of being referred for Special Education Services in the areas of Reading and Math. She was on Silver in the Rigby Series and Double Red for One Hundred Book Challenge (late second/early third grade). Paula had extreme difficulty understanding main ideas, summarizing and had a limited vocabulary. She failed Reading last marking period. Paula read word by word and needed to improve on fluency. She also demonstrated problems identifying the theme of a story and using facts from the story to support her ideas and answers to questions.

Larry was a 9 year old fourth grade student who had a hard time following the events in a story. He, too, lived in an urban area and was of Hispanic descent. He was on Silver in the Rigby Series also and on White (mid year third) for One Hundred Book Challenge. Larry was currently working on using the text to locate answers as he answered comprehension questions. Often at times he wanted to find answers quickly rather than find the correct answers. He also needed to use context clues more when trying to figure out meanings to new words. Larry tended to daydream, and when he responded to discussions about the text he was, most of the time, completely off topic. Abstract thinking and making connections to the text was also a problem for Larry. The researcher was going to give Larry until the end of the second marking period to see if progress was made possibly referring him for Special Education Services.

Ralph was a 10 year old student in fourth grade. He was kept back in third grade last year and was currently being referred for Special Education Services. He lived in an urban area and his ethnic background was also Hispanic. Ralph was a hard worker and gave great effort in school. He took his time and thought things through before answering. He, too, tended to be off topic and had difficulties understanding the main ideas, summarizing the story and detecting the theme of a story. He had limited vocabulary and had a hard time making connections to what he was reading. It was recently discovered that Ralph was also a visual and tactile learner. He was on the Double Red level for One Hundred Book Challenge (late second/early third grade) and Silver for the Rigby Series.

Materials.

Students used instructional materials from the curriculum. Each of these students were all on the Silver level for guided reading and had currently been working together in the same group since the beginning of the year. Recently, the group had started reading more chapter books. For this research, students received their own individual copy of a fictional text on a third grade level where they read with ease and read independently as well. Reader response journals were used for the procedures that were implemented in this research. Laminated strategy cards were used for students to refer to with definitions and examples of each strategy covered. Finally, daily assessments (an assessment after every trial) were used in order to help determine the baseline of each participant.

Procedure.

Students received two interventions, two to three times a week for forty-five minutes each time (a total of one hour and fifteen minutes) for a period of six weeks.

One intervention that was used was Guided Reading. Guided Reading was direct instruction given by the teacher. Students read some portions of the text aloud with the teacher and read other portions silently. Both the teacher and the student paused at key points and discussed the events and the teacher then assessed comprehension. Students used reader response journals to record the following information as they read with teacher guidance: predictions, vocabulary, story events, characters, setting, summary and theme. The alternate intervention, Reciprocal Teaching, was also used. There were four roles involved in this method: the clarifier (what does not make sense and how can we make sense of it?), the predictor, the questioner and the summarizer. Using laminated strategy cards, students saw each strategy modeled first by the teacher. Then students internalized these strategies and demonstrated each strategy within the group. Each student had a role and they changed each role on a daily basis. The discussions became student directed rather than teacher directed. They recorded their clarifications, predictions, questions and summaries in their reader response journals. Each intervention alternated each week and the researcher measured which was the most appropriate and effective for this group of students.

Results

The raw data for this study are presented in Tables 1-8. The analysis of this data revealed that three participants improved in vocabulary and comprehension when the Reciprocal Teaching method was implemented. The researcher discovered that one of the participants achieved equivalent scores for each assessment when both interventions were used. The baseline used for Larry was 69%. The scores he achieved on the assessments were higher than this baseline during both interventions. On both vocabulary

assessments, his average score was 88%, and he scored and average 82% on both reading comprehension assessments

The baseline used for Ralph was 68%. The scores he achieved on the assessments were higher than this baseline during both interventions. During the Guided Reading intervention, Ralph achieved an average score of 77% correct on vocabulary and 74% average score on reading comprehension. During Reciprocal Teaching, Ralph achieved an average score of 94% correct on vocabulary and an average score of 75% correct on reading comprehension.

The baseline used for Paula was 50%. The scores she achieved on the assessments were higher than this baseline during both interventions. During the Guided Reading intervention, Paula achieved an average score of 73% on vocabulary and an average score of 64% on reading comprehension. During Reciprocal Teaching, Paula achieved an average score of 85% on vocabulary and an average score of 68% on reading comprehension.

The baseline use for John was 68%. The scores he achieved on the assessments were higher than this baseline when both interventions were used. During the Guided Reading intervention, John achieved an average score of 85% on vocabulary and an average score of 70% on reading comprehension. During Reciprocal Teaching, John achieved an average score of 86% on vocabulary and an average score of 79% on reading comprehension.

Discussion

This paper investigated how reciprocal teaching improved vocabulary acquisition and reading comprehension amongst four at-risk students. A single subject research

method was used. After determining a baseline, two interventions were applied: reciprocal teaching and guided reading. Key findings indicated that students gained the most benefits when the reciprocal teaching method was used.

Results supported the findings of Rosenshine, Meister, and Chapman (1996). They found that students became more interactive during reciprocal teaching. The researcher discovered that student dialogue helped students construct their own meaning of the text. Bruce and Chan (1991) found results similar to this. In addition, Marston, Deno, Kim, Dimont and Rogers (1995) also supported the notion that when students gave one another feedback, their comprehension and vocabulary skills improved. Palinscar, Brown and Martin (1987) also supported these findings and discovered that student engagement truly enhanced comprehension. This also supported the findings of Lederer (2000) and how students experienced positive interactions with one another.

Results also supported that reciprocal teaching was effective when used with learning disabled students. The researcher used laminated strategy cards as a reminder of what each strategy was for the students. It proved to be extremely helpful. Klingner and Vaughn (1996) experimented with something similar using support sheets for learning disabled students in their study. In both cases, flexibility was an important factor since not all students learned using the similar methods. The researcher also used reader response journals to organize information that students found to be relevant. Each entry was highly structured for each role. Coley, DePinto, Craig and Gardner (1993) found that graphic organizers and response journals were not only beneficial for students to organize their thoughts and demonstrate understanding, but also writing skills were reinforced and improved as well.

Results also supported how teacher modeling during reciprocal teaching enhanced comprehension skills. This was very effective and assisted the mastery of the roles involved. Palinscar, Brown and Martin (1987) found that when teachers thoroughly prepared students to activate each role, they were able to perform tasks and apply what they learned.

Differences were found amongst the results and what current research has found. The results indicated that there was not a significant discrepancy between the two interventions used: reciprocal teaching and guided reading. The posttests for vocabulary and comprehension showed that reciprocal teaching did not surpass guided reading by far. In contrast, Lysynchuck, Pressley and Vye (1990) investigated that students exemplified competent reading skills. Westera and Moore (1995) assessed students as well and found that students' fluency improved. Westera and Moore (1995) also discovered that students internalized strategies taught during reciprocal teaching. The researcher did not find any improvement in fluency or observe students internalizing strategies.

Results did not support that reciprocal teaching improved listening skills. Aarnoutse and Brand-Gruwel (1997) used a think-aloud method to model strategies and found that students' listening skills improved. The researcher did the same think-aloud method and found that listening skills were not affected. The results did not support that reciprocal teaching assisted students' abilities to recall information. The researcher continuously modeled for students how to turn back to the text and create questions, clarify words, use context clues and write summaries. However, Kelly, Moore and Tuck

(1994) discovered that the more reciprocal teaching was done, the more students were able to recall information from the text.

There were several expectations met throughout the course of this study. Reciprocal teaching improved vocabulary acquisition and reading comprehension. It was evident that students engaged in appropriate, meaningful dialogue with one another. They showed that they were able to activate prior knowledge skills during discussions. Due to this, students carried out their roles more effectively. It was also expected that students created literal questions rather than abstract questions throughout the study.

However, there were other factors that occurred throughout the study that were not expected. First, it was not expected that reciprocal teaching results would surpass guided reading results by so little. It was expected that students were going to internalize which strategies more quickly. Instead, it became a tedious task when the roles were reviewed on a daily basis.

In addition, the reactions from the participants during reciprocal teaching were quite rewarding. Reciprocal teaching was expected to increase students' skills. However, it was not expected that students would respond so well to this method in a six week period. Paula was a non-reader and displayed a poor attitude toward reading. Over the course of time, her attitude changed and she became quite involved and focused on whatever role she had. She truly evolved and demonstrated a talent for creating meaningful questions and making predictions. She looked forward to reading and could not wait to receive a role and be a contributor rather than a watcher. Ralph needed a lot of prompting when it came to reading and pulling information from him about the text. His greatest improvement was made with vocabulary. He enjoyed the role of the clarifier

and wrote down many unfamiliar words that were used to discuss with the other students.

He never realized how much he had to contribute to the group when he used his

background knowledge and personal experiences during discussions. It was clear that

daily assessments were extremely helpful for John. When tasks were broken down into

simpler ones, John showed confidence that he could be successful. Over the course of

time, John referred to the text more and more after continuous modeling and practice.

This technique also extended in content area classes, and John referred to the text more

often in Science and Social Studies. The researcher found this transfer of skills a great

improvement for John. During reciprocal teaching, Larry was no longer a daydreamer.

There was no time since the strategies kept him involved and on task. He demonstrated

enthusiasm when he engaged in the conversations with this peers. In addition, he became

more assertive and not afraid to share his thoughts or answer questions. Story maps

seemed to help Larry with sequencing events and following the order of the story.

These findings extended what was already known about reciprocal teaching. It

was evident that reciprocal teaching was related to improve comprehension skills and

socialization amongst students. Furthermore, these findings also demonstrated that when

providing students with meaningful opportunities to stay on a specific task, it was

something that students take with them after much practice and application. This

investigation continued to support that students can use strategies over time to help them

understand what they were reading and to use these same strategies on their own.

For future research, reciprocal teaching should be considered when preparing for

standardized tests. Students can utilize the strategies during preparation and later be

applied when taking a standardized assessment. During the preparation classes, each

student can carry out an assigned role in a small group. These roles can be used when reading narrative, everyday and informational passages. These strategies could be reinforced, and students would perhaps recognize the purpose and importance of each role involved in reciprocal teaching. Most standardized test questions include vocabulary questions, answering different types of questions and finding out what the story was about or its main idea. Three of the four strategies (questioning, clarifying and summarizing) could serve as a helpful tool for students to use independently in this situation, preparing them to become independent readers. The results could be interpreted using two groups: one group of students who used reciprocal teaching during standardized test preparation and one group who did not use it.

There were several limitations throughout this study. One was the time frame. If the study continued for several more weeks or months, the results might have varied. It would have given students a better opportunity and more time to internalize strategies. When working with at-risk students, it is important to remember that everyone processes information differently and at a different pace. Another limitation was the time of year this study was conducted. It is possible that if this investigation occurred in the beginning of the school year, students would have exemplified more confidence during the reciprocal teaching method.

Overall, reciprocal teaching was found to be an effective method to use with at-risk students. Participants succeeded in reaching their literacy goals as well as in their own personal growth as students and people. This investigation suggests that reciprocal teaching helps in preparing students to become independent readers as they apply these strategies on their own, in other content areas and for future reference.
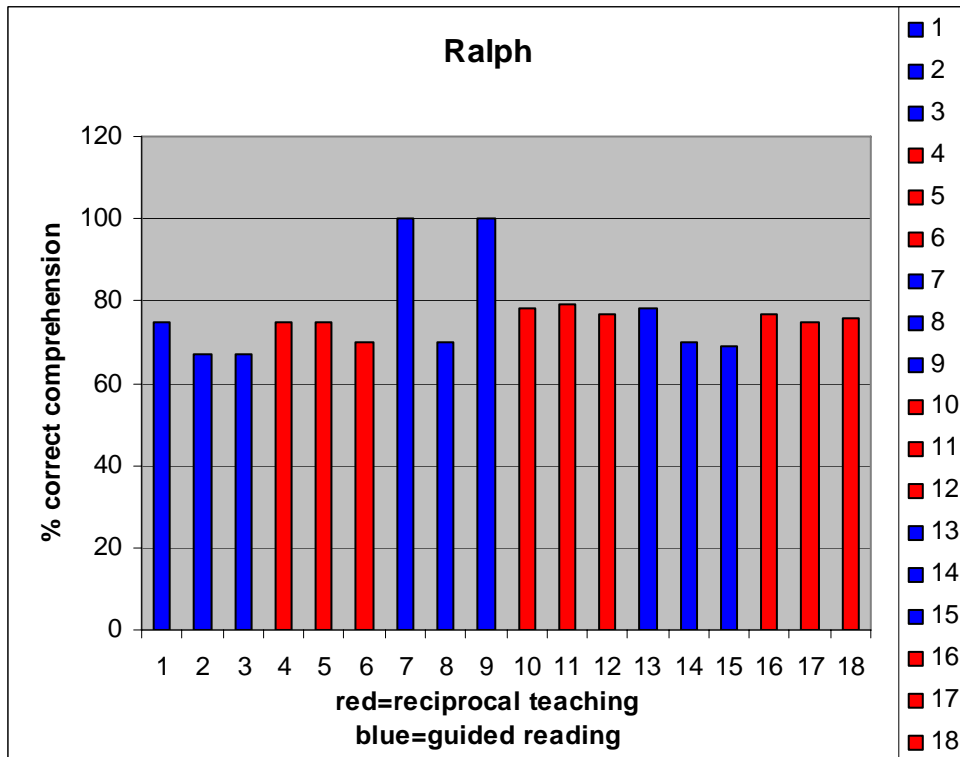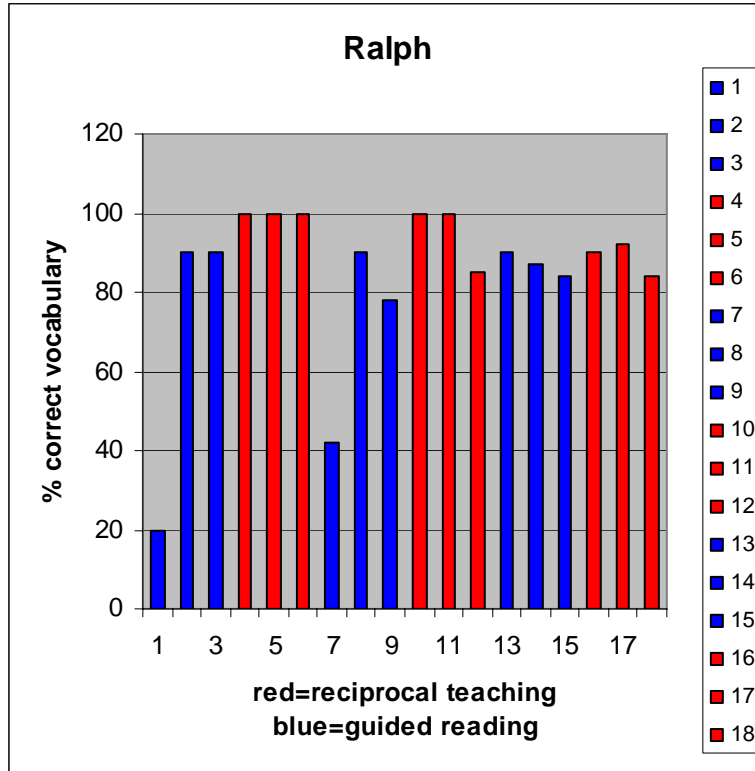
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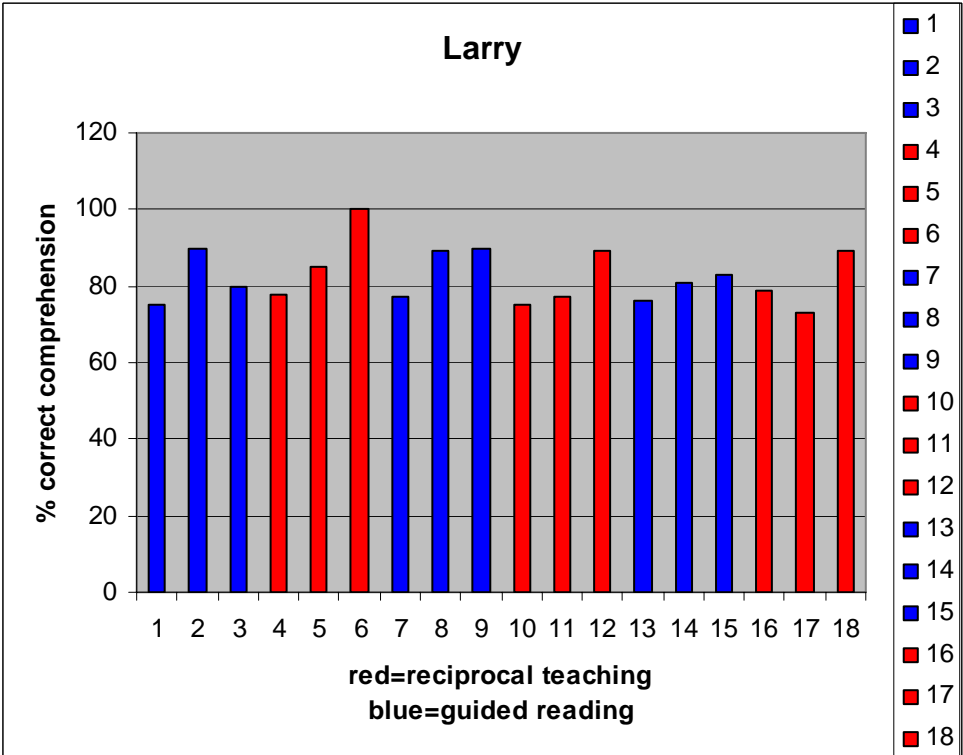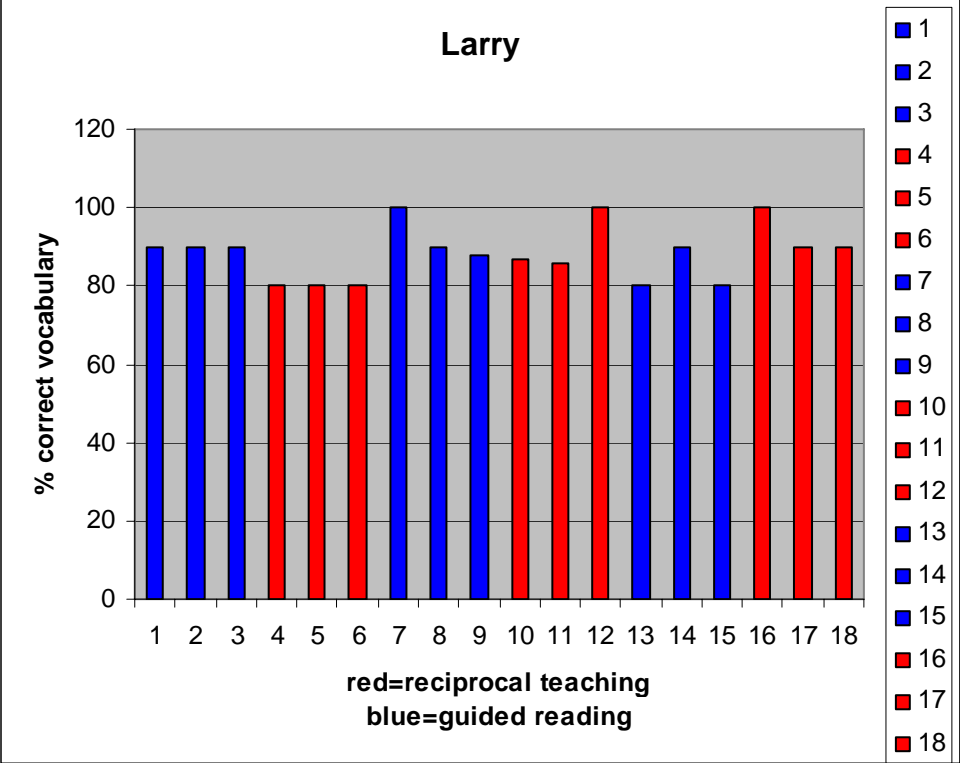Carter, C. (1997). Why reciprocal teaching? *Educational Leadership*, 54 (6), 64.

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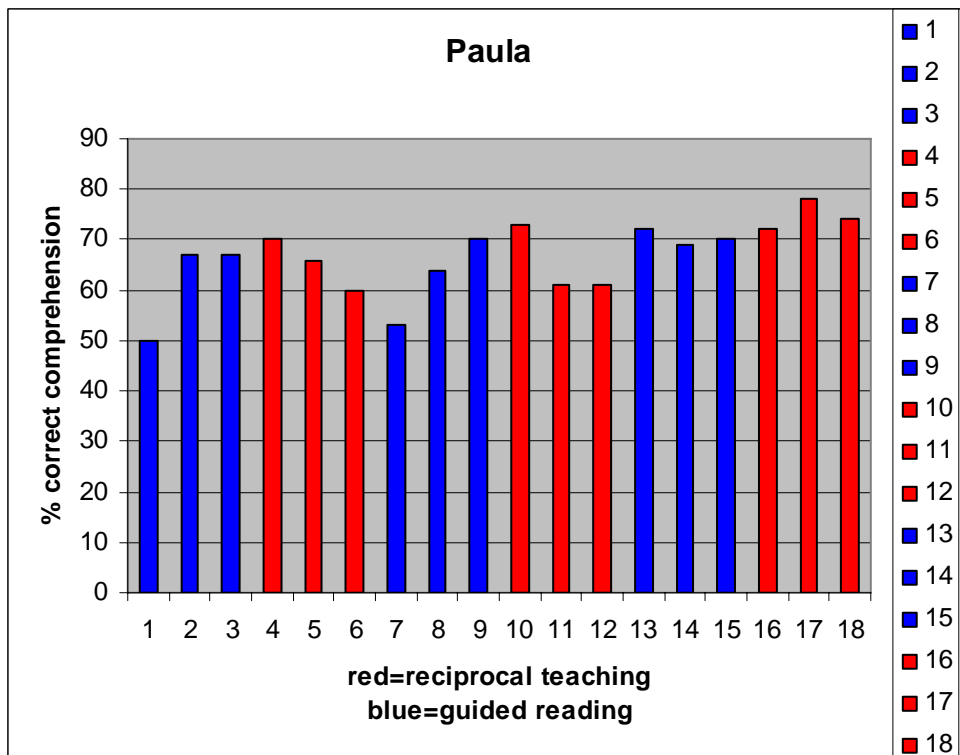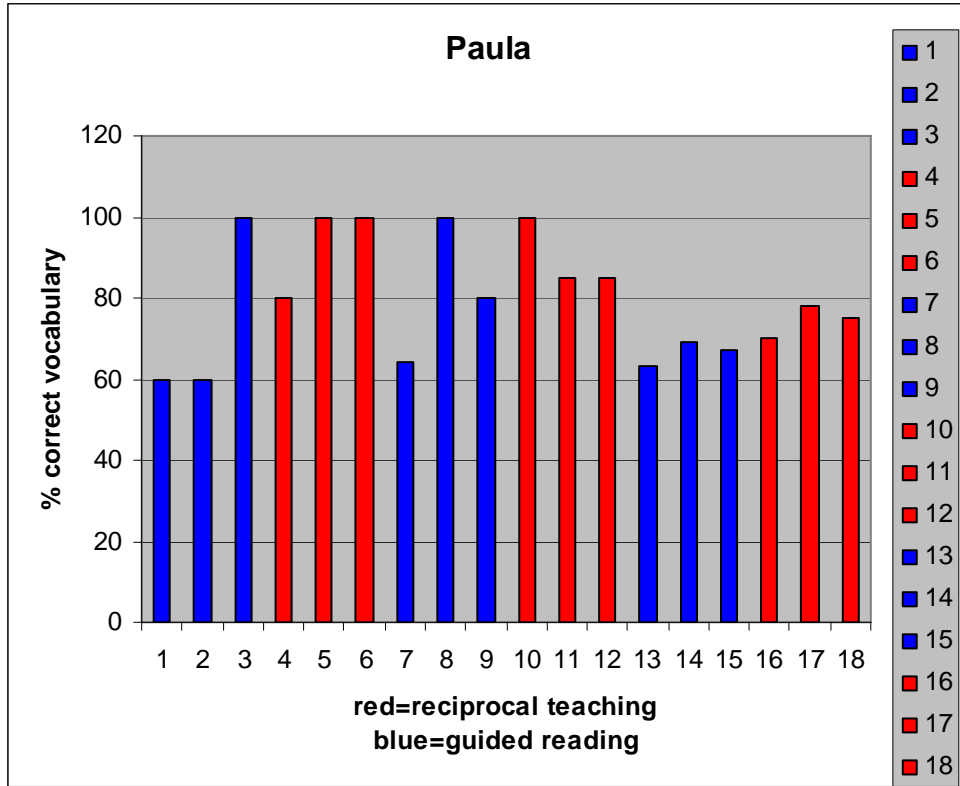
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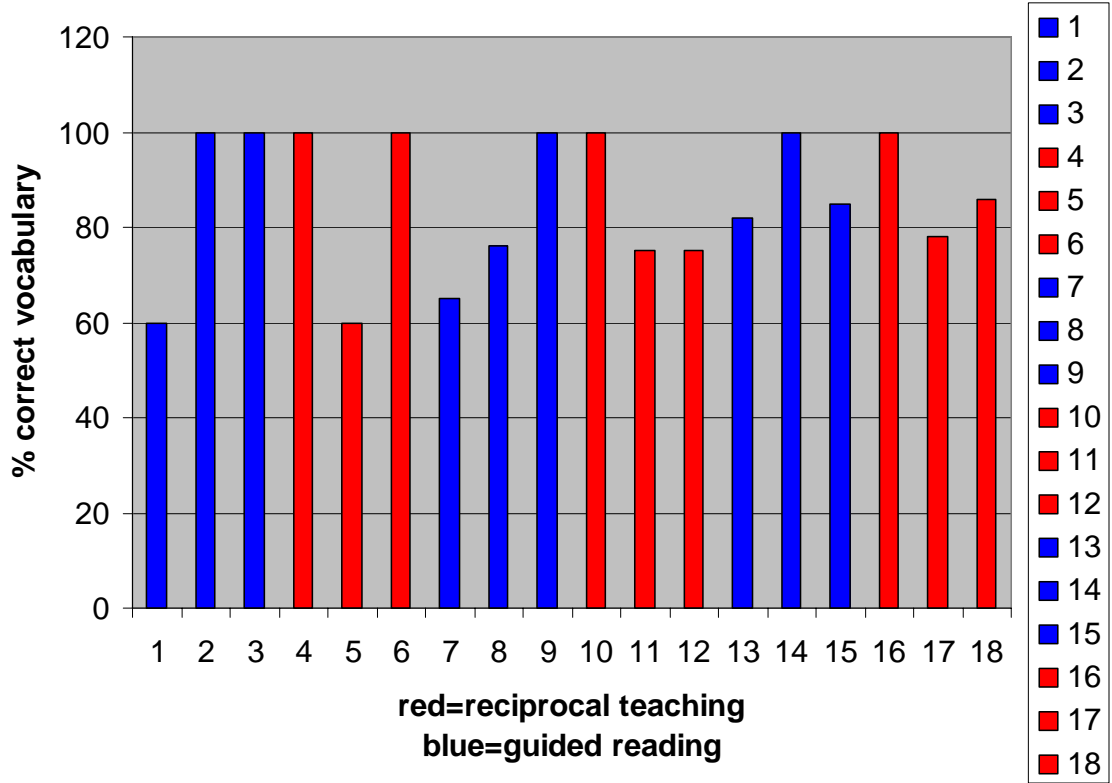   mathematical word problems. *Reading and Writing Quarterly,* 20 (2), 225 – 229.

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Ralph

% correct vocabulary

red=reciprocal teaching
blue=guided reading

Ralph

% correct comprehension

red=reciprocal teaching
blue=guided reading

Larry

% correct vocabulary

red=reciprocal teaching
blue=guided reading

Larry

% correct comprehension

red=reciprocal teaching
blue=guided reading

Paula

% correct vocabulary

red=reciprocal teaching
blue=guided reading

Paula

% correct comprehension

red=reciprocal teaching
blue=guided reading

John

% correct vocabulary

red=reciprocal teaching
blue=guided reading