

Vocabulary Acquisition Techniques for Grade One: An Experimental Investigation of  
Shared Reading vs. Reciprocal Teaching

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A Thesis in the Department of Education

Presented in Partial Fulfillment of the Requirements for the Degree of Master of Arts  
(Child Study) at Concordia University  
Montreal, Quebec, Canada

November 2007

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*Your file* *Votre référence*

*ISBN: 978-0-494-34708-9*

*Our file* *Notre référence*

*ISBN: 978-0-494-34708-9*

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## ABSTRACT

Vocabulary Acquisition Techniques for Grade One: An Experimental  
Investigation of Shared Reading vs. Reciprocal Teaching

Eliana Mandel

The objective of the present study was to compare the effects of two different types of reading comprehension instruction on the vocabulary growth of first-grade children. The two instructional approaches — **Shared Reading** (SR) (Coyne et al., 2004; Parkes, 2000) and **Reciprocal Teaching** (RT) (Palincsar & Brown, 1984) — are similar in several ways, but differ on features I propose are critical to the development of vocabulary in young children. More specifically, Reciprocal Teaching incorporates a larger degree of interaction between teacher and students compared to Shared Reading and also requires students to more actively apply novel words in classroom discussions. The differential effects of SR and RT are an important focus of research, not least because the results of the study promise to provide teachers with additional empirical evidence supporting the use of effective techniques for vocabulary acquisition.

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## STATEMENT OF THE PROBLEM

Research has shown a correlation between receptive vocabulary in grade one and reading comprehension abilities in eleventh grade, reinforcing the importance of vocabulary acquisition in the primary grades (Cunningham & Stanovich, 1997).

Vocabulary knowledge is an important part of the grade school curriculum, even though it is not directly taught until the third or fourth grade (Biemiller, 2001, 2005a). Enhanced vocabulary skills have been linked to increases in reading comprehension and overall academic success (Baumann, Edwards, Boland, Olejnik & Kame'enui, 2003).

Vocabulary acquisition is a lifelong process beginning early in life, but the most transformational vocabulary learning occurs during the school years (Bee, 1989; Hamilton, 1999). Most children express their first spoken word by the age of one and their vocabulary increases exponentially from that point (Bee, 1989; Hamilton, 1999). By the age of six, most children have an average oral vocabulary ranging from 8,000 to 10,000 words, and by the age of eight, they are able to understand the root meaning of 6,000 words (Anglin, Miller, & Wakefield, 1993; Biemiller, 2005b). On average, children acquire 3,000 words per year, and many researchers believe that less than one percent of that vocabulary acquisition is attributed to direct classroom instruction (Nagy & Anderson, 1984; Nagy & Herman, 1987). It has, however, been estimated that one third of the words that children acquire each year can be attributed to reading (Nagy, Anderson & Herman, 1987). By the end of high school, most children know approximately 40,000 words (Anderson & Nagy, 1998). Research has definitively shown that reading facilitates vocabulary acquisition and that reading done using an interactive approach further facilitates vocabulary acquisition (Barbham & Lynch-Brown, 2002; Jenkins, Stein, &

Wysocki, 1984; Nagy et al., 1987; Robbins & Ehri, 1994; Saragi, Nation, & Meister, 1978; Schewanenflugel, Stahl, & McFalls, 1997; Sénéchal, Thomas & Monker, 1995; Whitehurst, Falco, Lonigan, Fishel, DeBaryshe, Valdez-Menchaca, & Caulfield, 1988).

Both Shared Reading and Reciprocal Teaching are interactive approaches to facilitate reading comprehension. Currently there are no studies that compare the effects of Shared Reading and Reciprocal Teaching on vocabulary acquisition. Research has shown that interactive approaches such as pointing, labeling, questioning, and engaging in discussions about the text can facilitate vocabulary acquisition (Sénéchal, 1997; Sénéchal et al. 1995; Walsh & Blewitt, 2006; Whitehurst et al., 1988). The main differences in the approach used when engaging in Shared Reading and Reciprocal Teaching are the level of structure and student involvement. During Shared Reading, the interactive activities such as questioning and discussing are teacher led, while during Reciprocal Teaching, the activities are student led. Reciprocal teaching also focuses on four specific activities: summarizing, clarifying, questioning, and predicting.

In recent years, many educators have turned away from direct instruction approaches to the teaching of vocabulary, such as requiring students to memorize decontextualized definitions of words, and begun to use more interactive and student centered approaches, such as discussions and group work (Avery, 1993). The decrease in frontal teaching that has been gaining in popularity coincides with the approach to vocabulary instruction supported by Nagy and Herman (1987). Nagy and Herman (1987) believed that the number of words that children must learn is so great that it cannot be taught through explicit vocabulary instruction, but rather is a result of incidental learning that occurs through activities such as reading. Their view on vocabulary instruction is not

universally accepted, however Biemiller (2001) argues that vocabulary instruction is being “inadequately addressed in current educational curricula, especially in the elementary and preschool years and that more teacher-centered and planned curricula” are needed (Biemiller, 2001, p.1). The debate on whether or not vocabulary should be directly taught is highly reminiscent of the Reading Wars that debated whether or not reading should be directly taught (Stanovich, 2000).

Stahl and Fairbanks (1986) conducted a meta-analysis of the best approaches to vocabulary instruction. They examined vocabulary instruction along a continuum ranging from only definitional instruction to only context-based vocabulary instruction. The continuum that was outlined consisted of a five-level scale. Stahl and Fairbanks defined definitional information as “knowledge of the relations between a word and other known words, as in a dictionary definition or in a network model of semantic memory” (Stahl & Fairbanks, 1986, p. 74). Contextual knowledge was defined as “knowledge of a core concept and how that knowledge is realized in different contexts” (Stahl & Fairbanks, 1986, p. 74). Results of the meta-analysis indicated that neither definition only nor context only vocabulary instruction were most effective independently. The best results were achieved through a proper balance between both definitional and context based vocabulary instruction. These results coincided with the findings of Nagy and Herman (1987), who found that students learn 1000 to 5000 new words from context each year and only learn approximately 300 words from vocabulary instruction. Stahl and Fairbanks’ (1986) study found that even though more words may be learned from context, it does not detract from the importance of vocabulary instruction, especially for students who are not as adept at learning word meaning from context. Therefore, Stahl

and Fairbanks concluded that the most effective approach to vocabulary instruction is one that provides a balance between definitional and context based learning (Stahl & Fairbanks, 1986).

Given Stahl and Fairbanks' (1986) review, I focused my study on an approach that resides in the middle of the continuum that they outlined in order to provide a balance between definitional and contextual vocabulary learning. In my study, I explored the effects of two interactive approaches to vocabulary acquisition through reading, on 45 first-grade students. These approaches provided the opportunity for vocabulary to be learned both incidentally through reading and print exposure in the classroom, as well as directly, through the explanation of new words while reading. The two approaches to vocabulary instruction that were explored in my study were Shared Reading (SR) and an adapted version of Reciprocal Teaching (Adapted Reciprocal Teaching, ART). From here on, ART will be used to refer to the Adapted version of Reciprocal Teaching used in this study and RT will be used to refer Palincsar and Brown's (1984) original version of Reciprocal Teaching.

Both Shared Reading and Reciprocal Teaching (RT) are approaches to reading aimed at improving comprehension. The positive effects of SR techniques, such as labeling, pointing, questioning, discussing, and explicitly explaining words, on vocabulary acquisition have been shown in numerous studies (Biemiller & Boote, 2006; Coyne, Simmons, Kame'enui & Stoolmiller, 2004; Sénéchal et al., 1995; Sénéchal, 1997; Walsh & Blewitt, 2006; Wasik & Bond, 2001; Whitehurst et al., 1988). Even though the effects of RT on reading comprehension have been shown in many studies (e.g., Palincsar & Brown, 1984; Palincsar, 1986), research on the effects of RT on vocabulary acquisition

is lacking. The main differences between SR and RT are the amount of teacher involvement as well as the structured nature of the approach. RT is more structured in nature since its goal is to teach students to be more self-directed while engaging in class discussion. ART provides slightly more structure and teacher support due to the different needs of a younger student population, but in the end the students still lead the class discussion. In SR, however, the teacher always leads the discussions and the students are simply participants. I structured my study around the hypothesis that ART would facilitate more vocabulary acquisition than SR due to the increased structure and opportunity for student involvement in the class discussions.

## LITERATURE REVIEW

In the first section of my literature review, I will explore how children learn new words, and I explain and examine some of the processes involved in vocabulary acquisition. To begin, I will explain the differences between receptive and expressive vocabulary. Second, I will explore the meaning and effects of incidental vocabulary learning. Next, I will examine the importance of understanding word meaning in the process of vocabulary acquisition. Then, I will draw a parallel between reading comprehension and the acquisition of word meaning.

The next section of my literature review will explore two different forms of reading referred to as non-interactive and interactive reading. Both of the approaches being used in my study, Shared Reading (SR) and Adapted Reciprocal Teaching (ART), are considered to be interactive approaches. The effects of non-interactive and interactive reading on vocabulary acquisition will be explored in the next two sections of my literature review. Finally, I will explore the two interactive approaches being used in this study, SR and ART, and then I will compare and contrast them.

### How Children Learn New Words

#### *Receptive and Expressive Vocabulary*

The acquisition of vocabulary is a lengthy and complex process. Vocabulary acquisition can be divided into two categories, receptive and expressive vocabulary. According to Just and Carpenter (1987), receptive vocabulary encompasses words that children understand but cannot necessarily use in conversation. Expressive vocabulary

encapsulates words that children can actually use in conversation (Just & Carpenter, 1987). Receptive vocabulary is often associated with language comprehension and is seen as a prerequisite to the acquisition of expressive vocabulary (Vincent-Smith, Bricker, & Bricker, 1974). Nagy and Herman (1987) claimed that only 5% to 20% of previously unknown words can be incorporated into someone's receptive vocabulary after a single exposure (Nagy & Herman, 1987). Research has shown that a word must be encountered between six (Sagai et al., 1978) and 20 (Herman, Anderson, Pearson & Nagy, 1987) times in order to be committed to memory. Research has shown that for a word to become part of someone's expressive vocabulary, the individual must have the opportunity to use and produce the new word (Sénéchal, 1997; Whitehurst et al., 1988).

#### *Incidental Learning of Vocabulary*

Nagy and Herman (1987) claimed that the number of words that children acquire in a year is simply too great to be acquired through definitional vocabulary instruction. Their findings coincided with the Stahl and Fairbanks (1986) review, which indicated that children maximize their acquisition of vocabulary when they have a proper balance between definitional vocabulary instruction and context-based learning. Incidental learning of vocabulary often occurs through context-based learning, and includes activities such as reading, being read to, and simply listening (Nagy et al., 1987). To engage in incidental learning of vocabulary, a person has to derive the meaning of a new word from contextual cues, such as pictorial representations or other words in the sentence where the novel word was encountered (Nagy et al., 1987). Since only 5% to 20% of previously unknown words are committed to memory, it would seem logical to

assume that numerous exposures are necessary (Herman & Dole, 1988; Nagy et al., 1987; Nagy & Herman, 1987).

### *Word Meaning and Reading Comprehension*

Research has shown that for children to learn new words, they must go through a series of steps in order to encode and remember the word (Sénéchal et al., 1995). The child must first encode a phonological representation of the new word, and then through the use of contextual cues or explanations, construct a meaning for the new word (Sénéchal et al., 1995). One technique that is often helpful when attempting to attach meaning to a word is the association of the new word with synonyms that have already been committed to memory (Sénéchal et al., 1995). By associating a new word with other familiar words, a person is facilitating the commitment of that word to memory by integrating the new word with their existing base of knowledge (Sénéchal et al., 1995).

The process involved in attaching meaning to new words requires a person to actively think about a new word. When reading with the goal of increasing comprehension, people are required to actively think about what they are reading to truly understand the text.

Both Shared Reading and Reciprocal Teaching are approaches to reading instruction aimed at increasing children's comprehension (Palincsar & Brown, 1984; Sénéchal et al., 1995; Whitehurst et al., 1988). Since both approaches (SR and RT) are interactive, students are not only encouraged to ask questions when they encounter unfamiliar words that the teacher has failed to explain, but are also prompted to do so through activities such as summarizing, predicting, labeling, pointing, questioning,



engaging in discussions, and providing explicit explanations for words (Biemiller & Boote, 2006; Coyne et al., 2004; Palincsar & Brown, 1984; Sénéchal, 1997; Sénéchal et al., 1995; Whitehurst et al., 1988; Wasik & Bond, 2001; Walsh & Blewitt, 2006).

Therefore, deriving the meaning of new words encountered while engaging in reading comprehension activities appears critical for reading comprehension to occur.

Furthermore, activities associated with increasing reading comprehension have been shown to increase vocabulary acquisition. Therefore, studying the effects of reading instruction on vocabulary acquisition is important and necessary (Sénéchal, 1997; Sénéchal et al., 1995; Whitehurst et al., 1988).

#### Different Forms of Reading: Non-Interactive Reading and Interactive Reading

##### *Non-Interactive Reading*

Non-interactive reading with young children involves an adult reading to a child without engaging the child in any additional activities such as discussing the text or seeking the explanations of new words. An individual engaged in non-interactive reading reads a text without any interaction with another person or outside sources such as a dictionary (Biemiller & Boote, 2006; Coyne, Simmons, Kame'enui & Stoolmiller, 2004; Wasik & Bond, 2001; Walsh & Blewitt, 2006; Whitehurst et al., 1998). Research conducted with people of all ages has shown a positive correlation between non-interactive reading and vocabulary acquisition (Robbins & Ehri, 1994; Sénéchal, 1997; Rott, 1999). Reading independently, as well as being read to, have been shown to facilitate both receptive and expressive vocabulary acquisition.

### *Interactive Reading*

Interactive reading involves the incorporation of other activities into the reading process. These activities include labeling and pointing (Sénéchal et al., 1995), questioning (Sénéchal, 1997; Whitehurst et al., 1988), engaging in discussions while reading, and providing explicit explanations of words (Biemiller & Boote, 2006; Coyne et al., 2004; Walsh & Blewitt, 2006; Wasik & Bond, 2001). Numerous studies have indicated that interactive reading facilitates the acquisition of more vocabulary than non-interactive reading (Ewers & Brownson, 1999; Brabham & Lynch-Brown (2002).

Reese and Cox (1999) examined the effects of three different reading styles on 50 four-year-old students' acquisition of receptive vocabulary. The reading styles ranged from non-interactive, which did not permit for discussions or questions while reading, to interactive reading styles. Findings indicated that all children acquired new vocabulary but the children who participated in the more interactive reading treatments that allowed for questions and discussions while reading acquired more new vocabulary than the students in the non-interactive group. In the non-interactive treatment they found that students with higher entering vocabularies experienced more vocabulary growth than the children with smaller entering vocabularies. This finding can be explained by Vygotsky's theory of cognitive development, which claims children's current base of knowledge affects their future learning abilities (Vygotsky, 1980).

Ewers and Brownson (1999) conducted a study with 66 kindergarten students that examined the effects of interactive and non-interactive storybook reading on children who differed in regards to their entering vocabulary knowledge and phonological working memory. The Picture Peabody Vocabulary Test – Revised (PPVT-R; Dunn &

Dunn, 1981) was used to measure their entering vocabulary and the Sénéchal Vocabulary Test – Adapted (Sénéchal & Cornell, 1993) was used to pretest their knowledge of target words. Findings from the study indicated that students in both the interactive and non-interactive treatment acquired new vocabulary, but students who participated in the interactive condition acquired more vocabulary than their counterparts in the non-interactive treatment. This finding supports the argument that both non-interactive and interactive reading can facilitate vocabulary acquisition, but interactive reading is more effective in facilitating the acquisition of more new words. Further, Ewers and Brownson (1999) found that students with larger entering vocabularies, as indicated by the PPVT-R, experienced more vocabulary growth than their peers with lower entering vocabularies.

The two approaches to reading instruction that were examined in this study are both interactive reading techniques: Shared Reading (SR) and Reciprocal Teaching (RT). SR, as the name suggests, is an approach used when reading to children that is meant to allow them to share in the reading process through activities such as labeling, pointing, questioning, discussing, and explicitly explaining word meanings. For educators, Shared Reading can be a way to emulate the comfortable bedtime reading experience that many children experience with their parents (Parkes, 2000). Although studies have found that reading to children in a non-interactive way can increase vocabulary through incidental learning, studies have also shown superior results when an interactive approach is used (Nagy et al., 1987; Robbins & Ehri, 1994; Sénéchal, 1997; Whitehurst et al., 1988).

Shared reading has been found to facilitate both receptive and expressive vocabulary acquisition (Wasik & Bond, 2001; Whitehurst et al., 1988). One issue that has not yet been resolved is which of the Shared Reading techniques are most effective for

the learning of vocabulary. Sénéchal (1997) maintained for example, that even though the use of questioning may evoke more discussions, its effects on vocabulary acquisition are not superior to labeling and pointing (Sénéchal, 1997). Numerous studies have examined the effects of various Shared Reading techniques, but a consensus on which approach is most effective has not been reached.

In RT, students are taught to read a text independently and then go through the process of summarizing, clarifying, questioning, and predicting in order to produce a detailed discussion about the text read (Palincsar & Brown, 1984). The goal of the discussion is to increase students' reading comprehension. During RT, the teacher reads the first paragraph of the text out loud and models the comprehension monitoring strategies of summarizing, clarifying, questioning, and predicting. The teacher then hands over the task to one of the students in the group and invites the student to engage in the same processes with respect to the second paragraph in the text. As the student, who is still a novice reader, struggles with the task, the teacher provides the appropriate coaching and scaffolding to assist the student to engage in the four comprehension monitoring strategies. Eventually, as the students become more expert at engaging in the requisite comprehension strategies, the teacher fades away involvement and transfers an increased amount of cognitive responsibility to the students.

#### Non-Interactive Reading and Vocabulary Acquisition

Rott (1999) examined the impact of reading on the foreign language acquisition of a group of 95 university students. The students were exposed to each new word two to six times while reading. Rott found that increased exposure to new words led to increased

retention. She also found that students' receptive vocabularies were increased simply by reading (Rott, 1999). Sénéchal (1997) conducted a study with three and four year-old children that also showed that increased exposure to new words while being read to, increased their receptive and expressive vocabulary (Sénéchal, 1997).

Robbins and Ehri (1994) explored the effects of non-interactive reading on 51 Kindergarten students' vocabulary acquisition. Their study found increased vocabulary acquisition of the words that the children had heard in the story in comparison to the words that they had not heard. Greater vocabulary gains were found in the students who had larger entering vocabularies, which is consistent with the findings of numerous other studies (Ewers & Brownson, 1999; Reese & Cox, 1999). Like others, this study supports the view that that simply reading to children can positively impact their vocabulary acquisition (Elley, 1989; Ewers & Brownson, 1999; Nagy et al., 1987; Whitehurst et al., 1998).

In sum, these studies and others (Cunningham & Stanovich, 1997, 2001; Nathan & Stanovich, 1991; Stanovich, 1993) demonstrate that non-interactive reading can facilitate vocabulary growth through the effects of incidental learning but as the following section will demonstrate, interactive reading can facilitate even greater vocabulary acquisition.

### Interactive Reading and Vocabulary Acquisition

Sénéchal, Thomas, and Monker (1995) conducted a study with four-year-old children to assess the impact of interactive reading on vocabulary acquisition. In the first experiment, receptive "vocabulary was measured by testing children's capacity to recognize uninstructed examples of novel words from arrays of pictures" (Sénéchal et al.,

1995, p. 226). Sénéchal et al. hypothesized that children with larger entering vocabularies had memory processes that were more efficient and they would thereby experience more vocabulary acquisition. The findings from the first experiment indicated that a child's overall entering vocabulary did not impact vocabulary acquisition and that all children benefit from the opportunity to practice the retrieval of new words. During the second experiment, expressive vocabulary "was measured by children's capacity to produce novel words using book illustrations as retrieval cues" (Sénéchal et al., 1995, p. 226). Two different word retrieval techniques were used in the second experiment: a pointing technique and a labeling technique. Both labeling and pointing were considered to be a form of word retrieval because children were required to either point to an image of a spoken word or label a picture presented to them by an adult. The results of the immediate expressive vocabulary posttest indicated that children in both conditions experience expressive vocabulary gains, but children in the labeling condition were able to produce more new words than children in the pointing group. These findings suggest that the increased structure and cognitive demands of the labeling condition led to increased vocabulary acquisition (Sénéchal et al., 1995). Findings from this study seem to contradict the findings of the Whitehurst et al. (1998) study, which indicated that open-ended questions requiring children to talk and actually use new words in conversation led to increased vocabulary acquisition. The lack of consensus made apparent by the contradictions in the findings of the Sénéchal et al. study (1995) and the Whitehurst et al. (1988) study support the need for further research into the best approach to reading-based vocabulary instruction.

Whitehurst et al. (1998) conducted a study to examine the impact of open-ended

questions on children's vocabulary acquisition. A group of 30 children, ranging in age from 21 to 35 months, were divided into an experimental and control group. In the experimental group, parents were given instructions on how to use certain interactive reading techniques, such as open-ended questions and positive reinforcement, during discussions. The experimental group was instructed to use these interactive reading techniques while reading to their children. The control group was instructed to read to their children in the non-interactive fashion to which they were accustomed. Children in the experimental group scored significantly higher than the control group on a standardized expressive vocabulary posttest and delayed posttest.

Sénéchal (1997) further examined the impact of interactive reading techniques such as labeling and the use of multiple readings of a book on the receptive and expressive vocabulary acquisition of preschool students (Sénéchal, 1997). The study consisted of three experimental conditions: single reading, multiple readings, and multiple readings with labeling questioning. Each group in the study consisted of fifteen preschool boys and fifteen preschool girls.

Sénéchal (1997) proposed that before children could read independently, repeated readings of a book could enhance children's receptive vocabulary by providing them with numerous "opportunities to encode, associate and store novel information" (Sénéchal, 1997, p.126). First, the students in all three groups were pretested for receptive knowledge of the target words prior to the study. Next, they were read the story either once or twice, depending on whether they were in the single, multiple reading or multiple reading with questioning condition. While reading, the experimenter pointed to pictures that corresponded to all of the target words being assessed as well as to images of words

that were not being assessed. The children in the single reading group were pretested, read to, and posttested in one 25 minute setting. Children in the multiple reading groups participated in two sessions. During the first session they were pretested and read the story twice. In the second session they were read the story once more and then were posttested. The students in the multiple readings group with questioning were asked to label items with new words that had been introduced during the story. Then the children were given a receptive and expressive posttest. Receptive vocabulary was measured using a test similar in format to the Picture Peabody Vocabulary Test-Revised (PPVT-R; Dunn & Dunn, 1981). Expressive vocabulary was measured by having students label items using pictures from the book as retrieval cues.

Sénéchal's (1997) findings indicated that the repeated readings, both with and without questioning, were beneficial for receptive and expressive vocabulary acquisition. Responding to questions while reading, however, was found to be more beneficial for children's expressive vocabulary than their receptive vocabulary. She attributed the impact of responding to questions on expressive vocabulary to the fact that it provided children with opportunity to "practice retrieving the phonological representations of a word – a step considered crucial in expressive vocabulary acquisition" (Sénéchal, 1997, p. 126). Sénéchal's study confirmed her previous findings (Sénéchal et al., 1995) in which she concluded that interactive reading techniques were beneficial to vocabulary acquisition.

A study conducted by Wasik and Bond (2001) examined the effects of a few interactive reading techniques on 127, four-year-old children. These techniques included questioning, engaging in discussions, and providing explicit explanations of words while



reading. Both the control and experiment group read the same books the same number of times. The difference between the control and experimental group was the use of interactive reading techniques such as questions, discussions, and explicit word explanations while reading. The children were all pre-tested using the PPVT-III (Dunn & Dunn, 1998). The posttest consisted of a receptive vocabulary test modeled after the PPVT-R and an expressive vocabulary test where students were shown pictures from the book and asked to name the object represented in the image. The posttests of receptive and expressive vocabulary showed increased rates of vocabulary acquisition among the students in the interactive reading group. These findings coincide with the findings in the Whitehurst et al. study (1988), the Sénéchal et al., study (1995), and the Sénéchal study (1997), all of which supported the use of interactive reading techniques to increase vocabulary acquisition while reading to young children (Wasik & Bond, 2001).

Walsh and Blewitt (2006) conducted a study that examined the effects of different questioning styles on the vocabulary acquisition of 35 preschool children. They divided the children into three groups. The control group engaged in non-interactive reading and the two treatment groups were both asked questions by the adult reading to them. The difference between the treatment groups was the type of questions they were asked. One treatment group was asked questions about the books that elicited the use of new vocabulary, and the other treatment group was asked questions about the book that did not elicit the use of new vocabulary.

The students were all pretested using the PPVT-III to assess their entering vocabulary and the New Word Comprehension Test (NWCT; Walsh & Blewitt, 2006) to assess their receptive vocabulary of the target words being assessed in the study. The

procedures for the PPVT-III and the NWCT were the same. Children were read a word and were asked to select the image that best represented the word they had just heard.

All of the children engaged in three intervention sessions in which they were read two of the three books used in the study. After the three intervention sessions, all the students heard all the stories one last time and were then posttested using the NWCT to measure their receptive vocabulary and the New Word Production Test (NWPT; Walsh & Blewitt, 2006) to assess their expressive vocabulary. The NWPT was administered first so the representation of the target words in the NWCT would not influence the production of new words in the NWPT. Completion of the NWPT required students to produce the new words that they learned by labeling images that corresponded to the words. Findings of this study confirmed that the use of interactive reading led to more vocabulary acquisition than non-interactive reading, regardless of the type of question used.

The Children's results on the PPVT-III indicated that entering vocabulary did not influence students' acquisition of new vocabulary, which confirmed the findings of Sénéchal et al. (1995). These findings however, contradict the findings of many other studies such as Ewers and Brownson (1999), Reese and Cox (1999), and Robbins and Ehri (1994) who found that students with greater entering vocabularies acquired more vocabulary during the studies. The lack of consensus of the effects of vocabulary prior to a study supports the continued use of the PPVT to assess students' vocabularies before any comparisons among interventions are made.

Biemiller and Boote (2006) examined the effects of multiple readings of a story and direct word explanations on the vocabulary acquisition on 43 kindergarten students (24

girls), 37 grade one students (13 girls), and 32 grade two students (14 girls). A total of three books were used in each grade, with 48 words selected to be explained. Each grade was divided into two cohorts and pretested on the 24 words assigned to their cohort. For the posttest, all students were tested on all 48 words. Results on the posttest indicated that multiple readings were especially helpful with the words that were not explicitly explained, especially in the kindergarten and first-grade groups. Students did, however, learn more of the words that were explicitly explained. The authors overall findings demonstrated that both repeated readings and explicit explanations of words while reading facilitated vocabulary acquisition (Biemiller & Boote, 2006).

Coyne, Simmons, Kame'enui, and Stoolmiller (2004) conducted a study that examined the effects of explicit definition of new words encountered by kindergarten students while engaging in Shared Reading. Students were pretested and posttested; a 20 word test was developed to assess what, if anything, students knew about ten of the target words explained in the story as well as ten other words that would appear in the story but were not explained. The findings of this study are consistent with those of Wasik and Bond (2001), which support the use of explicit word explanation during interactive reading. Intentionally drawing students' attention to a new word and its meaning has been shown to increase their overall awareness of the word and its meaning (Biemiller & Boote, 2006).

In sum, the studies summarized above support the view that interactive reading techniques such as questioning, discussing, labeling, pointing, and explicit word explanations facilitate vocabulary acquisition. One potential explanation offered for the increases in vocabulary acquisition experienced, is that interactive reading provides

children with more opportunities to actually use the new vocabulary they are encountering (Sénéchal, 1997; Whitehurst et al., 1988). Ewers and Brownson (1999) suggested that interactive reading techniques such as questioning “serve to focus the listener’s attention to novel items and provide a stronger semantic linkage between short-term and long-term storage” (Ewers & Brownson, 1999, p. 17).

## Two Interactive Approaches: Shared Reading and Reciprocal Teaching

### *Shared Reading*

The interactive approaches of discussing, questioning, labeling, pointing, and explicitly explaining words while reading had been called Shared Reading (Biemiller & Boote, 2006; Coyne et al., 2004; Sénéchal, 1997; Sénéchal, Thomas & Monker, 1995; Walsh & Blewitt, 2006; Wasik & Bond, 2001; Whitehurst et al., 1988). Others have called it active reading or interactive reading. For the purposes of this study, I will refer to the approach as Shared Reading (SR). SR involves all of the activities described in the previous section. The goal of SR is to help improve students’ reading comprehension when a story is being read to them. Numerous studies have examined the effects of SR on vocabulary acquisition and found a positive correlation between SR and vocabulary acquisition (Biemiller & Boote, 2006; Coyne et al., 2004; Sénéchal, 1997; Sénéchal et al., 1995; Walsh & Blewitt, 2006; Wasik & Bond, 2001; Whitehurst et al., 1988).

### *Reciprocal Teaching*

According to Hacker and Tenen (2002), “Reciprocal Teaching (RT) is an instructional procedure in which small groups of students learn to improve their reading

comprehension through ‘scaffolded instruction’ of comprehension-fostering and comprehension-monitoring strategies” (Hacker & Tenet, 2002, p. 699). Reciprocal Teaching encompasses the entire process of cognitive apprenticeship as defined by Collins, Brown, & Holum (1991). According to Collins et al., cognitive apprenticeships require teachers to make their thinking visible to help students learn a variety of skills. Cognitive apprenticeships incorporate four main processes: modeling, scaffolding, fading, and coaching. Modeling involves a teacher showing the student or apprentice how to do something. Scaffolding refers to the support provided by the teacher that through fading is slowly removed. “Coaching is the process of overseeing the student’s learning” (Collins et al., 1991, p. 242). Cognitive apprenticeship can be used when teaching such skills as reading, writing, or problem solving as long as educators succeed in making the processes involved in the task visible, relevant, and well articulated. Palincsar and Brown’s (1984) Reciprocal Teaching is an approach to reading instruction that involves many of the techniques outlined by the Collins et al. (1991) cognitive apprenticeship model.

According to Palincsar and Brown (1984), to teach students how to engage in Reciprocal Teaching, educators must first model the behavior that they want students to learn. Teachers must show students how to summarize, question, clarify, and predict. Step one involves the students and the teacher reading a paragraph of a text. Next, the teacher models the four processes of RT aloud. The teacher begins by summarizing the paragraph read, clarifying anything that needs to be clarified, developing questions about the text, and then predicting what will happen next. The teacher then asks one specific student to read the next paragraph aloud and engages in coaching and scaffolding to help

this student proceed through the RT steps. Because the student is still a novice at using RT, the teacher must coach him or her through the RT process to help them to summarize, clarify, question, and predict. The teacher then does the same thing with another student. Once several students have engaged in RT, the teacher begins to fade her support since the students are now becoming more expert readers.

The four activities involved in Reciprocal Teaching allow students to increase their interaction with the text (Palincsar, 1986). Both summarizing and questioning require students to focus on the main ideas in the text and check if they understand them. Having students clarify what they read requires them to “engage in critical evaluation as they read” (Palincsar & Brown, 1984, p. 120). Asking students to make predictions about the book allows them to draw and test inferences made based on what they have read up to that point. “All four activities involve activation of relevant background knowledge” (Palincsar & Brown, 1984, p. 120). RT requires students to consciously think about the words they are reading and, according to Biemiller and Boote (2006), the process of consciously thinking about words helps students to commit the word and its meaning to memory.

The comprehension monitoring strategies at the center of the RT results in group discussions in which students share their summaries, questions, clarifications, and predictions made by students. Initially, that discussion is lead by the teacher. Over time, the teacher can relinquish more control of those conversations to the students and allow the conversations to become student directed as they gain experience with RT. The approach used when the teacher slowly decreases their modeling of the strategies being taught and relinquishes more control to students is called fading (Collins et al., 1991;

Hacker & Tenent, 2002). Fading is the “process that enables a child or novice to solve a problem, carry out a task, or achieve a goal which would be beyond his unassisted efforts” (Wood, Bruner, & Ross, 1976, p. 90). This method of instruction is largely derived from Vygotsky’s idea of the Zone of Proximal Development, which refers to the capacity of a child to learn and solve problems both independently and with assistance (Vygotsky, 1980). By slowly decreasing support, educators teach students how to self-regulate and become more independent in the generation of their thoughts and ideas (Palincsar & Brown, 1984). The goal in Reciprocal Teaching is for the process to truly become reciprocal, and for the classroom dialogue to eventually reflect the ideas of students as opposed to the ideas of the teacher (Palincsar, 1986).

#### *Adapted Reciprocal Teaching*

When Palincsar and Brown (1984) initially studied Reciprocal Teaching, they did so with seventh-grade students. Two years later, Palincsar (1986) conducted a study aimed at extending the Reciprocal Teaching procedure used with junior high-school students to first-grade students. The study examined the relationship “between listening and reading comprehension skills and providing early lessons in text comprehension to students identified as at risk for academic difficulty” (Palincsar, 1986, p. 80). Since children in first-grade are just learning how to read, the students in this study did not read the texts, but rather had the texts read to them by the teacher. Teachers worked with small groups of six students. They began by explaining the four skills involved in Reciprocal Teaching (summarizing, clarifying, questioning, and predicting). Teachers then modeled the activities for the students and elicited their participation by asking probing questions

and providing encouragement and verbal reinforcement. Discussions were used to allow children to try and summarize, question, clarify, and predict with eventual decreased teacher assistance. This study revealed that RT could be adapted for younger students, but a more detailed adaptation was provided by Coley, DePinto, Craig, & Gardner (1993).

Others have attempted to adapt the RT process to meet the needs of younger students with inferior reading abilities. The adaptation with the most relevance to my study, was conducted by a first-grade teacher named Sharon Craig (Coley et al., 1993). Craig adapted Reciprocal Teaching to meet the needs of her first-grade students, who could either not read, or were still in the emergent stage of reading. When Palincsar and Brown (1984) conducted Reciprocal Teaching with seventh-grade students, it was done in the form of a conversation that was initially led by the teacher. The teacher modeled the four RT techniques (summarizing, clarifying, questioning, and predicting) then through the use of fading the conversation became student lead.

Craig made numerous adaptations to the RT process in order to meet the needs of younger students, who not only were less capable readers, but also less experienced at organizing their thoughts and engaging in group-discussions. Overall the process of cognitive apprenticeship in which Craig engaged her students was longer than that used with the older demographic in Palincsar and Brown's study (1984). Prior to the students engaging in any independent work Craig modeled each step very slowly and clearly. She dedicated a whole lesson to teaching the students how to generate relevant questions by teaching them about cause and effect and encouraging them to think about how one person's actions can affect someone else. She explained to her students the benefit of



thinking about cause and effect when generating questions about a text.

The most obvious adaptation made, was that Craig read the texts to the students as opposed to having them read the text independently. Next, when teaching them to summarize, clarify, question, and predict, Craig had the students work in groups of two. The students in each group were assigned one of the four RT tasks (summarizing, clarifying, questioning, and predicting) for which they would then be responsible for during the class discussion. After her initial attempt at implementing her Adapted Reciprocal Teaching (ART) method she found that the students were having difficulty engaging in two-way conversations. Craig found that she had to provide prompts for student to speak. These prompts were not always effective, either no one would respond, or his or her responses would seem disjointed and not relevant to the conversation. She then rethought her approach and requested that while the students were working in groups on their assigned ART task (either summarizing, clarifying, questioning, or predicting), they write down all of their thoughts. Her hope was that by organizing their thoughts on paper prior to engaging in the group discussion the students' discussions were be more organized and run more smoothly. While the students were writing down their thoughts, Craig circulated to ensure that the students remained on task. Craig found that having the students write down their thoughts had a positive effect on the quality of the discussions that were generated (Coley et al.,1993).

### Comparison of Shared Reading and Reciprocal Teaching

#### *Similarities*

Both Shared Reading and Reciprocal Teaching are instructional approaches aimed

at increasing reading comprehension. Research has shown that reading comprehension and vocabulary acquisition are highly linked. Students with greater vocabularies have been found to have superior reading comprehension abilities and increasing students comprehension while reading has been shown to increase vocabulary acquisition (Biemiller & Boote, 2006; Crow, 1986).

### *Differences*

The main differences between Shared Reading (SR) and Reciprocal Teaching (RT) are the degree of teacher involvement and the degree of structure that are present in the conversations that arise while reading. In SR, the conversations are largely teacher led. During SR, students will engage in numerous interactive reading activities, such as questioning and discussing, all moderated by the teacher. For instance, the teacher will ask a question to start a conversation and then continue to do so in order to maintain the conversation. Meanwhile, with RT, the conversations are structured around four main skills (summarizing, clarifying, questioning, and predicting) and a cognitive apprenticeship model is implemented when students discuss information in a text. The teacher begins by modeling the RT skills of summarizing, clarifying, questioning and predicting. Then through the use of coaching and scaffolding the teacher teaches the student to use the four RT skills independently when engaging in discussions about a text. Eventually the goal is for teachers to increasingly fade their involvement in the conversation and for the conversations to become student led.

## The Present Study

To my knowledge, the effects of Reciprocal Teaching on vocabulary acquisition have never been examined. I had reason to believe that since Reciprocal Teaching is also an interactive approach to reading, it would also lead to vocabulary acquisition. I predicted that increased structure and increased student involvement in the RT discussions about information in a text would lead to increases in both receptive and expressive vocabulary acquisition. The rationale for my prediction was supported by the findings of Biemiller and Boote (2006), who found that explicit explanations of words led to increases in vocabulary acquisition because students were forced to be more consciously aware of new words and their meanings. I believed that RT would increase students' awareness of new words and provide increased opportunity for them to both use and think about those words.

Research has shown that interactive approaches to reading can facilitate vocabulary acquisition (Barbham & Lynch-Brown, 2002; Sénéchal, 1997; Whitehurst et al., 1988). The impact of various SR techniques such as labeling, pointing, questioning, discussing and explicitly explaining new words have been studied and shown to positively affect vocabulary acquisition (Biemiller & Boote, 2006; Coyne et al., 2004; Sénéchal et al., 1995; Whitehurst et al., 1988; Walsh & Blewitt, 2006; Wasik & Bond, 2001). Despite extensive research on the impact of reading on vocabulary acquisition, there is still no consensus on how best to facilitate vocabulary acquisition while reading.

My study compared the impact of two interactive approaches to reading, Shared Reading and Reciprocal Teaching, and provided opportunities for incidental learning to occur as well. Biemiller (2001) claimed that vocabulary is not being sufficiently

addressed in current educational curricula. Because reading is currently a crucial part of all grade school curricula, incorporating vocabulary instruction into the reading program might be an ideal way to facilitate vocabulary instruction under current curriculum guidelines.

## METHOD

The present study compared the effects of Shared Reading and an adapted version of Reciprocal Teaching on the vocabulary acquisition of students in two first-grade classrooms. To explore the effects of both approaches to reading on vocabulary acquisition, I conducted a two and a half week study with 45, first-grade students. The students were randomly assigned to a treatment and control group. The treatment group engaged in classroom reading using an Adapted Reciprocal Teaching (ART) approach and the control group experienced a Shared Reading (SR) approach. Both groups read the same books for the same duration of time, but I used a different approach when reading the books to the students, depending on the treatment to which they were assigned. Each group received five 50-minute periods of instruction (excluding the pretest and posttest).

The topic that the students explored while reading was flight. Flight is an appropriate topic to use in a vocabulary acquisition study with first-grade students because it meets certain important criteria as outlined by Elley (1989) that are necessary for vocabulary acquisition to occur. The most important criterion highlighted in Elley's study was the presence of unfamiliar words in the text being read. According to Elley, those unfamiliar words must then be supported by contextual and pictorial cues and be encountered more than one time in a story. The flight books that were used in my study met these criteria. Research on children's vocabulary indicates that flight related words are not part of their common vernacular (Hillerich, 1978; Moe, Hopkins, & Rush, 1982). Hillerich's research demonstrated that certain words pertaining to flight such as plane, airplane, airport, fly, pilot, and wings are used by elementary school children, although infrequently (Hillerich, 1978). Moe, Hopkins, and Rush (1982) had similar findings in

terms of the flight related words used by six-year-old children. Please refer to Appendix A for the exact number of times that children used flight related words in these studies.

Current research clearly supports the use of interactive reading techniques in order to facilitate vocabulary acquisition. The question that remains is which interactive techniques are most effective. In this study, I compared the interactive techniques of SR (questioning, discussing, pointing, labeling, and providing explicit explanations for words meanings) to the interactive techniques of ART (summarizing, clarifying, questioning, and predicting). ART provides students with more opportunities to use and think about new words and as the research has shown, the more times a word is encountered, the greater the likelihood that it will be committed to memory and become part of someone's receptive vocabulary (Herman, Anderson, Pearson, & Nagy, 1987; Saragi, Nation, & Meister, 1978). Ewers and Brownson (1999) believed that interactive techniques such as questioning, allowed students to focus more attention on new words and therefore facilitated a stronger linkage between their short and long-term memory. I predicted that RT would lead to more vocabulary acquisition than SR because it involves more interactive techniques than SR and would therefore help create even stronger linkages between short and long-term memory.

### Research Design

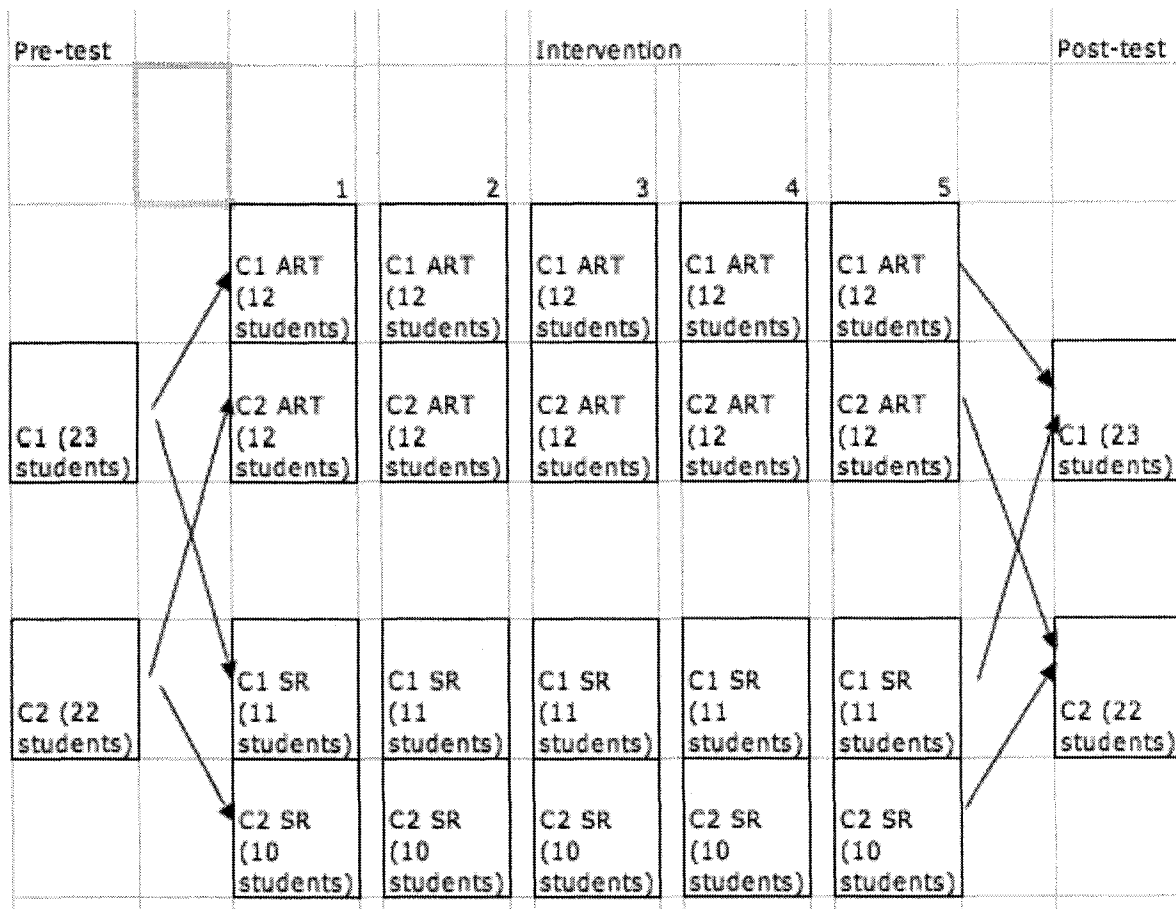
This experimental study was designed as a comparative quantitative analysis. I selected this format for my study to compare the effects of different reading styles on the vocabulary acquisition of 45 first-grade students. The independent variable is the approach to reading and the dependent variables are the students' receptive and

expressive vocabulary scores. The PPVT-R and RFVT were used as covariates to maintain equivalence in receptive vocabulary prior to the interventions. Expressive vocabulary was not pretested because research has shown that students without receptive knowledge of target words rarely possess expressive knowledge of the same words (Sénéchal, 1997).

The students were randomly assigned to either the treatment or control group using a random number generator. I used two classes of first-grade students and divided them each into a treatment and control group, resulting in a treatment and control group in each class. The treatment and control groups from the two classes were not merged, but they received the same intervention as their counterparts in the other class.

The study included three main parts. First was the pretest, followed by the intervention, and the posttest. For an outline of the research design please refer to Figure 1. During the pretest, the students remained in their classrooms and took the PPVT-R and a Receptive Flight Word Vocabulary Test (RFVT), which was formatted in a similar fashion to the PPVT-R. The test was given to the whole class at once but the students were instructed not to talk, to separate their desks and to use cardboard cubicle dividers to avoid communicating about the items among themselves.

The intervention involved five separate lessons. During the intervention, the students were divided into their treatment and control groups. During each lesson, the group receiving the treatment was taken to a quiet room outside the class to avoid distractions (Palincsar, 1986).



### Legend

C1 = class 1

C2 = Class 2

ART =Adapted Reciprocal Teaching

SR = Shared Reading

*Figure 1:* Research design for the ART and SR interventions.



The students who remained in the class engaged in a non-flight related activity. Each ART and SR lesson occurred consecutively within a class, with the same books and for the same amount of time. Class 1 and Class 2 did not receive lessons at the same time because I conducted the intervention in both classes, thus preventing me from delivering the interventions concurrently. For the posttest, the students took the same Receptive Flight Word Vocabulary Test as they did during the pretest as well as an Expressive Flight Word Vocabulary test (EFVT). The students returned to their classes for the posttest, but just as in the pretest, they were not allowed to talk and their desks were separated.

#### Participants and Research Site

The original sample consisted of 50 grade-one students who attended a suburban private elementary school in the greater area of Montreal. I pulled out five students whose mother tongue was not English because the study involved an English language vocabulary assessment. I was not studying the effects of the intervention on students for whom English was a second language. All of the students remained in the group that they had been randomly assigned, but the non-Anglophone students' data were excluded from the final analyses.

All of the students came from upper middle class families and lived in the greater area of Montreal. In order to maintain confidentiality, I used the pseudonym Elmwood throughout this dissertation. Elmwood is a private school composed of 425 students ranging from pre-kindergarten to sixth-grade.

## Description of Data Collection Instruments

### *PPVT-R*

The PPVT is a standardized assessment measure that has been used in numerous vocabulary acquisition studies to assess students' receptive vocabulary prior to a study (Ewers & Brownson, 1999; Fernald, Perfors, & Marchman, 2006; Sénéchal, 1997; Wasik & Bond, 2001;). Many studies have found that students overall vocabulary knowledge affected the number of target words they acquired within a study (Ewers & Brownson, 1999; Reese & Cox, 1999; Robbins & Ehri, 1994). A few select studies have found that students entering vocabulary did not affect their vocabulary acquisition (Elley, 1999; Sénéchal et al., 1995; Walsh & Blewitt, 2006). Because the relationship between entering vocabulary and the acquisition of target words within a study is not well understood I used the PPVT-R as a pretest so that it could be used as a covariate in my data analysis.

Generally, the PPVT-R is delivered on an individual basis. Researchers sit down with one student at a time and say a word while showing the student a sheet with four pictures. The student is asked to point to the picture that represents the word said by the researcher (for a sample of a PPVT-R item, please refer to Appendix B). The PPVT-R consists of 175 words, but students all start and end at different points depending on their age and ability (Dunn & Dunn, 1981). The starting point for the PPVT-R is determined by the student's chronological age. The ending point of the PPVT-R is determined by the number of mistakes a student makes. When a student makes 6 errors in a series of 8 questions the examiner stops the test.

Unfortunately, I did not have the resources to conduct the PPVT-R on an individual basis. Instead each student received a book with pages of the PPVT-R in it and took the

PPVT-R in a whole-class setting. The PPVT-R took 30 minutes when administered in this fashion. The starting point of the PPVT-R was determined based on the age of the youngest student in the class. Since the youngest student's chronological age was six and a half at the time of administration of the test, the PPVT-R started at question 50, which is the first question administered to children who are six-years old.

The ending point for the test was determined by conducting a small pilot study in which I delivered the PPVT-R to two second-grade students with strong linguistic aptitudes. With those two students, the test was administered using the standard delivery of the PPVT-R. Based on the best result of this assessment, I determined the upper limit of the PPVT-R questions that I included in the test that I administered to the first-grade students. If a first-grade student were to have exceeded that upper limit determined by the grade-two students, I would have continued to deliver the PPVT-R to them individually. This situation did not arise and therefore all of the students took the test with the rest of their class.

While delivering the PPVT-R in the class I read a word aloud to all the students and instructed them to circle whichever picture they thought best corresponded to that word. Then the whole class was instructed to turn the page at the same time and the test continued in the same way. For the purposes of calculating individual scores each child's proper starting and ending point was calculated using their actual chronological ages and vocabulary level as described in the PPVT-R manual. While taking the PPVT-R, the students separated their desks, used cardboard cubicle dividers and were instructed not to talk. Researchers have urged caution when adapting the PPVT and comparing PPVT scores to normative data (Simon & Joiner, 1976; Wagner, 1994). I did not use the

normative PPVT-R data and did not compare the students in this study to the average vocabulary of children their age because it was not relevant to this study.

### *Scoring*

Although I delivered the PPVT-R to each class as a whole and not to each student individually, I scored the PPVT-R in the conventional manner. According to the PPVT-R manual, the first step in scoring is calculating the raw score and then the raw scores are converted into derived scores in order to allow for “comparison of individual performance with that of one or more well-defined reference groups” (Dunn & Dunn, 1981, p. 20). I did not convert the students’ raw scores into derived scores because I was not using the PPVT-R as a means of comparing my students to group norms. The PPVT-R was simply used as a way to assess students’ entering vocabulary and to be able to account for entering vocabulary differences in my analysis.

A student’s raw score is calculated by taking the number of ceiling item (the number of the last question that an individual answered) and subtracting the number of mistakes made from it. (Raw score = ceiling item – number of errors; Dunn & Dunn, 1981). The minimum score that any child could have received was 50 since I started the PPVT-R at question 50 and the maximum score was 175, which was the last question on the test.

### *Flight Word Vocabulary Tests*

#### *Receptive Flight Word Vocabulary Test.*

The Receptive Flight Word Vocabulary Test (RFVT) was delivered immediately after the PPVT-R at pretest and administered in the same fashion. Students remained in their seats while the PPVT-R sheets were collected and the RFVT test sheets were

distributed. The RFVT was formatted in the same way as the PPVT-R with four pictures on a page. I read a word aloud and instructed the students to circle the image that best represented that word. The test took 15 minutes to complete.

Each student was given a booklet with 24 pages each one containing of four flight-related images. All together the 24 pages consisted of the 12 target and 12 non-target words that were included in the assessment. None of the images used came from the books that were read to the students. For a sample of an item on the RFVT please refer to Appendix C and for a list of the target and non-target words used please refer to appendix D. Once the students had all circled the picture that they believed matched the word read aloud, they were instructed to turn the page to the next item. This continued until the students had completed the test.

During the posttest the RFVT was delivered in the same fashion as it had been during the pretest but it was administered after the Expressive Flight Word Vocabulary Test (EFVT). Research has shown that expressive and receptive vocabulary tests can assess the same words as long as the expressive vocabulary test is administered first (Sénéchal et al., 1995; Walsh & Blewitt, 2006). By administering the EFVT first I was able to avoid the potential problem of the presentation of the receptive vocabulary test affecting the production of words on the expressive test (Sénéchal et al., 1995; Walsh & Blewitt, 2006).

#### *Expressive Vocabulary Flight Word Test (EFVT)*

The EFVT was delivered solely as a posttest measure since research has shown that children who do not understand target words (i.e. do not possess a receptive

vocabulary of target words) are rarely able to use those target words and incorporate them into their expressive vocabulary (Sénéchal, 1997). During the posttest, the EFVT was delivered prior to the RFVT because the two assessment measures tested the students on the same words. By delivering the EFVT first I was able to avoid the potential problem that having heard the words during the RFVT would have affected students generation of target words during the EFVT (Sénéchal et al., 1995; Walsh & Blewitt, 2006).

The format of the EFVT differed from the RFVT. During the EFVT, an image was projected onto the Smartboard (an interactive whiteboard) at the front of the class, and students were asked to write down a word that they thought depicted the projected image. Once students had written a word the image was changed. This continued until all 24 words, the 12 target-words and the 12 non-target, had been covered.

Students were instructed to use invented spelling when writing their answers during the EFVT. Past research has indicated that mispronunciation on an oral exam or misspelling on a written exam does not affect the results (Sénéchal, 1997). In my class the students are accustomed to using invented spelling when they are unsure how to spell a word. Using invented spelling can help students sound out words, hear the vowels in the words they are writing, and even become better spellers in the end (Adams, 1990; Uhry & Shepherd, 1993). My familiarity with my students invented spelling allowed me to decode most of the words that they wrote during the EFVT. The study was conducted during the last few weeks of the school year. By June most of the students were at least using the correct beginning and ending consonants and many used the right vowels as well. I reviewed the posttests immediately after the students completed both the EFVT and the RFVT. In the couple instances where I had trouble deciphering a word I asked the

student to read what they had written to me and I recorded it below. The students in my class are used to me asking them to read what they have written to me therefore my request did not seem unusual.

The words on the EFVT were organized in a different order than the words on the RFVT, while still ensuring that the non-target words were interspersed among the target words. For the EFVT I used different images than on the RFVT because research has shown that when assessing expressive vocabulary it is preferable to use images from the texts that were read to students so that the images can act as retrieval cues (Sénéchal et al., 1995). To view a sample of one of the images used on the EFVT please refer to Appendix C.

#### *Selection of Non-Target and Target Words*

On both the RFVT and the EFVT a group of 24 flight words were used to assess students' receptive and expressive vocabulary of flight related words. Half of those words were target words and half were non-target words. The students were not aware of that fact that they were only being assessed on half of the words. The target words were not formally introduced to the students. In the SR group I pointed out all of the 24-flight related words (both target and non-target) as we encountered them in the stories that we were reading. With the ART group the flight related words were only brought to the students attention if a student stopped me while I was reading and called attention to an unfamiliar word. During the warm-up sessions the ART group were taught to stop me and ask me to explain unfamiliar or interesting words, otherwise I did not stop while I was reading to the ART group. During the ART intervention I kept track of the words

that the students requested explanations of to see if all of the target words were brought to the students attention. Because the ART students had been instructed to select any words that they thought a kindergarten student would not understand they not only asked for explanations of the target words but even sought the explanations of other words as well. The summary / clarification groups explained many flight words including the non-target words as well as other flight words such as runway and helicopter which were neither target nor non-target words.

*Non-target words.* The receptive and expressive flight word vocabulary tests (RFVT and EFVT) included the same 24 words. Twelve target words and twelve non-target words. The non-target words were selected in order to allow students to feel a sense of success as they were taking the pretests and posttests. These words were selected based on the results of Hillerich's Study (1978) and Moe, Hopkins, & Rush's study (1982) that found several flight words to be more common in young children's vocabulary (refer to Appendix A). The rest of the non-target words were selected with the intention of being age appropriate and having an equal number of target and non-target words. For a complete list of the non-target words please refer to Appendix D.

*Target words.* The target words were selected by first excluding the words that Hillerich (1978) and Moe, Hopkins, & Rush (1982) found to be part of children's common vernacular, and by then selecting more obscure flight words. Words that were chosen as target words, were technical flight words such as yaw (when the nose of the plane moves from side to side). The results of the EFVT and RFVT indicated that the target and non-target words had been well selected. On average students knew 2.06 of the



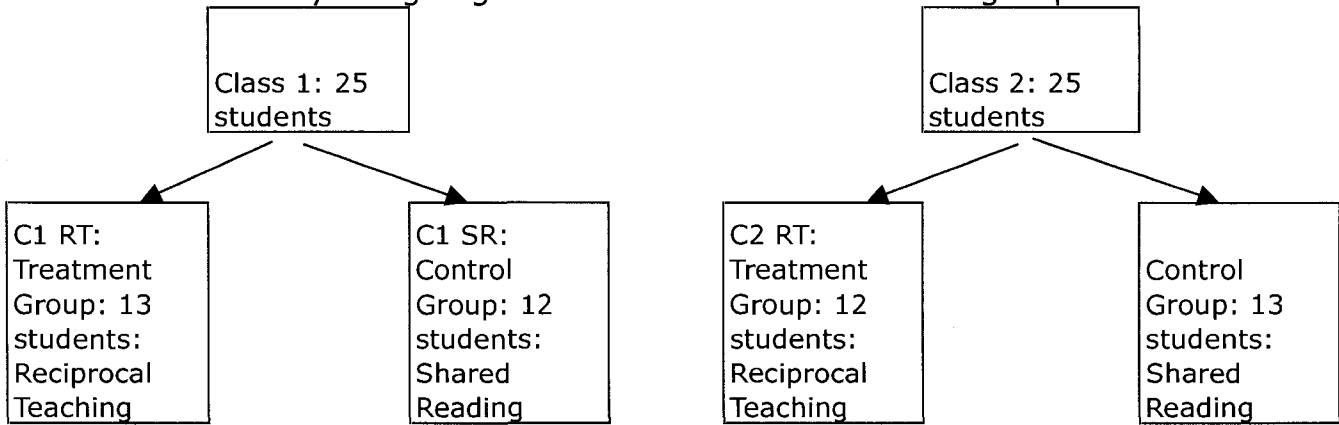
12 target words and 9.14 of the 12 non-target words prior to the intervention. For a complete list of the target and non-target words refer to Appendix D.

### Procedures

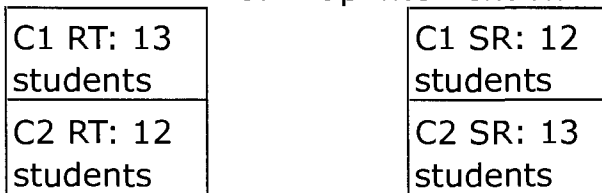
My study comprised of five main phases: the random assignment phase, the warm up phase, the pretest phase, the classroom intervention phase, and the posttest phase.

Please refer to Figure 2 for an overview of the phases of the study.

Phase 1: Randomly assigning students within each class to groups



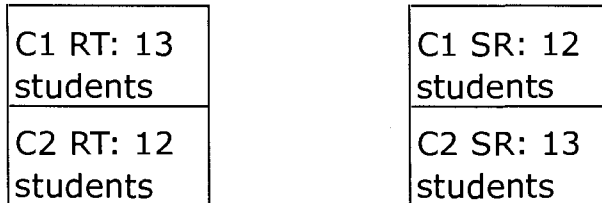
Phase 2: Warm up: Each treatment and control group will receive three warm-up intervention sessions.



Phase 3: Pre-test: Duration 1 hour



Phase 4: Classroom intervention: 5 lessons given 4 times (once per group)



Phase 5: Post-test



Legend: C1 = Class 1      C2 = Class 2    FWVT = Flight Word Vocabulary Test  
 PPVT = Picture Peabody Vocabulary Test      RT = Reciprocal Teaching  
 SR = Shared Reading

Figure 2: Phases of the vocabulary acquisition study

### *Phase 1: The Random Assignment Phase*

I used a random number generator to divide each class into two groups: a Shared Reading group and Reciprocal Teaching group in each class. After I removed the five non-Anglophone students, I was left with 24 students in the Adapted Reciprocal Teaching group and 21 students in the Shared Reading group.

### *Phase 2: The Warm-Up Phase*

The warm-up phase served to prepare the students for the activities they engaged during the actual intervention. There were three warm up sessions for each of the ART and SR groups. My goal during the warm-up phase was for the students to become familiar with either Shared Reading or Adapted Reciprocal Teaching (depending on their random group assignments), prior to the classroom intervention phase.

During the three warm up sessions, I divided the students into their designated study groups (according to the random assignment described in phase 1) to help them become accustomed to either the Shared Reading or Reciprocal Teaching process. During the first session with both the SR and ART groups, I read the book *Koala Lou* (Fox, 1989). In the second warm-up session, I read *Chin Chiang and the Dragons Dance* (Wallace, 1992). For the third warm-up session I read *Buzz, Buzz, Buzz* (Barton, 1973), which is one of the books Craig used in her study to highlight the importance of cause and effect to her students (Coley, DePinto, Craig, & Gardner, 1993).

### *Shared Reading*

With the Shared Reading group, I read the story and stopped regularly to engage in

conversations, have the students point to specific items pictorially represented in the illustration, asked the students questions and explained unfamiliar words. The approach to shared reading that I used was based on research conducted by Whitehurst et al. (1988), Sénéchal et al. (1995), Walsh and Blewitt (2006), and Biemiller and Boote (2006). For example, when reading *Koala Lou*, I asked the student questions such as:

1. What different animals have we encountered in the story so far?
2. Why do you think Koala Lou's mom stopped saying "I do love you"?
3. Why did Koala Lou decide to enter the Bush Olympics?
4. What contest did Koala Lou enter?
5. Why do you think that Koala Lou thought she would win?
6. What type of Tree did Koala Lou climb?
7. Do we have gum trees in Canada?

The goal of these questions, was to help spur discussions while we were reading. By having the students perform tasks such as answering question, pointing and labeling, they were more able to get involved while I read to them. The interactive nature of Shared Reading is meant to increase student comprehension of the story being read, and has been shown to lead to increased rates of vocabulary acquisition used (Barbham & Lynch,- Brown, 2002; Whitehurst et al.,1998; Robbins & Ehri, 1994).

While reading I also stopped to have the students point to images that represent unfamiliar words or I pointed to an image and had the students label what I was pointing to. For example I asked the students to point to animals that they were not familiar with prior to the story such as the platypus or the kookaburra. I also pointed to the platypus and ask the students to identify the animal to which I was pointing.

### *Reciprocal Teaching*

In this study, I adapted the Reciprocal Teaching approach for a grade one classroom (Palincsar & Brown, 1984). These adaptations were implemented in the warm up phase for ART and will be referred to as Adapted Reciprocal Teaching (ART) throughout this dissertation. The format of the ART component of my study was largely based on adaptations made by Sharon Craig (Coley, DePinto, Craig, & Gardner, 1993) when she implemented Reciprocal Teaching in her first-grade classroom (Coley et al., 1993). One main difference between first-grade students and the older seventh-grade demographic that Palincsar first used when implementing RT, is their reading abilities. In first-grade, most students are just learning how to read, while in seventh-grade, most students already know how to read. In order to allow students to focus on the comprehension of the text as opposed to the decoding of the text, I read stories to the students and then allowed them to engage in the ART process (Coley, DePinto, Craig, & Gardner, 1993).

*Explanations to the class.* When working with the ART group, I started the first session by explaining to the students that we would be reading a book somewhat differently than we usually do. Prior to reading the book, I explained to them that after I had read half of the book, I was going to stop reading and divide them into four groups: a summarizing group, a clarifying group, a questioning group, and a predicting group. The students were instructed that after each group had completed its job, they would share their work in a class discussion and then finish the story to check the accuracy of their predictions.

Next, I explained to them what would be expected from each group. I did not assign the groups until I stopped reading because I wanted all of the students to listen to the

explanations to all four activities, not just the activity that they would be responsible for, since group assignments changed with each session. The summary group was responsible for summarizing the book, which meant that they needed to write down what had happened in the book in a few sentences so someone who had not read the book could understand what had happened. The clarifying group was told to pretend that they were trying to explain difficult vocabulary, and clarify the most important parts of the book so that a Kindergarten student would understand. The questioning group was responsible for generating questions about the book. This group had the job of initiating a discussion about the book with the rest of the class. They had the chance to ask the class the questions that they generated and choose people to answer those questions. Finally, the prediction group had the job of trying to predict what was going to happen next in the story. In other words, they were required to predict how the book was going to end. I told them that they should try to generate as many endings as they can think of and that these endings would be discussed as a class.

I explained to the students that once they had finished writing out their thoughts, they had to prepare themselves to present their work to the class. During the first warm-up session, I encouraged the children to take the lead and run the group discussion, but I also helped them if they get stuck or wander off track. In the second and third warm-up sessions, I decreased my involvement.

After the first warm-up session I realized that the summarizing and clarifying groups were duplicating each-others work and therefore I combines the two tasks into one. From then on I divided the ART students into three groups: a summarizing / clarifying group, a questioning group and a predicting group. For the second and third warm-up sessions I

provided the students with a brief introduction to remind them of the three tasks that they were responsible for and made reference to the previous sessions activities. During the class discussion at the end of the second and third class period, I encouraged more autonomy from the students, which enabled me to fade assistance during classroom activities (Collins, Brown, & Holum, 1991).

*Adapted Reciprocal Teaching warm-up session.* The warm-up ART sessions were used to teach the students how to engage in ART. I began by modeling the behavior that I wanted from them. First I read a section of the story to the students and then stopped and summarized what I had read. Once I was done summarizing I explained to the students that what I had just done was summarizing. I did this same thing with clarifying, questioning and predicting. Then I began scaffolding my instruction by asking students to complete one of the four tasks of ART (summarizing, clarifying, questioning and predicting). Once a student had answered my question, I filled in any missing information and explained to the students that what they had just done was either summarizing, clarifying, questioning or predicting depending on which of the four tasks I had asked them to complete. Next I began to fade my assistance by providing the students with more autonomy when summarizing, clarifying, questioning and predicting. Then once I had reached a natural turning point in the book, I stopped reading and divided the students into their groups (Marks, Pressley, Coley, Craig, Gardner, DePinto, & Rose, 1993). Once in their groups, I circulated in order to coach the students ensure that they were on task and understood what they need to do. When I encountered students who were confused, I provided them with prompts to help redirect them and get them back on task.

One problem that Craig encountered in her study, was that despite the use of an adapted version of Reciprocal Teaching, “the dialogues never materialized” therefore she knew that further adaptations had to be made (Coley et al., 1993, p.262). Some of her solutions included giving the students time to prepare, and having the students record what they were going to say prior to the class discussion. While the students were preparing, Craig circulated and spoke to each student. During the warm-up phase, I had the students record their summaries, clarifications, questions, and predictions on paper. Then once they had completed their recordings, I gave them time to prepare their presentations of the information that they had recorded. While they were preparing, I circulated and talked to each student.

As the warm-up sessions progressed the students seemed to exhibit more cooperative behavior with-in their groups. They began to delegated responsibility with-in their groups such as who acted as the scribe when someone was dictating information. In some groups the students alternated with each sentence whose turn it was to write. In another group they passed the pencil around and each took turns writing one word. Once the students had completed their small group preparations the class discussions began to flow.

By the third session the class discussions were flowing smoothly. When a group came up to speak they delegated the responsibility to one group member to provide an introduction that explained what they were going to do. So for instance one group came up and said “We are going to talk to you about the book Buzz Buzz Buzz and ask you some questions. When you answer we do not want you to just say yes or no”. While the students were discussing the story that we had read if a student did answer a question



with a yes or no answer another student would raise their hand and say “But why do you think that?”

After the three warm-up sessions the students seemed comfortable with ART and able to participate in the ART process. The warm-up sessions allowed me to teach them the techniques and routines required to engage in ART, so that during the actual intervention the focus would be on understanding what we read not on learning how to engage in ART.

### *Phase 3: The Pretest Phase*

The next phase in the study was the pretest phase. This phase consisted of two tests: the Picture Peabody Vocabulary Test Revised (PPVT-R) and a Receptive Flight Word Vocabulary Test (RFVT) that I designed based on the format of the PPVT-R (Dunn & Dunn, 1981). The tests were administered to each class. During the pretest, students were instructed to separate their desks, use a cardboard cubicle divider as a physical barrier, and refrain from talking to their peers. I allotted a maximum of one hour for both pretests but in the end they only took a total of 45 minutes.

### *Phase 4: The Classroom Intervention Phase*

#### *The Intervention*

The classroom intervention phase consisted of five, 45-minute lessons. During each lesson a different flight book was read using the techniques associated with whichever group was being read to (SR verses ART). The books that were used included: *First To Fly: How the Wright Brothers Invented the Airplane* (Busby, 2003), *The Flyer Flew* (Hill, 2007), and *Mighty Movers: Jets* (Hill, 2004).

For each lesson both groups read the same books, for the same duration of time. The goal of the study was to compare the effects of Shared Reading and Adapted Reciprocal Teaching on the students' receptive and expressive vocabulary acquisition. The only instructional difference was the reading intervention used. The Shared Reading group engaged in teacher directed labeling, pointing, explicit word definitions, group conversations, and questioning while reading. Meanwhile, the Adapted Reciprocal Teaching group engaged in ART as described in Phase 2 of the study, and were expected to summarize, clarify, develop questions and make predictions without any adult intervention. With both groups I read the books in advance in order to be able to read the stories fluidly. Previewing the books helped me to know when to ask questions in the Shared Reading group and when to stop and allow the students to break off into groups to summarize, clarify, question, and predict in the Adapted Reciprocal Teaching group.

In order for the students to learn and understand written text, four main criteria had to be met. These included: (1) adequate decoding skills, (2) well written texts, (3) a point of reference between the students current knowledge and what they are reading and (4) "the active strategies the reader employs to enhance understanding and retention and to circumvent comprehension failures" (Palincsar & Brown, 1984, p. 118). In my study the first component was not relevant because the students were not required to decode any text, since I read the texts to them. The second criterion, which pertains to having texts that are well written, was met through an informal evaluation. Even though no formal literature assessment technique was applied to assess the quality of these texts an informal examination indicated that there were no grammar, spelling or syntax errors. The texts all used child friendly vocabulary to explain the flight words that they

contained making them age appropriate for grade 1. Research conducted by Hillerich (1978) and Moe, Hopkins, & Rush (1982) supports the assumption that children should have at least a minimal flight word vocabulary, meaning that the student had a point of reference for the subject matter being covered in the flight books used in this study.

The fourth criterion, comprehension, is an important focus of my intervention. Comprehension skills are important in numerous situations in life, and therefore are important skills for students to develop. Unfortunately explicit instruction aimed at developing comprehension skills can be a difficult due to the existence of numerous proposed strategies (Palincsar & Brown, 1984). In order to facilitate the instruction of comprehension skills Palincsar and Brown (1984) selected four activities for novice learners to engage in that are aimed at improving comprehension skills. They include summarizing, clarifying, questioning, and predicting (Palincsar & Brown, 1984).

### *Lessons*

During the first lesson the theme of the unit was introduced when I started reading the book *First To Fly: How the Wright Brothers Invented the Airplane* (Busby, 2003). Since it was a long book I stopped lesson one at page 16. With the SR group I pointed to a picture of a plane from the book and asked the students if they knew what the picture was. Then I asked them questions about planes that were discussed in the book such as how a plane flies. I briefly explained words such as lift and weight since they are discussed in the book. These two principles were important in order for the students to understand that story of the Wright brothers, and the trial and tribulations that they experienced while trying to invent the airplane. With the ART group I only provided explanations of the properties of flight and parts of the plane as the students ask for

clarification. While reading to the ART group I stopped on page 16 and allowed the students to prepare for their group discussion. We continued the book in lesson two.

In lesson two both groups continued reading *First To Fly: How the Wright Brothers Invented the Airplane* (Busby, 2003). The same format for the SR and ART lessons was followed during each lesson. In other words the SR groups engaged in teacher directed pointing, labeling, questioning, discussing and received explicit word explanations meanwhile the ART groups summarized, clarified, questioned and predicted. During lesson 3 we finished *First To Fly: How the Wright Brothers Invented the Airplane* (Busby, 2003). The book took three lessons to finish since it spurred lengthy conversations and was dense with flight information. In lesson four we read the story *The Flyer Flew* (Hill, 2007). Lesson five was the last lesson before the posttest. During this lesson we read about more current planes such as commercial jets, in the book *Mighty Movers: Jets* (Hill, 2004).

*Shared Reading group.* Since the SR group had engaged in three warm-up sessions they were already accustomed to the activities associated with SR group discussions. While reading to the SR group I stopped regularly to ask the students questions about the book. I would often point to something and ask them to identify what I had pointed to. The questions that I asked often led to lengthy discussions about flight and the Wright Brothers. Whenever necessary I would stop and explain new and unfamiliar words.

The overall dynamic during the SR group discussions involved my asking a question and then waiting for students to raise their hands to either: answer the question, express their opinion, or ask another question. Participation in the SR group discussions was dependent on whether or not students raised their hands. I rarely called on students

who had not raised their hand since I did not want to put them on the spot. This meant that generally the students who contributed the most to the group discussions were those students who usually participated in class discussions and were comfortable raising their hands.

*Adapted Reciprocal Teaching group.* During the three warm-up sessions the students had become accustomed to my reading part of a story and only stopping if a child raised their hand and asked me to explain a word. During SR I stopped to elaborate and explain whenever I deemed it necessary. While using the ART format, the explanations that I provided was determined by the students and whether or not they requested clarification, since ART is meant to be student directed. Next I divided the students into 3 groups (summarizing / clarifying, questioning and predicting) and they worked independently on the task that their small group had been assigned in order to prepare for the larger group discussion that resulted when the three groups came back together. I circulated and simply observed the work that was taking place. It was interesting to observe the group dynamics, while also ensuring that the other students stayed on task.

During the small group discussions I instructed that students that everyone had to contribute ideas to be recorded and shared during the large classroom discussion. I also told the student that everyone had to have a chance to talk during the large group discussion. Different groups arranged the way in which they talked differently, but each small group ensured that everyone had a chance to talk. Even the students who were very shy managed to contribute something to the conversation.

During the large group discussions the students did not wait for me to call upon them. Whichever small group was leading the discussion at the time decided who got to

speak when. I changed the small groups with every intervention in order to allow the students the chance to work with different people, and to prevent them from getting stuck in any particular role in the group. Despite the lack of teacher direction during the ART discussions, they ran quite smoothly and were very productive. For samples of the summarizing / clarifying, questioning, and predicting that the ART students engaged in please refer to Appendix E.

#### *Phase 5: The Posttest Phase*

The final phase of the study consisted of the two posttests. The posttests included the delivery of the same Receptive Flight Word Vocabulary Test (RFVT) used in the pretest, as well as an Expressive Flight Word Vocabulary Test (EFVT). I gave the RFVT again to see if there were any significant differences from the pretest to the posttest. More specifically I was looking for differences in flight word vocabulary improvements between the Shared Reading and Reciprocal Teaching groups. As previously mentioned the EFVT was only administered during the posttest since research has shown that pretesting students on their expressive vocabulary of words which they do not yet possess in their receptive vocabulary is not beneficial, since if they do not understand the words it is unlikely that they will be able to use those same words (Sénéchal, 1997). The EFVT and RFVT tested the students on the same words using a different format. During the EFVT images from the books read during the intervention, were projected onto the Smartboard (an interactive whiteboard) and the students were asked to write whatever word they associated with the image projected. For the RFVT students listened to a word and then circled one of four images on the page in front of them that best reflected that

image. The images used during the RFVT were not taken from the books read. For a sample of the EFVT refer to Appendix C.

### *Researcher Bias*

Due to the fact that I acted as both the researcher and the teacher I had to be careful not to allow my data to be skewed by any subconscious bias or preconceived notions that I may have had. My literature review highlighted the positive correlations between SR and vocabulary acquisition. So despite my predictions that ART would deliver a superior result to SR, I followed the previously outline SR activities (pointing, labeling, questioning, discussing and explicit word explanations) in order to deliver the most objective intervention possible.

Another approach that I used to ensure that my attitude and level of enthusiasm did not differ with either one of the groups, was having a third party present during one warm-up and one intervention session for both the SR and ART groups. I asked a teacher from Elmwood School to sit in on one of each of the group interventions during a warm-up sessions and an intervention session. After the sessions I asked the teacher if she noticed any differences in the delivery of my lessons. For a summary of my interview with her after her observation of my delivery of both SR and ART refer to Appendix F.

### *Ethics*

Since in my class it is not common for the students to simply read books without any follow-up activities I gave each class a few follow up lessons after the posttest to ensure that they all received that highest quality of education possible. These lessons

included activities such as acting out the movements of the plane, labeling the parts of a plane, writing a story about a plane and a trip to the airport.

Since there was a significant difference between the groups results on the posttest I implemented a few Adapted Reciprocal Teaching lessons using other flight books, with both intact classes after the study in order to equalize the groups' educational experiences.

*Consent.* Each parent received a consent form that explained the study's procedures and goals. All of my 45 students parents signed the consent form therefore I was not required to exclude any student from the study due to a lack of parental consent. The students were verbally informed about the project and its general goals. In particular the project was described as such: " As you all know I go to school just like you do and I also work on projects for my teachers just like you do. Right now I am working on a project with my teacher about teaching grade one students about flight and I want to show her how you all become 'mini flight experts' as we learn about flight. I want to tell my teacher about how much you learn but no one will see your names or know who you are. This unit will be a lot of fun but if you do not want me to show my teacher how much you have learned then all you have to do is tell me and that is just fine with me". All of the students expressed enthusiasm at the idea of my being both a teacher and a student and seemed eager to have me "show my work to my teacher" After the posttest a few of the students even came and asked me if my teacher had liked their work. For a sample of the consent forms used refer to Appendix G.



## RESULTS

## Establishing Group Equivalence

The measures of assessment used in this study were two pretests (the PPVT-R and the RFVT) as well as two posttests (the RFVT and the EFVT). For a summary of the means and standard deviations on these tests, please refer to Table 1. Any blanks found in the table represent the fact that data were not collected at that specific time for that specific test. To examine whether any differences existed between the two groups on their incoming general receptive vocabulary and their incoming receptive flight word vocabulary, I conducted a MANOVA to test for differences in the PPVT-R and RFVT means between the two groups (SR and ART). I found no significant differences between the groups when using the PPVT-R and RFVT as dependent measures ( $F(2, 42) = 2.03$ ,  $p = .14$ ). Thus, I found no evidence that the two groups were different on these two measures prior to the study.

Table 1

*Means and Standard Deviations of the Pre- and Posttest Scores for the Vocabulary Measures by Group*

Measure	Adapted Reciprocal Teaching		Shared Reading	
	Pre	Post	Pre	Post
PPVT-R	89.04 (12.3)	--	84.95 (7.21)	--
RFVT	.22 (.14)	.66 (.14)	.14 (.11)	.42 (.12)
EFVT	--	.60 (.14)	--	.27 (.18)

### Differential Effects of SR and ART on Receptive and Expressive Vocabulary

A significant correlation was found between the two pretest measures of PPVT-R and RFVT ( $r = 0.41, p < .01$ ). As such, both measures were used as covariates in a MANCOVA to test for differences in receptive and expressive flight word vocabulary acquisition (post-EFVT and post-RFVT) between the two groups after the intervention. This multivariate test revealed a statistically significant difference between the two groups ( $F(2, 40) = 25.12, p < .01, \eta^2 = .56$ ). A comparison of the means on the RFVT and the EFVT measures after the intervention for both the SR and ART groups can be found in Figure 3.

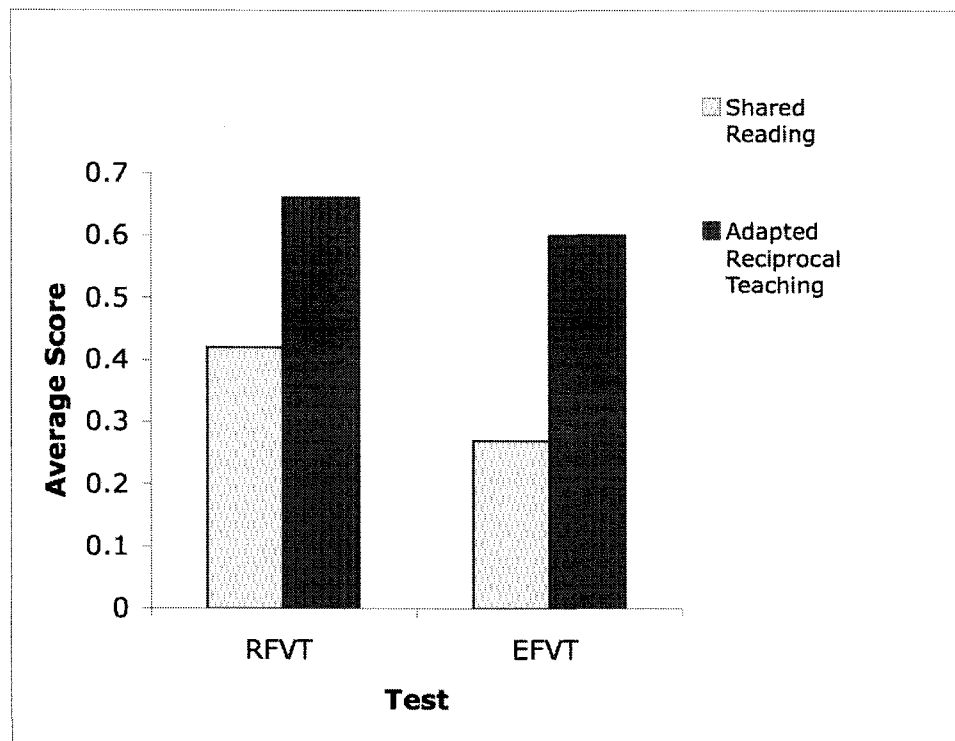


Figure 3. Means for RFVT and EFVT after the intervention by group.

Subsequent univariate tests revealed a significant difference between the two groups on the RFVT posttest ( $F(1, 41) = 31.63, p < .01$ ), with the RT ( $M = .66, SD = .14$ ) outperforming the SR group ( $M = .42, SD = .12$ ). In addition, a univariate test revealed a significant difference between the two groups on the EFVT posttest ( $F(1,41) = 38.38, p < .01$ ), again with the RT ( $M = .60, SD = .14$ ) outperforming the SR group ( $M = .27, SD = .18$ ).

## DISCUSSION

Current research has provided considerable insight into how children acquire new vocabulary. One area that has been heavily researched is the acquisition of vocabulary through reading. Studies have found that children can acquire new vocabulary through both interactive and non-interactive techniques, but tend to acquire more vocabulary when interactive techniques, such as Shared Reading (SR), are used (Barbham & Lynch-Brown, 2002; Jenkins, Stein, & Wysocki, 1984; Nagy, Anderson, & Herman, 1987; Robbins & Ehri, 1994; Saragi, Nation, & Meister, 1978; Schewanenflugel, Stahl, & McFalls, 1997; Sénéchal, Thomas, & Monker, 1995; Whitehurst et al., 1998). In particular the positive effects of SR techniques such as labeling, pointing, questioning, discussing, and explicit explanation of words have been shown to facilitate vocabulary acquisition (Biemiller & Boote, 2006; Coyne, Simons, Kame'enui, & Stoolmiller, 2004; Sénéchal, Thomas, & Monker, 1995; Sénéchal, 1997; Walsh & Blewitt, 2006; Wasik & Bond, 2001; Whitehurst et al., 1988). In addition, Reciprocal Teaching (RT), which incorporates several interactive activities between teacher and students, has been shown to increase reading comprehension (e.g., Palincsar & Brown, 1984; Palincsar, 1986). Never the less, studies had yet to examine the potentially beneficial effects of RT on vocabulary acquisition.

This study compared the effects of SR and ART, two interactive approaches to reading aimed at increasing comprehension, on the receptive and expressive vocabulary acquisition of first-grade students. ART is an adapted version of Reciprocal Teaching meant to meet the needs of younger students than in the original study (Palincsar & Brown, 1984). Forty-five first-grade students were randomly assigned to either the SR

group or the ART group to which 45-minute reading instruction interventions were administered for two and a half weeks.

Both ART and SR involved a group discussion about the text being read. By reading several books on flight to the students in each group, I was able to expose them to all of the target vocabulary words. While reading, the students engaged in conversations that differed depending on whether they were assigned to the SR or ART group. In the SR group, the teacher led the conversations by asking questions, asking the students' label and point, and explicitly explaining words. In the RT group, the teacher observed the students as they developed summaries, clarifications, questions, and predictions in small groups and then used those to engage in a large group discussion. In the SR group the teacher initiated the discussions. Meanwhile during the warm-up sessions the ART students were taught to take notes to help them initiate conversations without the teacher. During the intervention it was the ART students who led the class discussions. I hypothesized that the increased student involvement and the more structured nature of the ART approach would result in more vocabulary acquisition than the SR approach.

As predicted, the ART group outperformed the SR group on both the receptive and expressive vocabulary measures after the reading instruction was delivered to each group. Thus, this study provides evidence that ART is more effective than SR at facilitating both receptive and expressive vocabulary acquisition.

#### Contribution to Literature and Existing Theory

Research has shown that using an interactive approach when teaching is beneficial. Interactive teaching techniques have been shown to facilitate learner control,

self-regulation, and continuing motivation, which have been associated with more meaningful learning experiences (Kinzie, 1990). This study furthers existing research on the effects of interactive teaching, specifically within the domain of Language Arts. In particular it examined the relationship between interactive reading techniques, reading comprehension, and vocabulary acquisition by comparing the effects of SR and ART (e.g., Sénéchal, Thomas, & Monker, 1995; Whitehurst et al., 1998). Research has shown that interactive reading facilitates reading comprehension (e.g. Palincsar & Brown, 1984; Brabham & Lynch-Brown, 2002). A possible explanation for this increased comprehension is the dialogue involved in interactive reading, which makes it easier for students to derive meaning and understanding from texts with new and novel information (Dickinson & Smith, 1994). Engaging in conversations while reading a text with new information provides students with opportunities to be both exposed to and to use new words, which in turn fosters children's vocabulary acquisition (Rott, 1999; Sénéchal, 1997).

Both of the reading interventions used in this study were interactive. During the interventions the students engaged in conversations while reading as opposed to passively listening. The results of this study showed larger increases in receptive and expressive vocabulary among the students in the ART group than the SR group. This result supports previous research that interactive reading facilitates vocabulary instruction, but also suggests that increasing the opportunity for students to generate and use novel words can further increase vocabulary acquisition. Research has shown that students can derive meaning from sentences that they hear prior to being able to read (Wittrock, 1990). This

indicates “that language is a generative cognitive process beginning with very young children’s conversations” (Wittrock, 1990, p.347).

According to Wittrock’s model of generative learning (1974, 1985, 1990, 1991, 1992), teachers can facilitate reading comprehension in their students by encouraging them to build connection among the words, sentences, and paragraphs they read and by creating associations and relating the text to their own knowledge and experience (Linden & Wittrock, 1981; Wittrock, 1991). It is possible that because the students in the ART controlled group discussion, they had increased opportunity to build such connections and relations.

By activating the cognitive processes: attention, motivation, knowledge and generation teachers can help their students construct more meaning from their experiences (Wittrock, 1992). Some of the goals of the student led ART discussions correspond to the main processes activated in the generative learning model. To lead the discussions, the students had to focus more attention on what was being read (Wittrock, 1992).

Providing the students with increased responsibility can lead to an increase in motivation (Schiefele, 1991). A study conducted by Benware and Deci (1984) found that students who learned with an active orientation were more intrinsically motivated and developed a better conceptual understanding of the material taught. They defined an active orientation as learning knowing that they would then be responsible for teaching what they had learned to their peers. This study further supports my hypothesis that the ART would outperform the SR group. The ART group listen to the stories being read knowing that they would have to either develop a summary and clarification, questions or

predications from the text that they would then have to use to lead a class discussion. It would be interesting to further explore the domains of an active versus passive learning orientation examined by Benware and Deci (1984) in the context of ART and vocabulary acquisition.

The students in the ART group were responsible for leading group discussions. This responsibility allowed them to draw upon their own knowledge when discussing the material we had read. Another benefit to the students leading the group discussions was that they generated the target words during their group discussions in order to be understood by their peers.

Reading based studies conducted using a generative model of learning have shown that having children generate image or language based representations while reading can facilitate reading comprehension and retention of information (Wittrock & Carter, 1975). This finding can also be used to explain the success of the ART approach in this study. In the ART group the students were required prepare written notes for their group discussions, which constituted a form of language-based representation of what had been read. Perhaps these notes helped to facilitate reading comprehension among the ART students and lead to increased retention of information.

The use of generative instruction has also been shown to increase word recall. In the Wittrock and Carter (1975) study 90 individuals learned a group of randomly arranged, conceptually unrelated words and were then tested for their free recall of these words. The study found that recall increased when generative instruction was used. These results support the use of a generative model of encoding to help create associations that facilitate recall (Wittrock & Carter, 1975).



In the present study, I tested for expressive vocabulary by requiring the students see an image and generate the correct word from memory and record it on a test sheet. In testing for receptive vocabulary I did not require the students to generate the target words, but rather listen to a word being read and then recall the word in order to circle the correct corresponding image from a selection of four images. The students in the ART group were required to use the new target words in their group discussions. It is possible that the students clustered the flight words and created associations in their memories in a similar fashion to the students in the Wittrock and Carter study (1975) in order to help them recall and use the target word in their discussions.

A study conducted by Joe (1998) with 48 adults showed that the process of reading and recounting what was read led to higher levels generative processing, which in turn led to increased vocabulary acquisition of unknown words. The students in the SR and ART group heard the target words the same number of times. But due to the nature of the ART discussions, where the students did not just participate in the group discussions but also led the discussions, the students may have had increased opportunities to recount what had been read. This additional opportunity to use the target words may have led to increased rates of generative processing, which in turn led to greater vocabulary acquisition among the ART students.

### Implications for Practice

The results of this study indicated that my hypothesis was supported. That is, students in the ART group acquired substantially more receptive and expressive flight-word vocabulary than the students in the SR group. The acquisition of vocabulary is an

important skill; research has shown that enhancements in vocabulary skills have been connected to increases in reading comprehension and overall academic success (Baumann, Edwards, Boland, Olejnik & Kame'enui, 2003; Dickinson & Smith, 1994). A larger and varied vocabulary is also important outside the school setting. Having a more extensive vocabulary, for example allows people to communicate more clearly and effectively.

Unfortunately, many school curricula do not allot time to teaching vocabulary until the third or fourth grade, but they do allot time to reading (Biemiller, 2001; Ontario Ministry of Education, 2007, Quebec Ministry of Education, 2007). Research has shown that despite the fact that vocabulary knowledge is an important part of the grade school curriculum, it is not directly taught until third or fourth grade (Biemiller, 2001, 2005). Biemiller (2001) argued that current educational curricula do not sufficiently address the vocabulary instruction needs of elementary and preschool students. If teachers follow the guidelines in such curricula, this study reveals that it is not necessary for teachers to make radical changes to incorporate vocabulary instruction. Implementing an RT or ART model (depending on the grade level) in classrooms would allow teachers to fit some vocabulary instruction into their already busy schedules, without adding a completely new and different element to their current reading instruction curricula. By slightly changing the way that teachers help students learn to read, they can potentially reap large gains in both comprehension and vocabulary acquisition.

While ART may be more effective than SR at facilitating vocabulary acquisition there are also practical implications to consider. It is easier to teach teachers to implement SR than either ART or RT. Teachers have difficulty learning how to implement RT and

the professional development implications for effectively implementing RT are huge (Seymour & Osana, 2003). Before teachers can teach their students to summarize, clarify, question and predict they must learn how to do so themselves. Only once teachers are comfortable with the four main tasks in RT can they begin to learn how to communicate that knowledge through a process of cognitive apprenticeship (Collins, Brown, & Holum, 1991). Implementing RT requires a large time commitment from the teacher wishing to implement it whereas SR is a much more straightforward and less research-intensive approach.

#### Weaknesses and Implications for Future Research

Because of the positive findings of my research, I find myself at the preliminary stages of a much larger study. To expand upon this research, I need to explore the effects of this study with a larger sample and a more varied demographic, such as different cultural backgrounds and levels of socioeconomic status. If I were to conduct this study again, not only would I need to use a larger and more varied sample, but I would also want to change the delivery of the PPVT-R. In this study, I adapted the PPVT-R so that it could be administered to a whole group of students as opposed to delivering it one-on-one as it was intended. By changing the delivery of the PPVT-R, I might have changed the construct validity and reliability of the test.

Another weakness of this study is the possibility of experimenter bias because I implemented both interventions. I attempted to address experimenter bias by having an individual who was unaware of my research predictions observe my delivery of both interventions and then recording her observations. Subsequently, I interviewed her to

ascertain that my delivery was comparable in both groups (refer to Appendix F). If I were to duplicate this study I would hire and train two instructors to administer both of the interventions. The instructors would then rotate between the SR and ART groups to counterbalance the delivery of instruction to the two groups to control for instructor effects.

Another consideration for future research is that practice effects should be controlled, by using the number of times that students used the words as a covariate. These data could be gathered by audio-recording the interventions and then counting the number of times each student used each of the target words. It is difficult to ensure that students in both groups have an equal opportunity to practice and use the target words because increased opportunity to use words is one of the defining characteristics of ART.

Overall, my research delves more deeply into the existing research on the connection between interactive reading with young children and its impact on vocabulary acquisition. The positive correlation between ART and receptive and expressive vocabulary acquisition provides reason for further research to be conducted. Since ART was found to have a larger impact on both receptive and expressive vocabulary acquisition, there is additional incentive for researchers and practitioners alike to further explore this approach with respect to its impact on vocabulary acquisition.

In the future, it might also be interesting to add a measure that would assess more directly the degree of meaning each student constructed for each target word. I hypothesized that part of the reason that the ART acquired more of the target words was because of the generative learning processes that were activated during the student led group discussions. It is possible that because the students were leading the discussion,

they may have had more opportunity to relate what they read to their own knowledge and experiences. A more direct measure of the extent of these relations is necessary to test this hypothesis. This might require a mixed-methods approach of analysis since it would most likely require me to interview the students and gather forms of qualitative data as well as quantitative. Another interesting area to explore would be to conduct a qualitative study of how the two approaches differed. This might help make the reasons why the ART group outperformed the SR group on both posttest measures more explicit.

The results of this study suggest the need for future research to be conducted in the area of ART and vocabulary acquisition. Some other interesting areas to consider exploring in the near future might include the duration, and timing of the interaction involved in the ART intervention. Another area to explore might be the effect of group size on the acquisition of vocabulary. A study conducted by Morrow and Smith (1990) suggested that students experienced the highest level of reading comprehension when read to in small groups as opposed to one-on-one or as a whole class (i.e. more than 15 students). A connection between reading comprehension and vocabulary acquisition has been found in the research, therefore it would be interesting to explore whether group size affects vocabulary acquisition in the same way that it affects reading comprehension (Cunningham & Stanovich, 1997; Crow, 1986; Biemiller & Boote, 2006).

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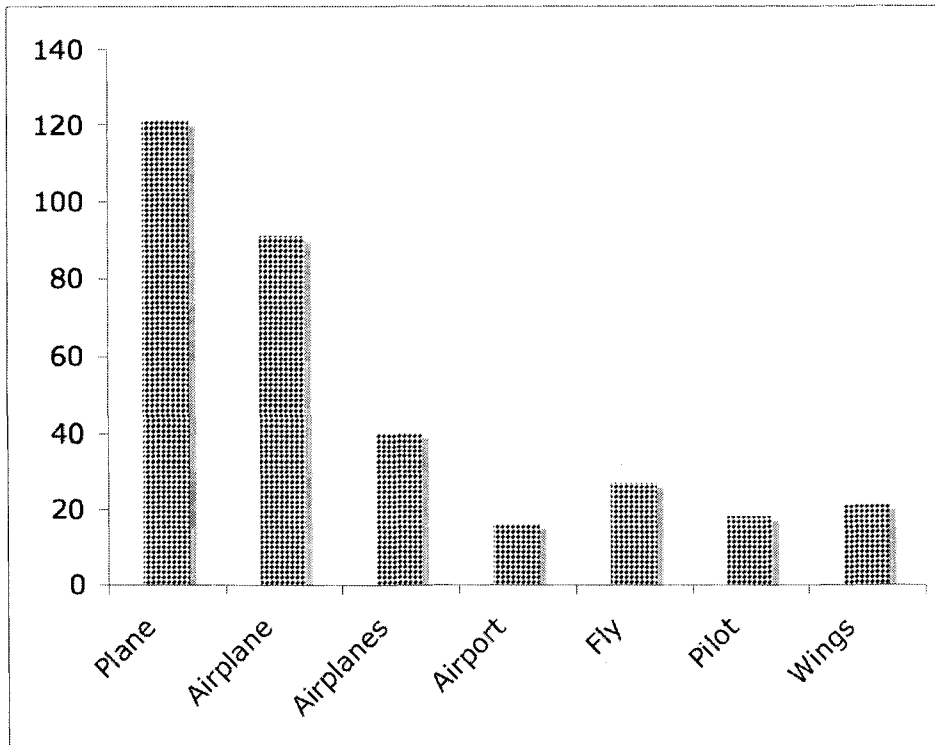
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## Appendix A

Occurrences of the Following Flight Related Words in Hillerich's Study (1978) and occurrences of the Following Flight Related Words in Moe, Hopkins, and Rush's study (1982).

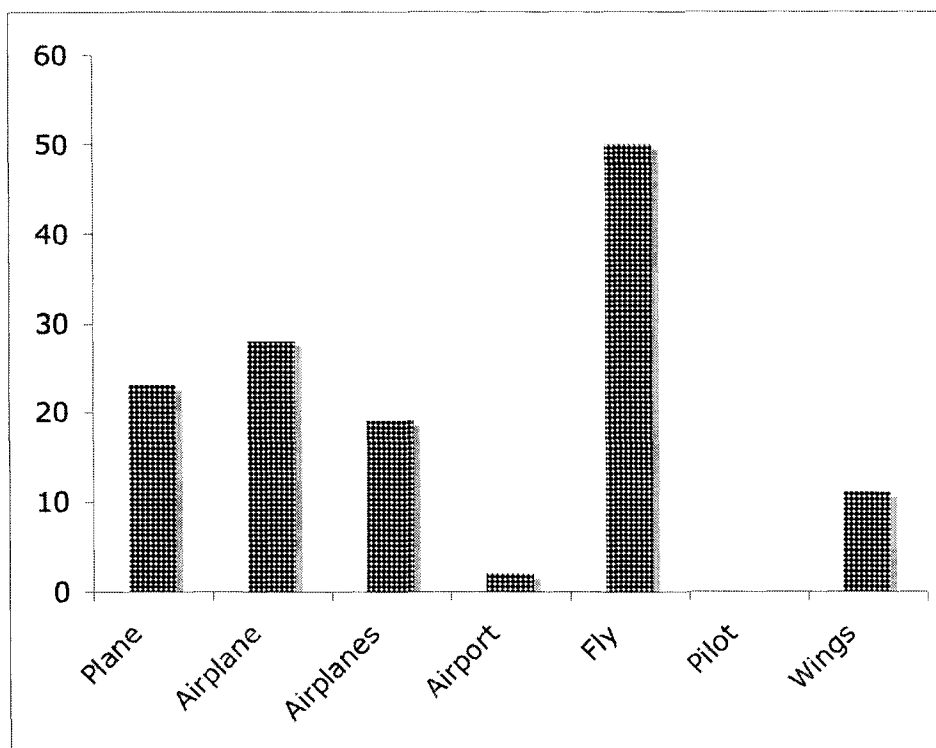
## Hillerich's Study (1978)



Plane	121
Airplane	91
Airplanes	40
Airport	16
Fly	27
Pilot	18
Wings	21



## Moe, Hopkins, and Rush's study (1982)

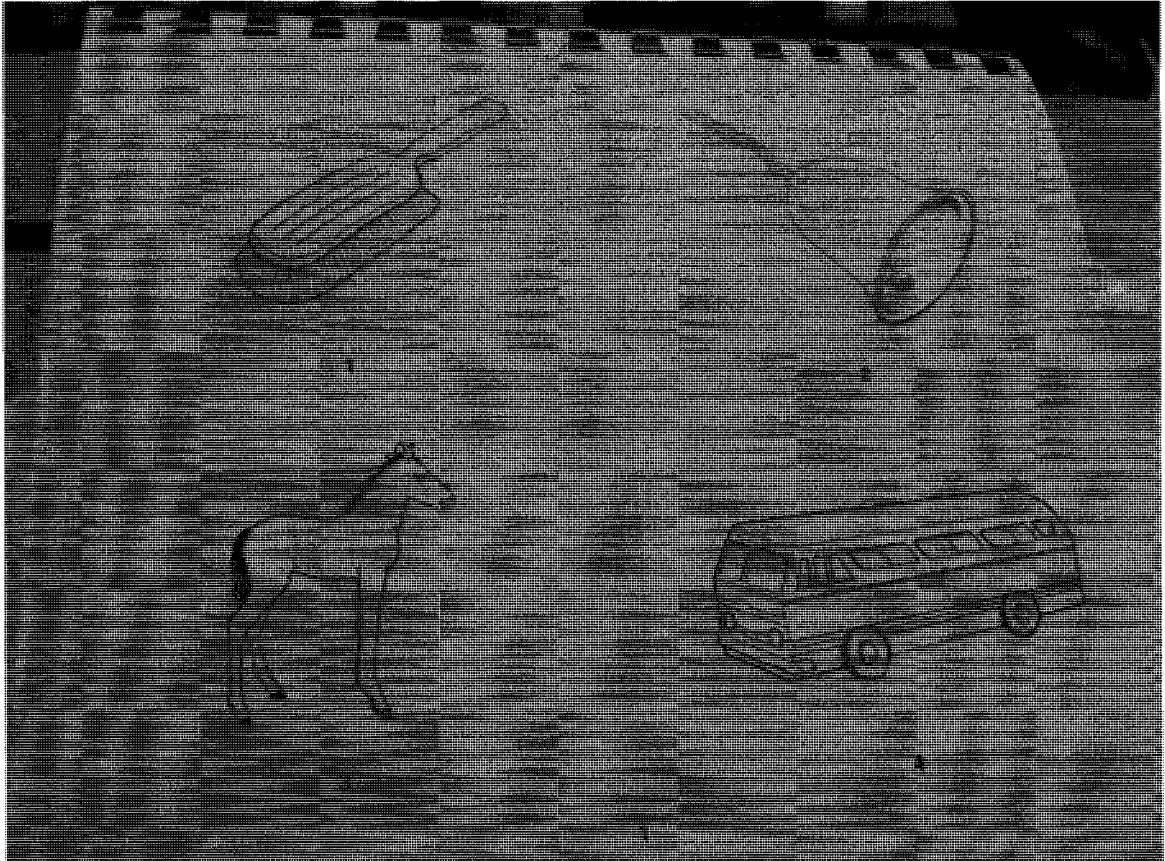


Plane	23
Airplane	28
Airplanes	19
Airport	2
Fly	50
Pilot	0
Wings	11

Appendix B

Sample of the Picture Peabody Vocabulary Test

Researcher says to student: "Please circle the picture of the bus".

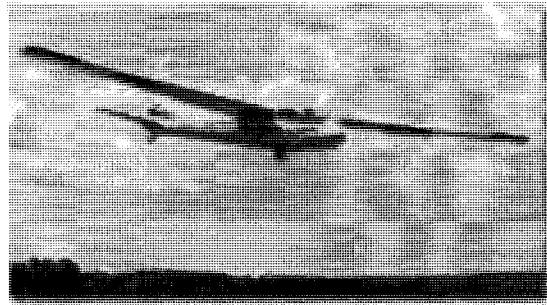
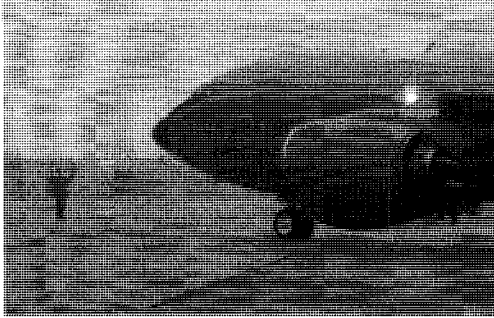
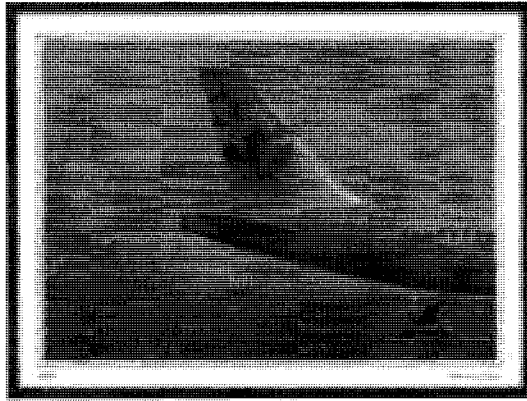
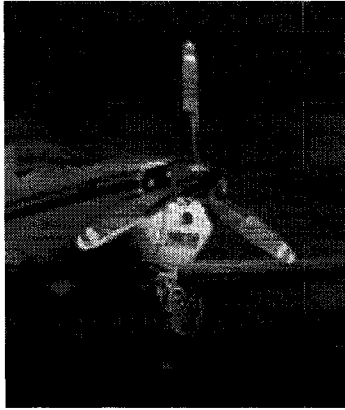


Appendix C

Sample of the Receptive and Expressive Flight Word Vocabulary Tests

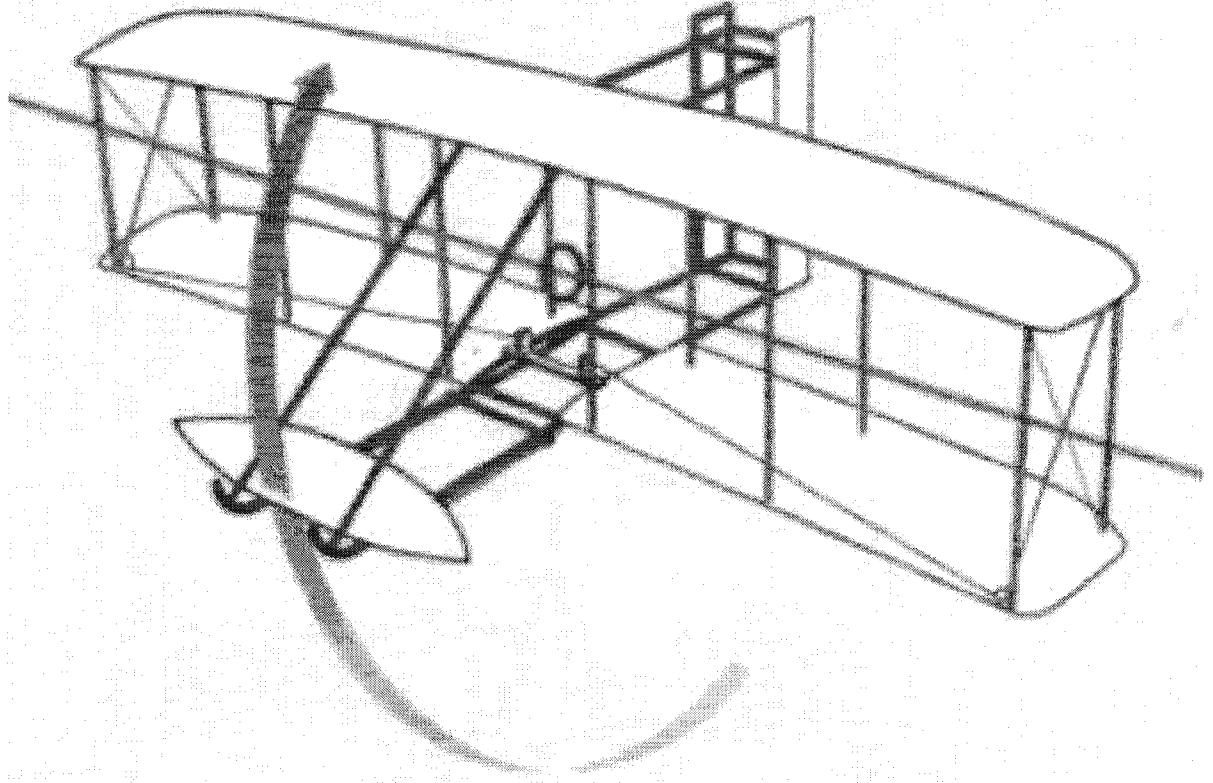
Sample of Receptive Flight Word Vocabulary Test

Researcher says: "Please circle the picture of the propeller".



Sample of the Expressive Vocabulary Flight Test

Researcher says: "Please write the word that best describes the picture on the Smartboard"



## Appendix D

### List of Target and Non-Target Words

## Target Words:

yaw

lift

roll

rudder

pitch

elevator

struts

hangar

bi-plane

nose

ailerons

glider

## Non-Target Words:

propeller

wing

pilot

landing

taking off

jet

call-letters

sea-plane

airport

mono-plane

airplane

flying

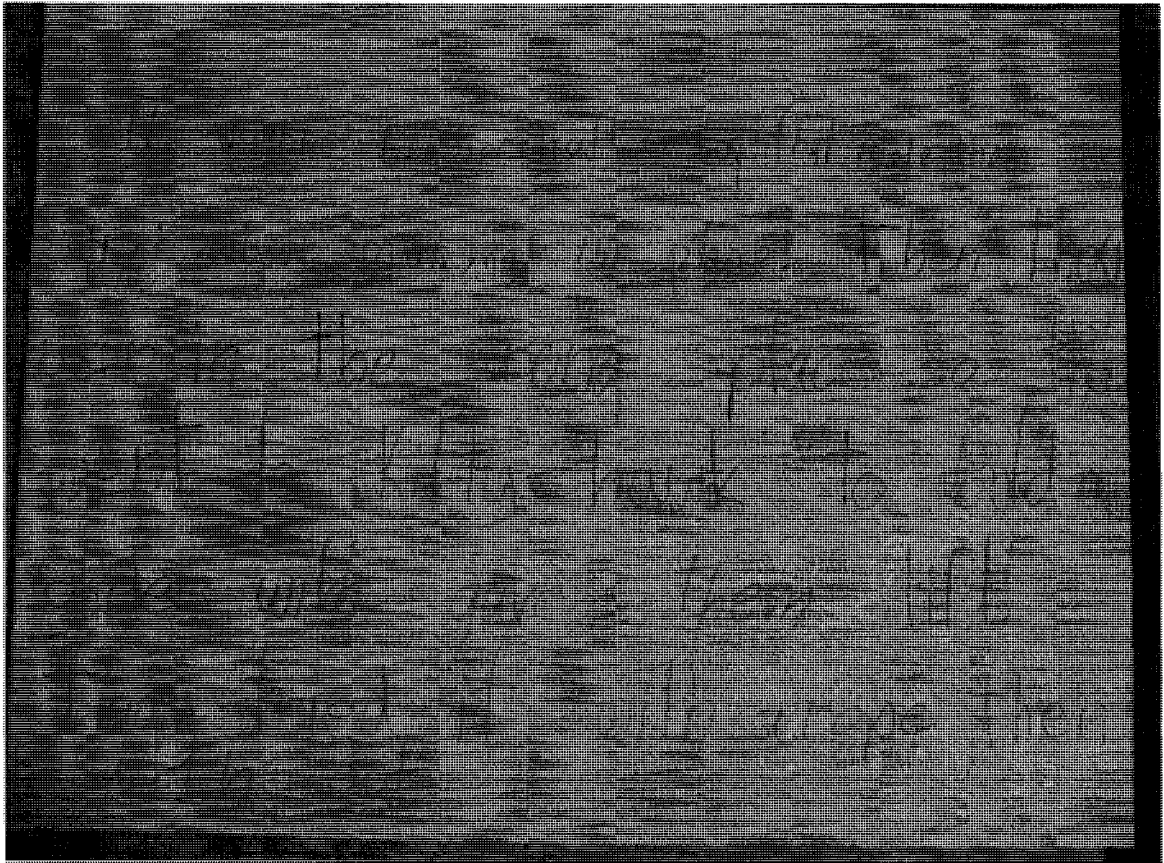


Appendix E

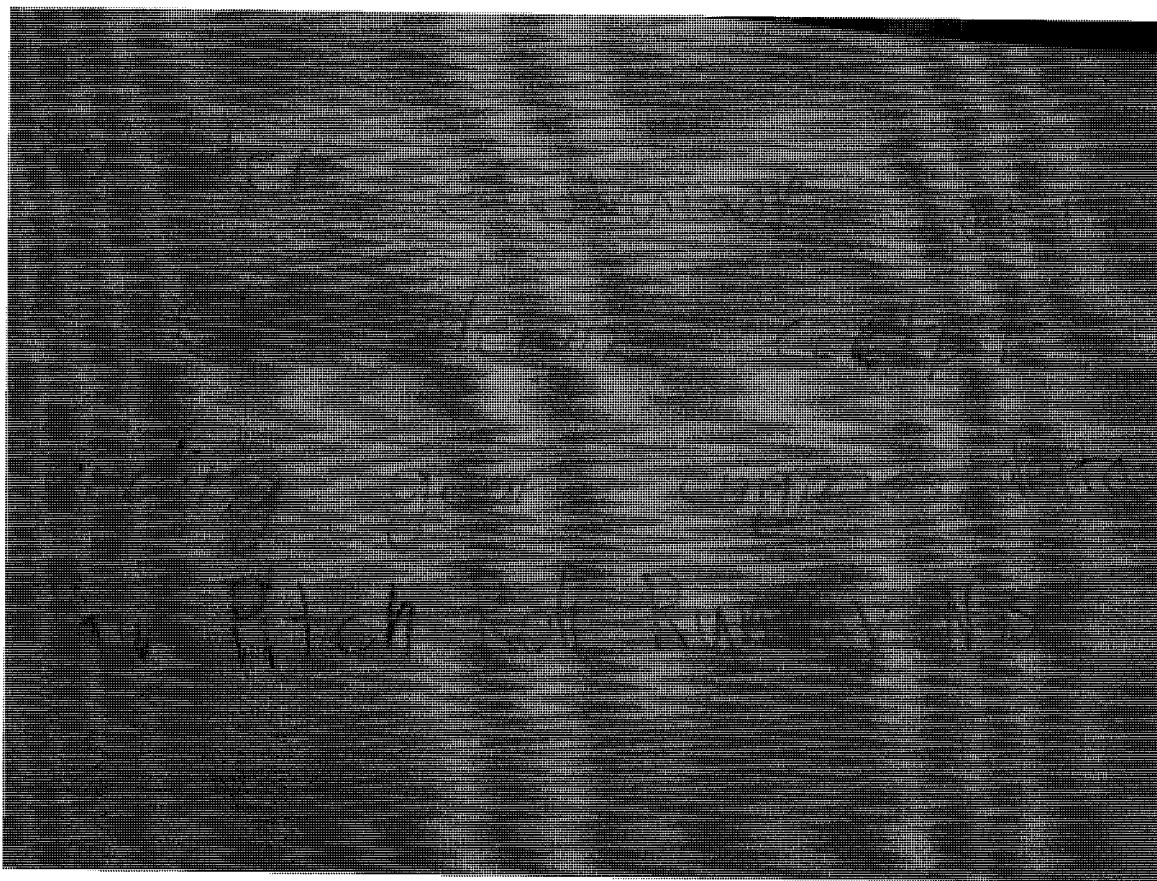
Samples of the Summaries, Clarification, Questions and Predictions Developed by the

ART Group

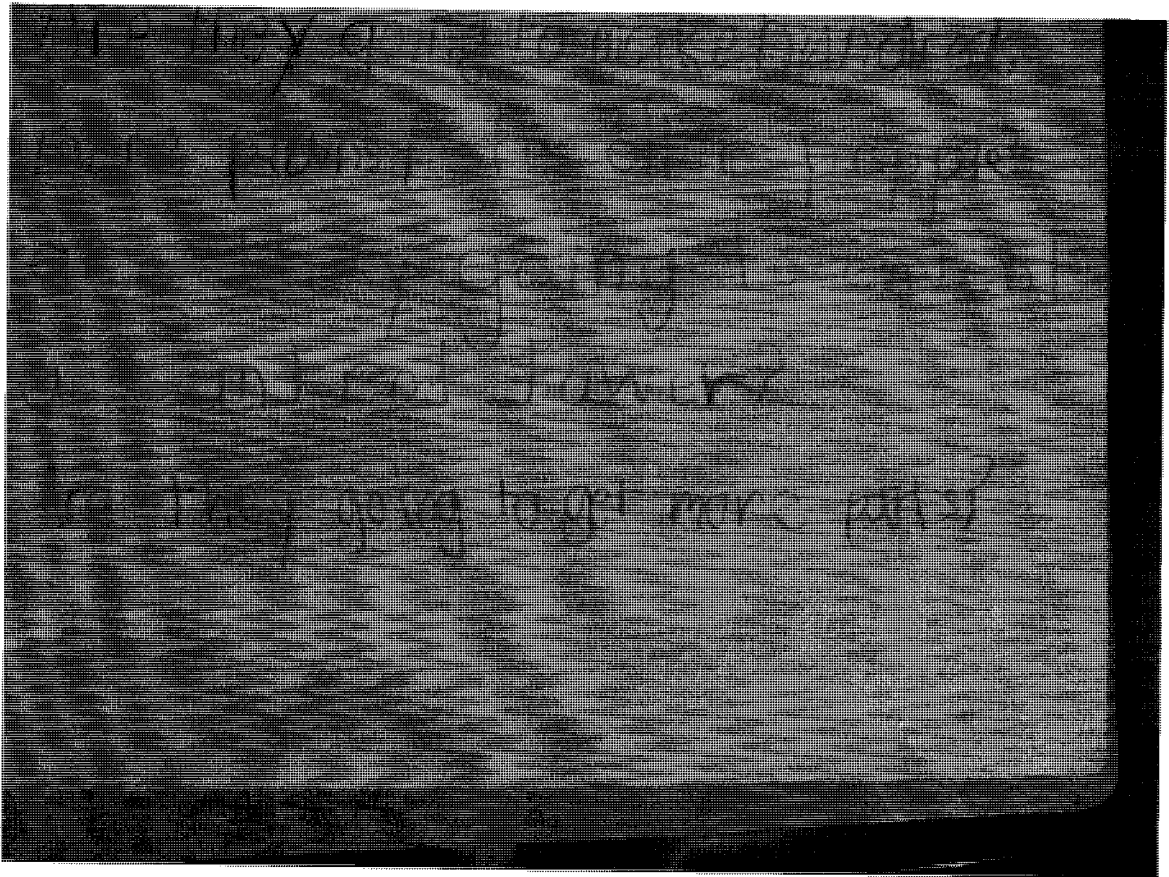
A Sample of a Summary Developed by Some of the Students in the ART Group.



A Sample of Words Selected to be Clarified by Some of the Students in the ART Group.



A Sample of Questions Developed by Some of the Students in the ART Group.





Appendix F

Interview With Third Party Observer Concerning The Researcher's Delivery of the SR  
and ART Interventions

Question 1: Did you notice any differences between the Shared Reading and Adapted Reciprocal teaching lessons?

Answer: In the Reciprocal Teaching groups, the students were more involved and had to use more of their cognition skills, analyzed more, used a more active way of learning, and thought more about their contributions to group discussion. In the Shared Reading group the students were only as involved as the questions and direction that you provided, allowed them to be. More of the students that were engaged in the conversations were those students who are always involved in group discussions. In the Reciprocal Teaching, all of the students were involved, even those who often are not since the format of the Reciprocal Teaching required all of the students to participate. Meanwhile, in Shared Reading, the students' participation often depended on whether or not they raised their hand. The fact that students had time to prepare what they were going to say in Reciprocal Teaching prior to the discussion seemed to make even the students who often do not contribute more comfortable when it was their turn to talk.

Question 2: Did you notice any differences in my general attitude and enthusiasm while teaching either the Shared Reading of Reciprocal Teaching groups?

Answer: The teaching was consistent, maintained the students interest in both groups. You used the same, enthusiasm, excitement and energy with groups. Both groups seemed engaged in the group discussions and group activities, but the Reciprocal Teaching seemed more engaged in the actual learning.

Appendix G  
Consent Forms



## CONSENT TO PARTICIPATE IN VOCABULARY ASSESSMENT

This is to state that I agree to participate in a program of research being conducted by Eliana Mandel) of the graduate department of child study of Concordia University (*If you have any questions please do not hesitate to contact me at 514-9525212 or via email: elianamandel@hotmail.com*).

### A. PURPOSE

I have been informed that the purpose of this research is to explore the upper limits of second graders vocabulary to revise a well known standardized instrument commonly administered individually for group use.

### B. PROCEDURES

Individually interviewing the students that will consist of showing them pictorial representations of words and having them circle the correct image.

### C. RISKS AND BENEFITS

This study does not contain any inherent risks. The students stand to benefit from having some individualized vocabulary instruction. The benefit to me is the opportunity to conduct vocabulary research with less student involvement. The goal of this study is to revise this standardized vocabulary test in order to make it possible to deliver it to a group of students instead of one on one.

### D. CONDITIONS OF PARTICIPATION

- I understand that I am free to withdraw my consent and discontinue my child's participation at anytime without negative consequences.
- I understand that my child's participation in this study is CONFIDENTIAL (i.e., the researcher will know, but will not disclose my child's identity)
- I understand that the data from this study will not be published.

I HAVE CAREFULLY STUDIED THE ABOVE AND UNDERSTAND THIS AGREEMENT. I FREELY CONSENT AND VOLUNTARILY AGREE TO PARTICIPATE IN THIS STUDY.

NAME (please print) \_\_\_\_\_

SIGNATURE \_\_\_\_\_

If at any time you have questions about your rights as a research participant, please contact Adela Reid, Research Ethics and Compliance Officer, Concordia University, at (514) 848-2424 x7481 or by email at [areid@alcor.concordia.ca](mailto:areid@alcor.concordia.ca).

## CONSENT TO PARTICIPATE IN VOCABULARY ACQUISITION STUDY

This is to state that I agree to participate in a program of research being conducted by (Eliana Mandel) of the graduate department of child study of Concordia University (*If you have any questions please do not hesitate to contact me at 514-9525212 or via email: elianamandel@hotmail.com*).

### A. PURPOSE

I have been informed that the purpose of the research is to study the potential benefits of different teaching techniques on vocabulary acquisition.

### B. PROCEDURES

The students will be participating in normal classroom activities such as reading, computer presentations (Smartboard), and group work. The children will not be expected to participate in any additional work. Their potential vocabulary acquisition will be confidentially assessed based on vocabulary pre-test and post-test. Your child's name will not appear anywhere within the study to ensure anonymity and confidentiality.

### C. RISKS AND BENEFITS

This study does not contain any inherent risks. The potential benefits to be derived are linked directly to the students. My goal is to better understand the nature of vocabulary acquisition in grade one students. In increasing my understanding of vocabulary acquisition I am hoping to be able to design my future lessons to further facilitate vocabulary acquisition among my students.

### D. CONDITIONS OF PARTICIPATION

- I understand that I am free to withdraw my consent and discontinue my participation at anytime without negative consequences.
- I understand that my participation in this study is CONFIDENTIAL (i.e., the researcher will know, but will not disclose my identity)
- I understand that the data from this study will not be published.

I HAVE CAREFULLY STUDIED THE ABOVE AND UNDERSTAND THIS AGREEMENT. I FREELY CONSENT AND VOLUNTARILY AGREE TO PARTICIPATE IN THIS STUDY.

NAME (please print) \_\_\_\_\_

SIGNATURE \_\_\_\_\_

If at any time you have questions about your rights as a research participant, please contact Adela Reid, Research Ethics and Compliance Officer, Concordia University, at (514) 848-2424 x7481 or by email at [areid@alcor.concordia.ca](mailto:areid@alcor.concordia.ca).