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Teaching Vocabulary from Narrative and Information Text:
Examining the Effects of Instructional Intensity and Judicious Review on the
Vocabulary and Expressive Language Performance of First-Grade Children
At-Risk of Early Reading Difficulties

by

Eve Marie Puhalla

Advisor and Chairperson:

Lana L. Edwards, Ph.D.

Presented to the Graduate and Research Committee

of Lehigh University

in Candidacy for the Degree of

Doctor of Philosophy

in

Special Education

Lehigh University

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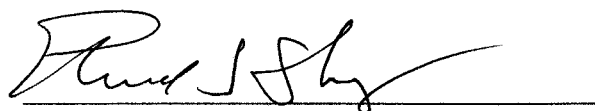
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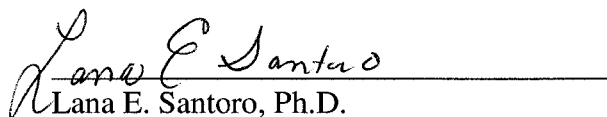
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Dissertation Director
Edward S. Shapiro, Ph.D.
Iacocca Professor of Education and
Professor of School Psychology

Accepted 3-29-05
(date)

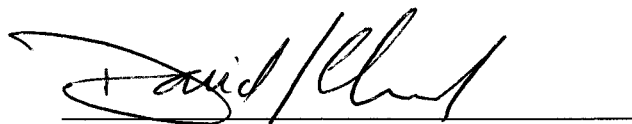
Committee Members



Lana E. Santoro, Ph.D.
Consultant, Pacific Research Institute



Melissa A. Cain, Ph.D.
Professor and Dean of the College of Education
The University of Findlay, Ohio



David James Chard, Ph.D.
Associate Professor of Special Education
University of Oregon



Lee Kern, Ph.D.
Professor, Special Education

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Abstract

This study examined the differential effects of instructional intensity and judicious review upon the acquisition of storybook vocabulary and expressive language skills in first-graders who are at-risk of early reading failure. In addition, this study examined the effects of instructional intensity and judicious review in closing the achievement gap found between students who are at-risk and their average-achieving peers. Sixty-six students, forty-four identified as at-risk of reading failure and twenty-two average-achieving peers, participated in the study. Students identified as at-risk were randomly assigned to a Booster group, where they received explicit instruction and judicious review of selected storybook vocabulary words, or to a No Booster group where they received vocabulary instruction in the context of storybook reading through the Story Read Aloud Project curriculum. A repeated measures group design was employed to compare the effects of the intervention. Results indicated that students in the Booster group significantly outperformed the students in the No Booster group on storybook vocabulary measures. In addition, students in the Booster group closed the achievement gap found between themselves and their average-achieving peers. No statistical significance was found on any of the expressive language measures. Limitations and implications for practice are discussed.

Teaching Vocabulary from Narrative and Information Text:
Examining the Effects of Instructional Intensity and Judicious Review on the
Vocabulary and Expressive Language Performance of First-Grade Children
At-Risk of Early Reading Difficulties

This dissertation study examined the effects of an intervention designed to increase the vocabulary knowledge of first-grade students who are at-risk of reading failure. This dissertation study was incorporated into the final year of a three-year research program (Story Read Aloud Project) that investigated how to teach comprehension and vocabulary through the use of classroom read-alouds with narrative and expository text. Children who are at-risk of reading failure have difficulties with (1) phonemic awareness and segmentation, (2) sight word and vocabulary knowledge, and (3) comprehension (Marlow & Reese, 1992). Recent research has focused on developing strategies to help children with phonemic awareness difficulties (Adams, 1990; Adams Foorman, Lundbert, & Beeler, 1998; Liberman & Schankewiler, 1985; National Reading Panel, 2002). In addition to clear and convincing evidence for improving children's early reading skills with phonemic awareness instruction, the recent Rand report, *Reading for Understanding*, provides a compelling rationale for increasing emphasis on vocabulary and comprehension in the earliest elementary grades (Snow, 2002).

The following chapter presents the conceptual framework underlying the proposed study, the critical features related to vocabulary knowledge, and its effect on academic achievement. The need for early intervention to improve vocabulary

knowledge is highlighted. Research about effective approaches for developing word knowledge for young children is also summarized.

CHAPTER I

Introduction

There is little argument that vocabulary knowledge positively influences reading comprehension (Beck, Perfetti, McKeown, 1982; Stahl, 1983; Stanovich, 1986; Wixson, 1986) and academic achievement (Becker, 1977; Hart & Risley, 1995). In fact, a rich vocabulary is often viewed synonymously with academic success (Beck et al., 2002; Marzano, 2003). Even education assessments such as the SAT, GRE, LSAT, and GMAT consider vocabulary fundamental. Despite the relationship between word knowledge and academic achievement, there is little emphasis on vocabulary instruction in school curricula (Beck, McKeown, Kucan, 2002; Biemiller, 2001; Watts, 1995). Some speculate that vocabulary is not considered an essential component of reading instruction because direct vocabulary instruction seems trivial in the context of the significant vocabulary gains attributed to broad reading experiences (Marzano, 2003; Nagy & Anderson, 1984). Unfortunately, students who struggle with reading often do not engage in sufficient reading to improve their vocabularies (Baker, Simmons & Kameenui, 1998).

Early Childhood Storybook Experiences

Research suggests that vocabulary acquisition is attributed to the talk that occurs in the home during early childhood (Hart & Risley, 1995). A variety of factors influence the conversations that young children are exposed to, including: (a) the socioeconomic status (SES) of the family, (b) parent education levels, and (c) the number of experiences with storybooks (Nino, 1980; Senechal & Cornell, 1993). For example, Hart and Risley (1995) found that by the time children were three years old, *parents* in less economically favored circumstances had used fewer unique words in their cumulative monthly

vocabularies than the *children* in the most economically advantaged families during the same period.

In addition to the benefits of learning words through spoken language, research also discusses the specific aspects of read-alouds that impact a child's early vocabulary development, including parent reading behavior, incidental vocabulary learning, and the features of storybooks that promote word knowledge. The manner in which parents read, and the types of questions they ask during reading, contributes to a child's level of engagement with the text. Reading behaviors such as asking more *why*-questions about story events help develop vocabulary knowledge because children must use more elaborate language to respond to open-ended questions (Heath, 1980; Nino, 1980; Senechal & Cornell, 1993).

Incidental word learning is paramount in vocabulary development; in fact, children can learn novel words from just one exposure (Eller, Pappas & Brown, 1988; Senechal & Cornell, 1993; Stahl, Rickek & Vandervier, 1990). Nagy and Herman (1987) estimate that school-aged children learn approximately 3,000 words annually and suggest that incidental learning is responsible for the majority of this growth. Children whose parents begin reading to them at an early age arrive at school with the academic advantage of an incidentally learned vocabulary and, thus, are prepared to learn more difficult words.

Storybooks contain sophisticated features that promote word knowledge and provide a foundation for the development of complex vocabulary and comprehension skills. Features such as illustrations and words used in context provide concrete examples of a story's plot, setting, and theme. Understanding these story grammar

elements provides the opportunity for children to use their growing vocabularies in a meaningful context.

Unfortunately, not all children share the same early childhood experiences with spoken language and interactive read-alouds. Because many children enter school without read-aloud and vocabulary experiences, educators become the primary teachers of foundational word knowledge and comprehension skills. Teachers, therefore, must promote student background knowledge and vocabulary by finding ways to expand already-existing knowledge.

In addition to students who enter school with less-developed language skills, students with learning disabilities (LD) are also at-risk of academic failure (Senechal & LeFevre, 2001). Students with LD, by definition, function below grade level (Koury, 1996), and the more than 50% of students with LD whose disability is reading are at greatest risk for difficulties in reading and other academic content areas. Because almost 50% of students with LD are placed in a general education classroom (Turnbull, Turnbull, Shank, Smith, Leal, 2002) -- and because federal laws and regulations favor including them in this environment -- it is necessary for teachers to use vocabulary interventions that are successful both with students in general education and those with LD (Koury, 1996; Uberti, Scruggs, Mastropieri, 2003). Direct vocabulary instruction is recognized as a way to provide students with LD with both the background knowledge required for content area instruction and an opportunity for success in inclusive classroom environments.

While there is no substitute for early print exposure and literacy-based language experiences in the home, direct vocabulary instruction can help students acquire the

knowledge needed to be successful (Marzano, 2003). Although explicit instruction accounts for a very small portion of the vocabulary that students learn during an academic year (Nagy & Anderson, 1984), it can be a powerful intervention. Directly teaching students the meanings of words provide vocabulary experiences to students who may not have had early exposure to print and rich dialogic conversations in the home.

Vocabulary

Despite the importance of early reading and language interventions, research on vocabulary instruction for young children is limited. Current research on the vocabulary development of young children focuses specifically on how word knowledge is gained through incidental *narrative* storybook learning (Eller, Pappas & Brown, 1988; Senechal & Cornell, 1993; Stahl, Rickek & Vandervier, 1990). The impact of direct instruction on the vocabulary acquisition of young children has not been studied. In fact, the majority of studies on explicit vocabulary instruction are conducted in the upper elementary and middle-school grades. Hart and Risley's (1995) work clearly indicates the devastating effects that a poor vocabulary in the early years can have on a child's academic achievement in later years. It makes sense, then, to investigate whether the successful explicit instruction techniques used with older students can be adapted for younger students. Exploring whether the use of explicit instruction within read-aloud experiences affects a young learner's vocabulary is an important area that should be addressed by future research.

Existing read-aloud literature provides a solid foundation from which to develop methodologies for teaching word knowledge to young children. Children develop vocabularies on two levels: receptive and expressive. In an effort to provide practical

teaching techniques that ensure students develop sophisticated vocabularies, Beck, McKeown, and Kucan (2002) created a three-tiered system of approaching vocabulary that focuses on explicit instruction, teacher modeling, and active participation by the student. The following discusses receptive and expressive levels of word knowledge and summarizes how explicit instruction and the Beck et al. (2002) three-tiered system can promote a deeper, more expressive use of vocabulary.

Receptive and Expressive Vocabulary

Vocabulary knowledge falls into two categories, receptive and expressive. Receptive vocabulary refers to words that an individual understands when he or she hears them. Expressive vocabulary refers to words that exist within an individual's speaking vocabulary. In 1993, Senechal and Cornell concluded that receptive vocabulary develops before expressive vocabulary. This finding is significant because it demonstrates that children must have a concrete understanding of a word's meanings (receptive) prior to using the words when speaking (expressive). Consequently, children must be exposed to words repeatedly and in varying contexts in order to understand what a specific word means (receptive vocabulary). They then must be given many opportunities to *use* the words (i.e., active participation) before the words move into their expressive vocabulary.

Explicit Instruction

Explicit instruction is defined as "carefully designed materials and activities that provide structures and supports that enable students to make sense of new information and concepts" (Heward, 2000, p. 270). Explicit instruction includes providing sufficient examples, step-by-step strategies, adequate practice opportunities, judicious review, applied activities, and frequent feedback while learning new material (Burke, Hagan &

Grossen, 1998; Carnine, Jones & Dixon, 1994; Gersten, 1998). In other words, the learner is not required to make inferences about what is to be learned; learning is specific and not a process of trial and error (Cazden, 1992).

Stahl (1986) provides practitioners with three principles for explicit vocabulary instruction. First, the teacher should provide both context and definition information for target vocabulary. *Context information* is defined as knowing the core concept of a word and how that concept can change in different contexts (e.g., understanding that the word *station* may refer to a place such as a police station or a train station, and that the same word may be used as a verb such as a guard *stationed* at a bank).

Definition information is simply a dictionary definition and encompasses root words, prefixes, and suffixes. Stahl suggests that although providing definition information is fundamental, emphasizing contextual information should be the core of vocabulary instruction (Stahl & Shiel, 1992).

Second, the teacher must provide opportunities for deep processing, as one is more likely to remember something that is deeply understood. Deep processing can occur three ways: first, by associating new information with prior knowledge (e.g., synonyms); second, by demonstrating comprehension of the information by using the word (e.g., fill in the blanks); and third, by generating novel use of the information (e.g., sentence creation).

Third, the teacher must provide multiple exposures to a word. Instruction that provides numerous encounters with a word provides the redundancy necessary for learning. Additionally, varying the contexts in which the word is utilized allows students to be more flexible with the words that they are learning. Overall, Stahl's principles

reveal that there are many levels of knowing words; knowing a word is not an all-or-nothing proposition (Beck, McKeown & Omanson, 1987).

Beck and McKeown Three-Tiered Framework

Beck and McKeown (1985) provide a three-tiered framework for choosing vocabulary words for instruction. The first tier consists of basic words that require very little instruction (e.g., baby, sad, mommy). These words are typically assimilated into an individual's vocabulary through their continuous use. The second tier consists of high-frequency words that represent a more sophisticated vocabulary and are usable in a variety of contexts. For example, the word *coat* can mean a jacket that you wear when it is cold or could refer to the outer covering of an animal. Tier two words are words typically targeted for explicit instruction because they allow the student to become knowledgeable and flexible with their growing vocabulary. The third tier consists of low-frequency words that are usually found in content-specific materials. For example, one is most likely to find the word *microscope* during a science lesson. These words are typically taught when encountered within their specific context.

Closing the Vocabulary Gap

Overall, one of the most disheartening findings in the research is that not only do children who have reading delays typically not catch up to their peers, but they fall farther and farther behind without explicit intervention (Hart & Risley, 1995; Stanovich, 1986). Unfortunately, these discrepant learning trajectories in vocabulary are evident as early as age three and result in devastating academic consequences for the children left behind (Hart & Risley, 1995; Stanovich, 1986). Unless action is taken to eliminate this

vocabulary gap, children identified as at-risk will continue to fall farther behind in their reading and comprehension skills.

To prevent the vocabulary gap, it is necessary to find efficient, empirically sound techniques to help all students develop robust vocabularies. Closing the vocabulary gap is critical, especially given the relationship between word knowledge and academic achievement and the increased mandates to include students with LD in the general education classroom. Future research, therefore, needs to address ways to optimize word learning opportunities and intensify vocabulary instruction for students at-risk of early reading failure.

Purpose of the Current Dissertation Study

The purpose of this study was to evaluate the effectiveness of a vocabulary intervention designed to increase word knowledge and expressive language skills of first-grade children identified as at-risk of reading difficulties. The instructional intervention designed for this study is intended to help children develop an understanding of new vocabulary words encountered in texts used with the Story Read Aloud curriculum. Instructional procedures focus on (a) direct instruction of target vocabulary words, (b) interactive word play games, (c) judicious review, and (d) small-group instruction.

Research Questions

The following research questions were addressed in the current study:

1. Does storybook vocabulary instruction, with extended emphasis on explicit word learning activities (i.e., Booster Sessions), promote the acquisition of target vocabulary by first-graders who are at-risk of reading failure, when compared to the performance of children not receiving the Booster Sessions?

2. Does storybook vocabulary instruction, with extended emphasis on explicit word learning activities (i.e., Booster Sessions), decrease the gap in target vocabulary found between first-graders who are at-risk of reading failure and their average-achieving peers?
3. Does storybook vocabulary instruction, with extended emphasis on explicit word learning activities (i.e., Booster Sessions), increase the expressive language skills (i.e., number of utterances, story grammar, comprehension) used by first-graders in retells when compared to the performance of children not receiving the Booster Sessions?
4. Does storybook vocabulary instruction, with extended emphasis on explicit word learning activities (i.e., Booster Sessions), decrease the gap in expressive language skills (i.e., number of utterances, story grammar, comprehension) found between first-graders who are at-risk of reading failure and their average-achieving peers?

Null Hypotheses

From the above four research questions, the following null hypotheses were developed:

1. There is no statistically significant difference in vocabulary word knowledge between the students who receive small group instruction (i.e., Booster Sessions) and students who do not receive small group instruction (i.e., Booster Sessions).

2. There is a statistically significant difference in vocabulary word knowledge between students who receive small group instruction (i.e., Booster Sessions) and their average-achieving peers.
3. There is no statistically significant difference in the expressive language skills (i.e., number of utterances, story grammar, comprehension) used during retells between the students who receive small group instruction (i.e., Booster Sessions) and students who do not receive small group instruction (i.e., Booster Sessions).
4. There is a statistically significant difference in expressive language skills (i.e., number of utterances, story grammar, comprehension) used during retells between students who receive small group instruction (i.e., Booster Sessions) and their average-achieving peers.

Alternative Research Hypotheses

1. There is a statistically significant difference in vocabulary word knowledge between the students who receive small group instruction (i.e., Booster Sessions) and students who do not receive small group instruction (i.e., Booster Sessions).
2. There is no statistically significant difference in vocabulary word knowledge between students who receive small group instruction (i.e., Booster Sessions) and their average-achieving peers.
3. There is a statistically significant difference in the expressive language skills (i.e., number of utterances, story grammar, comprehension) used during retells between the students who receive small group instruction (i.e., Booster

Sessions) and students who do not receive small group instruction (i.e., Booster Sessions).

4. There is no statistically significant difference in expressive language skills (i.e., number of utterances, story grammar, comprehension) used during retells between students who receive small group instruction (i.e., Booster Sessions) and their average-achieving peers.

Significance of the Study

All students are expected to acquire sufficient vocabulary knowledge to be successful in their academic and personal endeavors. Because word knowledge is a crucial link to academic achievement (Hart & Risley, 1995; Senechal & Cornell, 1993; Senechal, LeFevre, Hudson, & Lawson, 1996; Wells, 1986) and comprehension (Anderson & Nagy, 1991), the National Reading Panel (2002) adopted *vocabulary* as one of its primary focus areas for developing evidenced-based instructional methods. Unfortunately, there is no research on how to teach vocabulary to children in the primary grades, let alone with children who may be at-risk of reading failure or have LD.

This study is expected to contribute to the literature in vocabulary instruction by using direct instruction techniques to teach vocabulary to children of primary school age (i.e., first grade). The current study also builds on the work of Senechal and Cornell (1993) by designing an empirically based instructional framework for teaching vocabulary to young children. The framework used in the current study incorporates best practices from the research on explicit instruction and integrates these direct instruction strategies into storybook reading experiences. In addition, the current study addresses

some socially valid issues observed in the current literature, as it took place under typical classroom conditions (i.e., small group instruction).

CHAPTER II

Review of the Literature

This chapter examines empirical research documenting effective instructional approaches designed to increase vocabulary knowledge in young children. Specifically, this chapter includes research that explores read-aloud's impact on vocabulary development and research that examines explicit approaches to teaching vocabulary. It continues with a summary of what is known about how children learn vocabulary from read-aloud experiences and explicit vocabulary instruction, and concludes by outlining the limitations of the current research and how the proposed study will enhance what we know about teaching vocabulary to young children.

Read-aloud Literature

Reading aloud to children is a fundamental facet of child rearing and has a profound impact upon a child's development. Children who engage in regular read-aloud experiences have a more diverse vocabulary (Stahl & Shiel, 1992), and vocabulary knowledge correlates with future academic achievement (Hart & Risley, 1995; Senechal & Cornell, 1993; Senechal, LeFevre, Hudson, & Lawson, 1996; Wells, 1986).

Because children's literature contain 50% more rare words than prime-time television or college students' conversations (Hayes & Ahrens, 1988), it makes sense that students entering school with a greater experience with books have a more sophisticated vocabulary. These students require less instruction in fundamental vocabulary because they have a broader knowledge of words and definitions. As these children encounter the same words in a variety of contexts, they become more versatile with the words they already know; conversely, children who lack read-aloud experience do not have a diverse

repository of useful vocabulary words. Consequently, children who do not have a foundation of word knowledge often encounter early reading comprehension difficulties because they do not understand the words that they hear or understand the meanings of words that they can decode.

Vocabulary research explores the impact of word learning on these early academic differences. To date, research on vocabulary acquisition through read-aloud experiences has investigated factors contributing to word learning in three areas: parent and child reading events, incidental learning that occurs from listening to books, and the use of explicit instruction during read-aloud experiences.

Parent Reading Behavior

Research on parent reading behavior suggests that the *way* a parent reads can greatly affect a child's literacy development (Nino, 1980, Senechal & Cornell, 1993). Heath (1980) found that parents read to their children in qualitatively different ways and that these variations often correlate with the family's socio-economic status. For example, parents of middle-class families tend to ask more *why*-questions (e.g., "Why is the dog digging in the yard?"). Parents of lower socio-economic status ask more *when*- and *what*-questions (e.g., "What is that?"). These differing styles have demonstrable consequences on a child's vocabulary development because each requires a different level of child participation. *Why*-questions engage the child in more *expressive vocabulary* experiences by requiring children to problem-solve and seek information not explicitly presented in the story. These experiences encourage children to talk using both their existing and new vocabulary in meaningful context. Parents who ask their children more *when*- and *what*-questions simply require a child to supply literal information, or

information that is presented in the text. This questioning format usually elicits one-word responses and does not provide the opportunity to practice developing vocabulary.

Incidental Vocabulary Learning

A second focus of vocabulary research examines incidental learning -- words that are learned but not explicitly taught. Nagy and Herman (1987) estimate that children learn approximately 3,000 words annually. Since explicit instruction only accounts for 300 to 400 words per year, incidental learning must account for the remainder.

Research has shown that children can learn incidentally from just one exposure to a novel word (Eller, Pappas & Brown, 1988; Senechal & Cornell, 1993; Stahl, Rickek & Vandervier, 1990). However, word recall is even greater with multiple exposures (Eller, Pappas & Brown, 1988; Elley, 1989; Stahl, 1986). Stahl (1999) suggests that because multiple exposures provide a child with more experience with a word, they supply models of how a word can be used in varying contexts. Consequently, the more often a child encounters a word in text, the more likely the child will add that word to his or her receptive or expressive vocabulary repertoire (Elley, 1989; Leung & Pikulski, 1990; Senechal, 1997; Senechal & Cornell, 1993; Robbins & Ehri, 1994). Furthermore, the child's vocabulary becomes more flexible with exposure to multiple contexts because the child's depth of knowledge expands (Stahl, 1999). These findings clearly advocate repeated readings of individual storybooks (Eller et al., 1988; Elley, 1989; Leung & Pikulski, 1990; Senechal, 1993; Stahl, 1986; Stahl, Rickek & Vandervier, 1990).

Active child participation during read-alouds is also important to incidental word learning (Senechal, 1997; Stahl, 1986; Gipe, 1979; Whitehurst et al., 1988). Concrete experiences with words -- such as opportunities to identify and use novel words during

word-play, activities that apply words to concrete tasks, and discussion about word meanings -- serve as reinforcement for later word retrieval. For example, an activity that includes having children act out a word's meaning, such as shaking one's hands *furiously*, would help enhance word knowledge because it provides a concrete experience in which the child can participate.

Storybook Features

Several storybook features increase the likelihood that children will learn words from read-aloud experiences and promote the use of these new words in their expressive vocabulary. First, children are more likely to acquire vocabulary when the word conveys a concept with a familiar meaning (Gipe, 1979; Leung, 1992). Therefore, the symmetric use of illustration and text (i.e., text and illustration which express the same information) provides a concrete depiction of key vocabulary words (Elley, 1989; Nikolajeva & Scott, 2000). The use of context cues (i.e., words defined within the text) also provides information necessary to understand an unfamiliar word or concept (Eller et al., 1988; Elley, 1989, Gipe, 1979).

Second, words that are critical to understanding a story's theme, a character's traits or motives, or the story's setting are more likely to be assimilated into a student's vocabulary (Elley, 1989; Eller et al., 1988; Stahl, 1986) because of their importance.

Third, a word's part of speech (e.g., noun, verb, adverb) (Elley, 1989; Robbins & Ehri, 1994) influences a child's acquisition and eventual use of a word. Nouns are the easiest to master because they represent concrete objects that are readily identified. Adverbs and adjectives, which describe other words, are typically more difficult for students to learn by exposure alone and often require direct instruction.

Limitations in Existing Read-aloud Literature

Although the literature available on vocabulary development through read-aloud experiences tells us much about the dynamics of acquiring novel vocabulary words, it has several limitations. First, the literature available focuses on storybook reading. In other words, the literature focus is on reading aloud from books that are narrative in nature. There is no literature available on utilizing expository children's literature during read-alouds.

Second, current research analyzes very structured individualized storytelling events (e.g., Eller et al., 1988; Leung, 1992; Senechal, 1997; Senechal & Cornell, 1993). This one-on-one approach, rarely seen in the average classroom because a teacher typically reads to all of the children simultaneously, raises questions about the social validity of a study's conclusions when applied to group instruction.

Third, much of the current storybook research focuses on average-achieving readers rather than students who are at risk of reading failure. Typically developing readers may not require the same intervention intensity as those at risk. Consequently, targeting students with early reading difficulties is vital to determining which interventions will contribute to vocabulary growth.

Fourth, storybook vocabulary research has traditionally focused on preschool children, although there is at least one published study of upper elementary and middle school students (Brett, Rothlein, and Hurley, 1996). Because reading aloud is common during the primary grades -- years that are dedicated, in part, to developing literacy skills -- it is critical that we find techniques for improving the vocabulary skills of early elementary students.

Fifth, much of the existing research on vocabulary instruction focuses on incidental word learning from storybooks; in other words, the focus is primarily on the acquisition of vocabulary words casually heard when listening to stories. There is currently no research supporting interventions designed explicitly to teach vocabulary within the context of read-alouds. Current research also fails to explore whether children develop expressive language skills and use target vocabulary from read-alouds.

It is clear that storytelling events are critical for a child's vocabulary development and create an environment where children learn words simply by exposure. Although students have the ability to learn words incidentally, it is necessary to determine how to teach words through more explicit means, as not all word learning will occur through read-alouds or casual conversation. Consequently, research has investigated a variety of methods for explicitly teaching words and their meanings to children.

Vocabulary Literature

Research has examined a variety of vocabulary interventions with elementary students with and without reading difficulties. Unfortunately, there are no empirical studies investigating explicit vocabulary instruction with students in the *primary* grades (i.e., K-2). This absence of research may be due to the instructional emphasis on basic reading skills such as phonemic awareness and the alphabetic principle in many primary-grade reading curricula. Because there is little knowledge about effective vocabulary instruction for children in primary grades, examining word-learning methods that have been successful with older students may be helpful in determining what may be effective for primary learners.

Selection Criteria

In an effort to locate empirical studies exploring vocabulary interventions, a computer-assisted search of ERIC and PsychINFO databases from 1978-2005 was conducted using the following descriptors: *vocabulary*, *disabilities*, *intervention*, *strategies*, and *instruction*. In addition, ancestral searches were conducted of the articles identified through the computer search. Finally, a hand search of the following journals was conducted to locate current literature not available through the database search: *Exceptional Children*, *Journal of Special Education*, *Learning Disabilities Research & Practice*, *Reading and Writing Quarterly*, *Reading Research Quarterly*, *Reading Teacher*, and *Remedial and Special Education*. Dissertation Abstracts, book chapters, and unpublished studies were not included.

Five criteria were used to select articles for review. First, the primary purpose of the study must have been to investigate the effects of vocabulary instruction upon vocabulary acquisition. *Vocabulary instruction* was defined as teaching students previously unknown words and their meanings. Consequently, the study must contain a dependent measure specifically assessing vocabulary knowledge. Second, participants in the studies must be identified as elementary school students (i.e., K-6). Third, for studies that included students with disabilities, only those whose participants were identified as *learning disabled* were included. Fourth, only experimental, quasi-experimental, and single-subject design studies published in professional journals were reviewed. Studies that included second-language learners (e.g., ESL) and mixed special education populations (e.g., LD and MR) whose data were not aggregated, as well as studies whose focus was purely on teaching sight-word vocabulary (e.g., Dolch or basal word lists),

were excluded. A total of seventeen articles meeting the selection criteria were identified for review.

Analysis Procedures

Articles identified through the search process were categorized into two groups: those whose subjects were identified as LD and those whose subjects were in general education. The type of vocabulary intervention implemented was then reviewed and the studies were organized into similar instructional categories. The studies in each category were then evaluated to determine similarities between interventions and any trends associated with the results. Studies are outlined in Tables 1 and 2.

Vocabulary Interventions in Elementary Grades

Computer-aided instruction (CAI). With the increased presence of computers in the classroom, CAI is often utilized to supplement teacher instruction and provide students with the drill-and-practice required to become proficient with basic skills (Wolf, 1999). In a one-group, pretest/post-test design intervention conducted by Boettcher (1983), the impact of a CAI program, *Reading Comprehension System (RCS)*, upon vocabulary achievement of 28 students with LD in fourth through sixth grades, was evaluated using the vocabulary subtest of the California Achievement Test (CAT; Level 13; approximately third grade).

The RCS consisted of 30 lessons and contained a pool of vocabulary words divided into six levels of increasingly difficult phonetic patterns. Approximately 7% of the words were considered “new,” whose meanings were needed to understand the passages students were expected to read. Each lesson began with the presentation of up to ten words and their definitions. The computer then engaged the students in five

activities that focused on practicing the new words through various vocabulary/comprehension activities (e.g., semantic, syntax). On average, students worked with the RCS program for 45 minutes per week for nine weeks. Students' average gain from pretest to post-test on the CAT was over one year, with gains ranging from four months to 28 months.

In a second study utilizing CAI to improve vocabulary, Herbert and Murdock (1994) used an alternating treatment design with three sixth-grade students with learning disabilities. Each student was exposed to three different computerized speech conditions (i.e., no speech, digitized speech, synthesized speech) each day for six days. Seventy-five words were selected and presented in alphabetical order, 25 in each condition. Students were instructed to silently read the words, definitions, and sentences presented on the screen regardless of whether the computer spoke and to press the "return" key when they were ready to move to the next screen. After each set of 25 words, the computer administered a 25-item multiple-choice test that did not utilize speech.

Results indicated that the students learned more vocabulary and reached the criterion of 80% when CAI utilized speech. However, there were no significant differences between synthesized and digitized speech. In contrast, all students from the "no speech" condition maintained a failing score (less than 66%), even after six days of exposure to the same 25 words. Social validity results also favored speech conditions, with students noting that it was easier to learn from the computer than their (usually poor) handwritten notes. In other words, results suggested that the computer promoted independent learning (instead of having to ask someone for assistance) and was more fun.

Constant time delay (CTD). In CTD, students are exposed to a word they are expected to master and are given a 0-s time delay before the word's definition is provided. In subsequent attempts, the word is presented and the student is prompted to provide the definition. If the child fails to respond after a pre-established time period (e.g., 5-s) has elapsed, the definition is provided. If the child responds incorrectly, the correct definition is immediately supplied. This technique is often credited with providing a near error-free learning environment (Wolery, Ault & Doyle, 1992).

Shuster, Stevens and Doak (1990) utilized a multiple-probe design across students to explore the use of a CTD procedure to teach word definitions to three fifth-grade students with learning disabilities. The participants, each with a unique group of ten vocabulary words, were instructed on word meanings using CTD procedures, beginning with a 0-s delay, then increasing to a 5-s delay. All students were able to define the words with 100% accuracy within four days of the intervention's onset and maintained the words at six, ten, and fourteen weeks later.

Video anchor. In a three-group, post-test-only study conducted by Koury (1996), the effects of pre-teaching vocabulary with and without video anchors (i.e., video clips using selected vocabulary words) was explored. One hundred fifth-grade students, nineteen with learning disabilities, were included in a general education science class where they were instructed on new vocabulary through discussion and the viewing of video anchors (i.e., movie clips that use the target word).

General education students were divided into two groups: vocabulary discussion only and vocabulary discussion with video anchors. Students with learning disabilities were placed in a third group and received the same intervention as the general education

group with video anchors. Results indicated that there were no significant differences between the two general education groups on a curriculum-based assessment requiring students to define and provide one example for each of the ten items. There were significant differences, however, between both general education groups and the group of students with LD, with the LD group performing more poorly.

Story Read Aloud. In Brett et al. (1996), 175 fourth-graders participated in an instructional intervention to investigate how many target words they would learn if they heard a story in its entirety, compared to the number of words learned if the words were defined within the context of the read-aloud. Results of a multiple-choice assessment given pre- and post-test showed that students learned and maintained significantly more words when the words were defined within the context of the read-aloud versus solely encountering the word in text.

Casual conversation. The purpose of this study, conducted by Drum and Madison (1985), was to determine the level of vocabulary knowledge students acquired after being exposed to words and their meanings during a single conversation. Ten students, ranging in age from 7 to 12 and attending a private reading clinic, were pre-assessed on their knowledge of ten words relating to the seashore. The students, divided into three small groups by age, were then engaged by the tutor in a casual conversation about the seashore for 20 minutes. A post-test on the target words administered three weeks after the session indicated that older students (e.g., 12-year-olds) provided more pre- and post-test responses than younger students (e.g., 7- and 9-year-olds) and contributed more to group discussions. Younger students required more teacher-directed support and vocabulary information during the group session and generally provided more limited contributions

to the discussion. In evaluating tutor effects, it was noted that the students who worked with one particular tutor made more errors on the post-test than students in the other two groups. It was discovered that this particular tutor based her conversation solely on pictures, engaging in a teacher-dominated discussion with little student input.

Direct instruction (DI). Pany and Jenkins (1978) and Pany, Jenkins and Schreck (1982) conducted studies to determine what types of instructional procedures would facilitate word learning with students with learning disabilities. The effects of three different instructional conditions were utilized. “Meanings from context” required students to read words in the context of a brief passage and extract the meaning of the target word. “Meaning given” supplied students with the meanings of targeted words when they encountered the word in a reading passage. In the “meanings practiced” condition, students were shown flashcards of the target words and were provided with each word’s definition. Students were then asked to repeat the definition. In Pany et al., (1982), a fourth condition was added where students simply read the words and were not provided with word meanings.

Both studies utilized a repeated measures, randomized block factorial design, with students serving as their own control. Six students with learning disabilities in grades four through six participated in each study. All instruction took place in self-contained classrooms. Results on curriculum-based assessments from both studies found significant effects for the “meaning practiced” condition, indicating that students who were required to learn word meanings by repeating definitions performed better on tests of word knowledge. In a second study using the same design and conditions as above,

Pany et al. (1982) found similar results with twelve fourth-grade general education students.

An additional six studies utilizing various direct instruction procedures were undertaken with general education students. Each study's purpose, although subtly different, was to compare the effects of differing types of instructional protocols upon a student's vocabulary acquisition.

In Jenkins, Matlock, and Slocum (1989), a pre-/post-test design was used to determine the effects of explicit definition instruction compared with learning vocabulary through the context of sentences. One hundred thirty-five fifth-grade students were divided into six different groups (e.g., explicit instruction and context instruction). Each condition was then subdivided into three groups corresponding to the specific amount of practice each group received (e.g., low, medium, high).

There were two pretest assessment measures. First, a set of assessment was designed to determine whether students knew the vocabulary definitions of the target words. A second set was used to assess whether students could derive meaning from the sentence context. Post-tests included the assessments described above, as well as a contrived-context test, a basal-context test, and a multiple-choice test. The contrived-context test replaced the target word with a nonsense word and required the student to derive the nonsense word's meaning by its context. A basal-context test presented students with target vocabulary words in sentences that were taken from their basal readers and required each student to derive the target word's meaning by its context. Finally, the multiple-choice test required students to choose the word's correct meaning from four options.

Results indicated that students in the explicit instruction group performed better than the context group on the set of measures requiring students to provide only word meanings. Students in the context group, however, out-performed students in the explicit group on the measures that required deriving word meaning from sentences. In general, students exposed to medium levels of practice in each condition performed better than low and high levels of practice.

In Gipe (1979), 171 third- and fifth-grade students were assigned to one of four methods of vocabulary instruction (i.e., association, categorical, context, definition) to determine the most effective approach to teach word meanings. Vocabulary achievement was measured by a multiple-choice test that consisted of two sentences that each contained the target word. Students were asked to choose the sentence in which the target word was used correctly. Final results indicated that students in the context method out-performed those in all other conditions.

Meyer and Cohen (1975) examined the effects of teaching vocabulary through the explicit instruction of skills (e.g., recognizing suffixes and prefixes) and intensive tradebook reading activities. The participants in this study were fourth-graders attending a private learning center. As part of the study, students received 60 hours of instruction in their assigned condition for eighteen weeks. Vocabulary achievement was measured pre- and post-intervention through two standardized assessments (SRA Achievement and Stanford Achievement). At the conclusion of the study, the tradebook group had a higher mean post-test vocabulary score when compared with the skills-intensive group. However, there were no significant differences between groups at pre- or post-test on either measure.

Stahl (1983) also examined the effects of explicit definition instruction and mixed instruction (i.e., word meanings and sentences provided in conjunction with creating independent sentences) on student vocabulary gains. To determine which instructional approach would promote better vocabulary acquisition, Stahl (1983) compared a control group that completed only a skills workbook with two intervention groups. In group one, students were given the definition of the target words and were asked to restate the definition in their own words. In group two, students were given the definition and a sentence for each target word and then asked to create their own sentences to demonstrate the word's meaning. Twenty-eight fifth-grade students were randomly assigned to one of the three instructional approaches for three weeks. Data were analyzed using a 3 x 3 factorial design, repeated measures analysis of variance. When combined, the intervention groups performed significantly better than the control group on a multiple-choice vocabulary CBA. However, when compared to each other, there were no differences between the two intervention groups. Maintenance data indicated that students forgot words over time.

The impact of the quality of instruction upon vocabulary acquisition, latency, and context interpretation was investigated by McKeown, Beck, Omanson, and Pople (1985). Fourth-grade students enrolled in a public school general education classroom participated in the study. Four conditions were created (rich instruction, extended rich instruction, traditional, control) and given different levels of instruction. Students in the rich instruction group had maximum opportunity to interact and use words in a variety of contexts (e.g., context, creative writing). The extended rich instruction group received the same instruction as the rich group but engaged in a game called Word Wizards, in

which students earned points for using targeted words outside of class. The traditional group focused on deriving simple definitions and synonyms. The control group received no instruction. Results of a twelve-item multiple-choice CBA vocabulary test indicated that some type of instruction was better than no instruction in acquiring vocabulary. However, there were no differences among the instructional groups. Students in the extended rich instructional condition were able to identify definitions more quickly than students in any other condition. Finally, students who received rich and extended rich instruction understood targeted words in context more often than students in the traditional and control groups.

Keyword/mnemonic strategies. Keyword and mnemonic strategies require a learner to associate unknown words with familiar, similar-sounding words and utilize imagery to assist in remembering the meaning of an unfamiliar word (Uberty et al., 2003). Three studies in the current review evaluated the effects of keyword/mnemonic strategies to determine which strategy would be most effective in teaching new vocabulary words to students with and without disabilities.

In Condos, Marshall, and Miller (1986), 60 elementary students who received instruction in a resource room participated in a pre-/post-test design study that evaluated the effects of three different mnemonic strategies (e.g., keyword/image, picture only, sentence/experience) and a no-intervention condition on vocabulary acquisition. The intervention consisted of a 20-minute lesson three times per week for five weeks. In the keyword/image condition, students were shown a flashcard that contained a new word and were taught a keyword to associate with each word's meaning. Students were then asked to learn images that depicted the keyword. Finally, students were shown the

flashcard of the new word and asked to recall the picture and keyword. In the picture condition, students were shown flashcards of the new words and pictures that depicted the word's meaning. Students were then shown a flashcard of the new word and asked to recall and explain the picture that corresponded with the word. In the sentence/experience condition, the teacher read a sentence that contained the new word and the students repeated it. The students were then asked a question to assist them in relating the new word to their personal experiences and given 20 seconds to study the word. The control condition was simply instructed to study the new words.

Students were administered a 50-item multiple-choice test as the pre- and post-test measure. The results found that students in the keyword/image condition out-performed all other conditions and that students with higher receptive vocabularies out-performed those with lower receptive vocabularies. On the maintenance measure, students in the keyword/image condition out-performed all other conditions and students with *lower* receptive vocabularies who were in this condition out-performed all other students, including those with larger receptive vocabularies.

Uberty et al. (2003) investigated the effects of three types of mnemonic instruction in an inclusive setting. Seventy-four third-grade students from three different classes were assigned to one of three conditions: keyword, picture, and definition. Students in the keyword condition were provided with a new vocabulary word and a cue word to help them remember the definition. Students in the picture condition were shown a vocabulary word and a picture that depicted the word's definition. Finally, students in the definition condition were shown the word and its written definition. A ten-item CBA was used as the pre-/post-test measure. Results indicate that students with LD benefited

most from the keyword strategy and out-performed general education students who made similar gains across all three conditions.

Comparing the effects of keyword strategies and writing novel sentences was the focus of a study conducted by Levin, Levin, Glasman, and Nordwall (1992) with 53 fourth-grade students in general education. Students in the keyword group were taught how to use keyword mnemonic strategies (e.g., imagery) to remember the meanings of unknown words. Students were then given sixteen words to study independently using keyword strategies. In the sentence-writing group, students were asked to write a sentence that used the target words in a definitional context. Students were given 20 minutes to study the words and then were given a sixteen-item CBA. Students in the keyword group recalled significantly more definitions than the sentence-writing group on immediate and delayed tests. Additionally, it was noted that there was a significant difference in the keyword group between the words that lent themselves to keyword strategies (obvious) and those that did not (non-obvious). This indicates that keyword mnemonic strategies may be better applied to words with more obvious links.

Summary of Vocabulary Intervention Literature

Overall, the studies reviewed suggest that a variety of vocabulary interventions can lead to gains in word knowledge. Computer Assisted Instruction can be a very effective technique to boost students' word knowledge, as it allows students to work at their own pace while continuing to encourage students to make progress. Utilizing CAI with speech capabilities appears to assist students by providing them with a multi-sensory experience when learning new words. The use of speech also ensures that students know how to say the word they are looking at, consequently eliminating incorrect learning.

The use of CTD procedures was shown to be an effective way to teach vocabulary. With students reaching 100% accuracy within three to four days of instruction, and students maintaining word knowledge fourteen weeks later, CTD shows promise as a quick and efficient method to increase students' vocabulary knowledge. Unfortunately, because only one study utilized this approach with a limited number of words, the effects of teaching children a new set of ten words every four days and expecting retention of those words has yet to be explored.

The use of video anchors to reinforce instruction of word meanings had mixed results. It proved to be a more effective technique for students in general education than for students with learning disabilities; however, there was no difference between the general education classroom group that received video anchors with instruction and the group that received only instruction. Again, only one study explored the use of this technique, so its efficacy as an effective vocabulary intervention remains undetermined.

Learning vocabulary through casual conversation was found to be an effective instructional strategy; however, results varied with the student's age. Younger students understandably require more teacher-directed instruction because they have limited experience with sophisticated words compared to their older peers. When one considers this study in conjunction with the read-aloud literature, it becomes evident that the type of talk, experiences, and stories students are exposed to is fundamental to their vocabulary growth. Learning words through casual conversation and exposure has also been proposed by Nagy and Anderson (1984) as an explanation of how students' vocabularies grow when direct instruction of vocabulary is limited.

Direct instruction is, by far, the most researched approach to vocabulary learning. The variety of direct instruction techniques investigated, in addition to the level of intensity required by each approach, provides a glimpse into the level of sophistication needed to teach novel words successfully. Studies investigating direct instruction approaches to word learning have documented the effectiveness of simply teaching students the meaning of words. Unfortunately, however, direct instruction of word meanings is responsible for only a limited number of words in a student's total annual word gain (Nagy & Anderson, 1984). Therefore, direct instruction may have greater impact if combined with other instructional approaches.

The keyword strategies discussed above demonstrate that this technique can be used successful to teach vocabulary. Keyword strategies utilize a multi-sensory approach requiring students to learn a word in context with a picture, definition, or similar word. The method gives students a tangible experience with a word and allows a deeper understanding of the word's meaning. Research also suggests, however, the importance of using words that have more concrete associations when using the keyword approach.

Limitations of Vocabulary Intervention Literature

Although findings from vocabulary literature indicate that there are a variety of interventions with the *potential* to improve word knowledge, a major limitation is the absence of well-formulated and consistent lines of research. This review identified six different intervention types that were successfully used to teach vocabulary; however, none has been studied in depth. In addition, only half of the studies collected maintenance data and none included information on generalization. Considering the enormous impact vocabulary has on academic achievement (Hart & Risley, 1995),

finding empirically sound methods to teach and maintain vocabulary is critical if we are to assist all students in becoming proficient readers (Koury, 1996).

Perhaps the biggest limitation of the research discussed above is that the literature search resulted in no empirical studies conducted in the primary grades. Hart and Risley's (1995) work clearly indicates that a child's vocabulary knowledge in kindergarten is directly correlated with his/her academic achievement in third grade. More research needs to be conducted during the early school years to determine effective vocabulary methods for young elementary grade children. Waiting to begin formal instruction until the later elementary years -- when students transition from learning to read to reading to learn -- is too late to resolve vocabulary deficits.

Finally, the dependent measures utilized to determine student success in the reviewed studies favored CBA. Although instruction in vocabulary is highly specific to individual words, and CBA has repeatedly been found to be an effective method of intervention efficacy (Stecker & Fuchs, 2000), some notable researchers advocate that a child's performance on a standardized measure is one of the most important indicators of intervention effectiveness (Torgesen, Rashotte, & Alexander, 2001). Students not only need to demonstrate knowledge of the specific curriculum material presented (via CBA), but also need to demonstrate exponential progress in an effort to close the achievement gap found between themselves and their peers. This progress may be best measured through standardized assessments (Deeney, Wolf, Goldberg O'Rourke, 2001).

Research suggests that early intervention in vocabulary is critical for children identified at-risk of reading difficulties. While we know the fundamental components of what students need for vocabulary instruction, we do not have definitive answers

regarding which combination of approaches promotes greater acquisition of vocabulary for students in the primary grades, and especially for students who are at-risk of reading failure. The specific focus of this study examines the added benefits of explicit vocabulary instruction as an extension of story read-alouds to children in primary grades.

What We Know about Read-aloud Experiences and Vocabulary Instruction

The reviewed literature demonstrates that young children can be taught vocabulary through read-aloud experiences and provides us six main conclusions. First, receptive vocabulary develops before expressive vocabulary. Children must be exposed to a word multiple times to become comfortable using it in their expressive vocabulary. Second, although one storytelling event is enough to increase a child's acquisition and use of novel vocabulary words, multiple storytelling events produce even better results. Third, the symmetric use of illustration and text is important for children to acquire novel concepts in order to understand relevant vocabulary. Fourth, elements such as the number of times a word is encountered, the context cues surrounding the word, the word's necessity to the meaning of the story, the familiarity of the concept the new word is trying to convey, and the concreteness of the concept being introduced all impact a child's acquisition of a word. Fifth, active child participation and the techniques employed by the reader (such as asking "why" questions) may play a role in a child's increased use of new vocabulary words. This active retrieval of words may also be important for the development of expressive vocabulary. Finally, extreme differences between language and vocabulary are evident as early as kindergarten, and possibly even earlier (Hart & Risely, 1995). Like the Matthew Effects observed in reading, children

with stronger vocabularies prior to a storytelling event are more likely to learn new words introduced during the story.

Vocabulary interventions for upper elementary students provide some guidance as to what constitutes effective vocabulary instruction. Although a variety of techniques are available (e.g., keyword strategies, direct instruction), none has been empirically validated for primary-aged children. Consequently, taking instructional methodologies that are proven effective with elementary students and adapting them for primary students appears to be a logical starting point to explore vocabulary interventions for younger children.

Contribution of the Current Study

Results from this study contribute to our understanding of vocabulary instruction for students in the primary grades who are at-risk of reading failure. The intervention applies what we know about the powerful effects of reading stories to children and the importance of vocabulary knowledge to future academic achievement. This study also addresses several limitations in the current empirical literature.

Previous research in read-aloud vocabulary instruction has focused on one-on-one instruction with students who are typically achieving (Eller et al., 1998; Leung, 1992; Senechal, 1997; Senechall & Cornell, 1993). The current study is designed for small-group instruction for those students identified as needing intensive vocabulary instruction (i.e., at-risk for reading failure), as this mirrors what typically occurs in schools. Additionally, the present study focuses on developing explicit vocabulary instruction techniques for children in first grade utilizing narrative and expository storybooks and talk as the primary catalysts of instruction. Previous contributions to the literature have

focused on incidental word learning with narrative storybook only with pre-school age children.

Although using children's literature as the primary vehicle for explicit vocabulary instruction is not well documented in the literature, it has been proven to be a fundamental source of incidental word learning for young children (Eller et al., 1988; Elley, 1989; Senechal & Cornell, 1993; Stahl, 1986; Stahl et al., 1990). The variety and complexity of vocabulary found in children's books (Hayes & Ahrens, 1988) and the natural use of these resources by teachers provide a logical place to begin evaluating the effects of explicit word learning from children's literature on a student's vocabulary.

Finally, the current study proposes to evaluate word knowledge utilizing CBA and standardized assessments to demonstrate that the achievement gap found between typically-achieving students and those who are at-risk of reading failure can be closed with systematic, intensive, explicit instruction that utilizes judicious review.

Table 1

Summary of Reviewed Studies—LD

Citation	Sample, Setting, and Design	Purpose	Vocabulary Intervention	Dependent Measure	Results
Boettcher (1983) Study 1	28 students with LD (gender N/A) Grades 4-6 Self-contained classroom One group pre-/post- test design	Determine the effectiveness of a computer-based reading program designed to provide diagnoses and practice in five comprehension skill areas.	CAI (<i>Reading Comprehension System</i>) is computer software designed to refine individual reading and vocabulary skills. Students individually work at a computer that introduces new vocabulary prior to presenting a reading selection. As each level is successfully completed, a more difficult set of vocabulary words is introduced with a correspondingly difficult reading selection. There are a total of six levels. Students participated in two, 4 1/2 hour sessions per week for 9 weeks.	Vocabulary subtest of the California Achievement Test (CAT) CAT used as the pre- and post-test.	Average gain for all students was close to over a year's gain Vocabulary growth range 4 months to 2 years 4 months

Table 1 (*continued*)

Citation	Sample, Setting, and Design	Purpose	Vocabulary Intervention	Dependent Measure	Results
Condus, Marshall, Miller (1986)	60 students with LD (48 male, 12 female) Grade: Elementary Resource room; small group Four group pre-/post- test design	Determine the effectiveness of a keyword mnemonic strategy and two alternative strategies on vocabulary acquisition and maintenance.	4 groups were provided with different vocabulary instruction. Group 1, Keyword-Image: Students were shown a word and taught a keyword associated with the vocabulary word. Students were then shown an image that depicted the definition of the keyword. Students practiced the strategy by seeing the words on flashcards and recalling the illustration and keywords. Group 2, Picture Context: Students studied flashcards that contained a word, a definition, and a picture of the word's meaning. Students practiced the strategy by seeing the word on a flashcard and recalling the picture. Group 3, Sentence-Experience Context: Students learned words by following two steps. First, the teacher read a sentence that contained the vocabulary word and students repeated the sentence. Second, students were asked a question that required them to relate the meaning of the target word to their personal experiences. Control: Students were told to learn the words. Students participated in 20-minute sessions; 3 times per week for 5 weeks.	Researcher created 50- item multiple choice test used at all assessment points. A 10-item multiple choice test was given at the end of each instructional session and at the week's end. A maintenance assessment of all 50 words occurred 2 weeks after the intervention concluded. A follow-up assessment of all 50 words occurred 8 weeks after the maintenance assessment concluded.	Students in the keyword condition outperformed all other conditions across all four assessment periods.

Table 1 (*continued*)

Citation	Sample, Setting, and Design	Purpose	Vocabulary Intervention	Dependent Measure	Results
Herbert & Murdock (1994)	3 students with LD (3 male) Grade 6 Resource room Alternating treatments design	Compare the effectiveness of three CAI output modes on student vocabulary gains.	Each student was exposed to three different CAI conditions, CAI with no speech, CAI with digital speech, and CAI with synthesized speech. 75 vocabulary words (25 per condition) were introduced, defined and used in a sentence. At the end of each session, the student took a multiple-choice test that was administered with no speech. Baseline data were collected using "no speech" and were collected for 3 days. Each student was then exposed to each condition for 6 sessions.	25-item multiple-choice test administered by the computer at the end of each session.	All students performed better using CAI w/ speech. Two students did better with synthesized speech. One student did better with digital speech but had previous experience with digitized CAI.

Table 1 (continued)

Citation	Sample, Setting, and Design	Purpose	Vocabulary Intervention	Dependent Measure	Results
*Koury (1996)	123 students 19 students with LD (14 male, 5 female) Grade 5 Library Three group post-test only	Determine the effectiveness of using extensive discussion and videodisk anchors to improve science vocabulary of students with and without LD.	Students in an inclusive science class were divided into three groups and were taught vocabulary either through discussion only or through discussion and the use of videodisk anchors. Videodisk anchors were short segments taken from the movie <i>Fern Gully</i> that used the targeted vocabulary. Group 1 (Students in general education): Taught vocabulary using discussion only. Group 2 (Students in general education): Taught vocabulary using discussion and videodisk anchors. Group 3 (Students with LD): Taught vocabulary using discussion and videodisk anchors. The lessons took place for 40 minutes per day for 3 days.	Paper/pencil test requiring students to define and provide one example for each of 10 terms.	Students in general education (Groups 1 and 2) significantly outperformed students with LD on the written test. There were no significant differences between the general education groups (Groups 1 and 2). Videodisk anchors were not an effective means by which to teach vocabulary to students in general education or for students with LD.

Table 1 (continued)

Citation	Sample, Setting, and Design	Purpose	Vocabulary Intervention	Dependent Measure	Results
Pany, Jenkins (1978)	6 students with LD (1 male, 5 females) 4 Grade 4 2 Grade 5 Self-contained classroom: resource room Repeated measures, randomized block factorial design where students served as their own control	Determine the effectiveness of three instructional procedures to teach word meanings.	Six students, each serving as their own control, participated in three different vocabulary interventions. Intervention 1, Meanings from Context: No direct instruction; word meanings were acquired from context. Group 2, Meanings Given: Students were told meanings of words during oral reading. Group 3, Meaning Practiced: Students were directly taught the meanings of the words prior to reading. Maintenance of vocabulary knowledge was assessed 3 to 8 weeks later.	6-item isolated oral vocabulary test; knowledge of word meanings. 6-item vocabulary context test. Six sentences using target words; supply meaning or synonym.	Group 3, meaning practiced, had superior performance on the isolated oral vocabulary assessment, demonstrating a significant treatment effect at post-test and maintenance. Group 3 also demonstrated a significant treatment effect on the vocabulary in context measure at post-test. Significant changes in mean scores pre- to post-test were found for Groups 2 and 3.

Table 1 (*continued*)

Citation	Sample, Setting, and Design	Purpose	Vocabulary Intervention	Dependent Measure	Results
Pany, Jenkins, Schreck (1982) Study 2	6 students with LD (2 males, 4 females) 4 Grade 4 & 5 2 Grade 6 Self-contained classroom: resource room Repeated measures, randomized block design where students served as their own control.	Evaluate three different teaching procedures typically used to teach vocabulary with students with LD.	Six students, each serving as their own control, participated in four different vocabulary interventions. Group 1, Meanings from Context: No direct instruction. Students read a sentence with target word and then a second sentence containing a synonym. Group 2, Meaning Given: The meaning of the word was given to the students within the context of a sentence. Group 3, Meanings Practiced: Students read from a flashcard and were told the meaning of word by the researcher. Students were then asked to repeat the definition. Group 4, No Meaning: Students read the words from flashcards. Maintenance of vocabulary was assessed 2 weeks after intervention ended.	Isolated-Word Vocabulary Test: Student read each word orally and gave a definition. Multiple-Choice Vocabulary Test: Word was provided with 4 synonym options. Sentence Paraphrase Test: Students read sentences and restated the sentence without using the target word. Sentence Anomaly Test: Students were given a 96-item test and asked to place a + next to sentences that made sense.	No significant gains for Groups 1 and 4. Group 2 showed significant effects on the Isolated word and multiple choice measures Group 3 showed significant pre-/post-test gains all dependent measures except on the Isolated word test at maintenance where a complete loss of intervention effects was noted. Overall, Group 3, meanings practiced, was the most effective instructional procedure for teaching synonyms. In comparison to students in general education, students with LD appear to acquire fewer words in each condition. Retention of words with student with LD was depressed in comparison to students in general education.

Table 1 (*continued*)

Citation	Sample, Setting, and Design	Purpose	Vocabulary Intervention	Dependent Measure	Results
Shuster, Stevens, Doak (1990)	3 students with LD (2 male, 1 female) Grade 5 Resource room Multiple probe design across students, replicated across word definitions	Determine the effectiveness of a constant time delay procedure in teaching word definitions.	Students were taught the meanings of new words (two sets of five words) using a 0-second time delay, which gradually increased to a 5-second time delay.	Teacher judgment and scoring of student accuracy. Teacher graphed all data.	All students reached criterion (100% accuracy) w/in 3-4 days. Students maintained words at 6, 10, and 14 weeks after intervention ended

Table 1 (continued)

Citation	Sample, Setting, and Design	Purpose	Vocabulary Intervention	Dependent Measure	Results
*Uberti, Scruggs, Mastropieri (2003)	74 students 12 students with LD (gender N/A) Grade 3 General education classroom Three groups pre-/post-test design	Investigate the benefits of using a keyword method in a general education classroom to increase vocabulary knowledge of students with and without LD.	Students in inclusive classrooms participated in a one- day intervention where they were taught ten new words found in a book they were going to read. Three classrooms participated, each using a different keyword strategy. Class 1: Students studied flashcards containing a new word, keyword, picture, and definition. Class 2: Students studied flashcards containing a new word, picture, and definition. Class 3: Students studied flashcards containing a new word and its definition. They listened to the story being read and then discussed it in groups.	Teacher created pre- /post-test included 10 definitions with a word bank.	Students with LD benefited most from keyword strategy condition. Students with LD post-test performance outperformed students in general education. Students with LD in Class 3 remembered twice as many words as students in Class 1. Students in general education made similar gains across all conditions.

Note. An * indicates that this study includes students in general education and students with LD.

Table 2

Summary of Reviewed Studies—General Education

Citation	Sample, Setting and Design	Purpose	Vocabulary Intervention	Dependent Measure	Results
Brett, Rothlein, Hurley (1996)	175 students (gender NA) 4th grade General education classroom read-aloud time Three groups pre- /post-test design.	Compare the effects of three storytelling conditions on the acquisition of vocabulary.	Two books, <i>Bunnicula</i> and <i>The Reluctant Dragon</i> , were read to students over the course of 10 days (five days for each book). The day before the reading began, students were given a pretest that consisted of 10 vocabulary words located in the book. Classes were assigned to one of three interventions. Class 1, Story with word explanation: Teachers read a story and explained targeted vocabulary when encountered in text. Class 2, Story only: Teacher read the story only providing no further discussion regarding vocabulary. Class 3, Control: No exposure to stories or words. Maintenance data were collected 6 weeks after the second book was finished.	Researcher created 10-item multiple-choice vocabulary test (one for each book).	Students in Class 1 made significantly more progress from pre- to post-test and at maintenance than the other two groups. Effects held constant for both books.

Table 2 (continued)

Citation	Sample, Setting, and Design	Purpose	Vocabulary Intervention	Dependent Measure	Results
Drum, Madison (1985)	10 students (6 males, 4 females) 4 age 12 3 age 9 3 age 7 Private reading center; small group Pretest/ delayed post- test design	Examine the effects upon the quality of meaning acquired by students after exposure to words and their meaning in a conversational context.	Tutors were asked to introduce 10 words related to the seashore to their students. Each tutor spent 20 minutes engaging their group of students in an informal discussion about the words. Students were pre- and post-tested (delayed) on their knowledge of the words. Groups were videotaped to determine how many word references the tutor and the students made. Post-test occurred three weeks after the conversation occurred.	Pre-/post-test of vocabulary meaning. Researcher stated word and asked for child to "tell everything they knew about the word." Answers were transcribed.	Older students provided more accurate responses at pre- and post-test than younger students and contributed more to class discussion. Younger students required more teacher- directed information and were limited in contributing to the class discussion. One teacher chose to show pictures instead of having a group discussion about the words. Students in this group made overt errors on the post-test.

Table 2 (continued)

Citation	Sample, Setting, and Design	Purpose	Vocabulary Intervention	Dependent Measure	Results
Jenkins, Matlock, Slocum (1989)	135 students (gender N/A) Grade 5 General education classrooms Six-group selected pre-/ post-test design	Examine two approaches to vocabulary instruction (instruction in individual word meanings, and instruction in deriving word meanings), with varying amounts of instruction and practice.	Individual meanings/low practice: 9 days of instruction, 1 exposure to each word, 45 words. One set of words was introduced each day. Individual meanings/medium practice: 11 days of instruction, 3 exposures to each word. One set of words was introduced each day and subsequently reviewed until the number of exposures required was achieved. Individual meanings/high practice: 20 days of instruction, 6 exposures to each word One set of words was introduced each day and subsequently reviewed until the number of exposures required was achieved. Derived meanings/low practice: 9 days of instruction, 1 exposure to each word, 45 words. Derived meanings/medium practice: 11 days of instruction; 1 exposure to each word, 135 words. Derived meaning/high practice: 20 days of instruction, 1 exposure to each word, 270 words. In the derived meaning groups teachers solicited hypotheses from students as to what words meant and helped students check their hypothesized meanings against the context of sentences provided.	*Word-in-isolation test. Student wrote a synonym or definition. *Word-in-context test. Word was provided in context and student then provided a synonym or definition. Multiple-choice test. Student chose a definition from four distracters. Contrived context test. A nonsense word (replacing the target word appeared in 2 sentences). Students had to derive meaning of the nonsense word. Basal context test. Sentences from a basal reader using the targeted vocabulary words were selected. Students had to derive meaning of the word through its context. *Used as the pretest measure.	On all four test of vocabulary knowledge, individual meanings groups outperformed the derived meanings groups. On the contrived context test, the derived meanings group achieved higher scores. More practice was marginally significant favoring medium and high groups. On the basal context test, the derived meanings group achieved higher scores. Medium practice group performed best.

Table 2 (continued)

Citation	Sample, Setting, and Design	Purpose	Vocabulary Intervention	Dependent Measure	Results
Gipe (1979)	171 students (89 males, 89 females) 93 Grade 3 78 Grade 5 General education classroom Repeated measures, Latin square design	Examine the effectiveness of 4 methods of teaching word meanings	8 classrooms were evenly divided across four different vocabulary interventions. Students participated in each condition for two weeks (12 words per week, 24 per condition, 96 total words) Class A, Association Method: Paired unknown words with a familiar synonym or brief definition. Class B, Category Method: Subjects add words to lists fitting a general category. Class C, Context Method: Subjects utilized target words in meaningful sentences. Asked a question requiring student to write an answer demonstrating understanding of the target word. Class D, Definition Method: Subjects looked up target words in the dictionary, wrote definitions, and wrote sentences containing each new word.	Researcher created 12-item vocabulary test at week's end. Pre-/post-test: Researcher created 96- item multiple-choice test requiring the student to select the sentence in which the target word was used correctly.	Strong method effects for 3rd & 5th graders with Class C, Context Method, demonstrating significant results (effects valid across what teachers considered good and poor readers) Association method was second best method for 3rd & 5th graders Significant improvement in vocabulary knowledge pre-/post-test for 3rd & 5th graders

Table 2 (continued)

Citation	Sample, Setting, and Design	Purpose	Vocabulary Intervention	Dependent Measure	Results
*Koury (1996)	123 students 19 students with LD (14 male, 5 female) Grade 5 Library Three group post-test only	Determine the effectiveness of using extensive discussion and videodisk anchors to improve science vocabulary of students with and without LD.	Students in an inclusive science class were divided into three groups and were taught vocabulary either through discussion only or through discussion and the use of videodisk anchors. Videodisk anchors were short segments taken from the movie <i>Fern Gully</i> that used the targeted vocabulary. Group 1 (Students in general education): Taught vocabulary using discussion only. Group 2 (Students in general education): Taught vocabulary using discussion and videodisk anchors. Group 3 (Students with LD): Taught vocabulary using discussion and videodisk anchors. The lessons took place for 40 minutes per day for 3 days.	Paper/pencil test requiring students to define and provide one example for each of 10 terms.	Students in general education (Groups 1 and 2) significantly outperformed students with LD on the written test. There were no significant differences between the general education groups (Groups 1 and 2). Videodisk anchors may not be an effective means to teach vocabulary to students in general education or for students with LD.

Table 2 (*continued*)

Citation	Sample, Setting, and Design	Purpose	Vocabulary Intervention	Dependent Measure	Results
Levin, Levin, Glasman, Nordwall (1992) Study 3	53 students (gender N/A) Grade 4 Small groups outside of regular education classroom. Two group comparison design.	Determine whether small-group mnemonic vocabulary instruction would be effective for younger students; whether mnemonic instruction was helpful for two different types of vocabulary words (obvious to derive keywords and not- obvious).	Students were removed from their classroom to receive small group instruction in one of two interventions. Group 1: Taught how to use the keyword mnemonic strategy and practiced using the strategy with 3 examples. They were then given the list of 16 words to study independently (students made up their own keywords). Group 2: Students were asked to write a sentence that used the target words in a definitional context. Eight obvious-to-derive-keyword vocabulary words and eight not-obvious-to-derive-keywords vocabulary words were used. After approximately 20 minutes of studying, students were given a post-test. Seven to nine days later, students were assessed for maintenance of the words.	16-item test, students required to write the definition of each vocabulary word. Same test used as the immediate and delayed measure.	Students in Group 1 recalled more definitions (statistically significant) on the post-test and maintenance test. A statistically significant difference was found with Group 1 between their ability to remember obvious- and not-obvious- keyword words. There was no difference in Group 2 between obvious and non-obvious words.

Table 2 (continued)

Citation	Sample, Setting, and Design	Purpose	Vocabulary Intervention	Dependent Measure	Results
McKeown, Beck, Omanson, Pople (1985)	# of students not given Grade 4 Public school general education classrooms Four group comparison group design	Identify the contribution of the nature of instruction and the frequency of encounters in bringing about word knowledge proficiency.	Four classrooms were assigned to one condition: Class 1, Rich instruction: Identified relationships between words, respond to words affectively and cognitively, and apply words to various contexts. Class 2, Extended/Rich Instruction: Same as Classroom 1 in addition to a Word Wizard game, which prompted students to use the words outside of class. Class 3, Traditional: Make simple associations between words, definitions, and synonyms. Class 4, Control: No instruction. Instruction in Classes 1, 2 and 3 consisted of twelve lessons that lasted 30-minutes each for 12 weeks.	*Vocabulary Knowledge: 12-item multiple-choice test Semantic Decision: Determine if target word corresponded with the definition read by the examiner. 36 target words presented. Student pushed a yes/no button. Measured accuracy and latency Context Interpretation: 16 sentences presented and student needed to indicate if the target word was used correctly by answering an open-ended question *Used as pretest	Vocabulary Knowledge -No instructional differences among instructional groups. -On the post-test children receiving instruction knew more words than the children receiving no instruction. -High-frequency instruction groups knew more words than low-frequency instruction groups. Fluency (Latency): -Classroom 2 had faster reaction times. -High-frequency words were produced more quickly than low-frequency words. Context Interpretation: -Classrooms 1 & 2 performed the same but greater than Classrooms 3 & 4. -More sentences answered about high- frequency words than low-frequency words.

Table 2 (continued)

Citation	Sample, Setting, and Design	Purpose	Vocabulary Intervention	Dependent Measure	Results
Meyer & Cohen (1975)	130 students (gender N/A) Grade 4 Private School: High- Intensity Learning Center Two group pre-/post- test design	Examined the effects of direct instruction of vocabulary with tradebook reading.	Students were divided between two instructional groups: Group A: received intensive vocabulary instruction focusing on skills (prefixes, suffixes, compound words, synonyms, antonyms, etc.). Group B: was prescribed intensive tradebook and general reading activities focusing on skills (main ideas, predictions, sequence, etc.). Instruction in each condition lasted 60 hours over 18 weeks.	Two standardized vocabulary subtests SRA Achievement & Stanford Achievement	Group B had higher means when comparing raw scores but there were no significant differences between groups.

Table 2 (continued)

Citation	Sample, Setting, and Design	Purpose	Vocabulary Intervention	Dependent Measure	Results
Pany, Jenkins, Schreck (1982) Study 1	12 students (4 males, 8 females) Grade 4 Isolated instruction Repeated measures; randomized block design where students served as their own control	Evaluate the effects of three teaching procedures typically employed to improve vocabulary.	Twelve students, each serving as their own control, participated in four different vocabulary interventions. Group 1, Meanings from Context: No direct instruction. Students read a sentence with target word and then a second sentence containing a synonym. Group 2, Meaning Given: The meaning of the word was given to the students within the context of a sentence. Group 3, Meanings Practiced: Students read from a flashcard and were told the meaning of the word by the researcher. Students were then asked to repeat the definition. Group 4, No Meaning: Students read the words from flashcards. Maintenance of vocabulary was assessed 2 weeks after intervention ended.	Isolated-Word Vocabulary Test: Student read each word orally and gave a definition. Multiple-Choice Vocabulary Test: Word was provided with 4 synonym options. Sentence Paraphrase Test: Students read sentences and restated them without using the target word. Sentence Anomaly Test: Students were given a 96- item test and asked to place a + next to sentences that made sense.	Group 3, Meanings Practiced, was the most effective in teaching students vocabulary words. Group 3 outperformed other groups on maintenance measures.

Table 2 (continued)

Citation	Sample, Setting, and Design	Purpose	Vocabulary Intervention	Dependent Measure	Results
Stahl (1983)	28 students (gender N/A) Grade 5 General education classroom; taught by investigator 3x3 factorial design using repeated measures analysis of variance	Determine whether a mixed method of learning would promote better vocabulary than a definitional method.	Students were randomly assigned to three groups: Group A, Definitional: Definitions were provided to students. Students had to restate comprehension of the definition in their own words. Group B, Mixed: Definitions were provided along with sentences using the targeted word. Students discussed the words and sentences and then created their own sentences. Group C, Control: Completed a skills workbook. Students received their respective intervention for three weeks.	Multiple-choice vocabulary test given two weeks after intervention ended.	Groups A and B were more effective interventions than Group C; however, there were minimal treatment differences between Groups A and B. All subjects forgot words over time.

Table 2 (continued)

Citation	Sample, Setting, and Design	Purpose	Vocabulary Intervention	Dependent Measure	Results
*Uberti, Scruggs, Mastropieri (2003)	74 students 12 students with LD (gender N/A) Grade 3 General education classroom Three groups pre-/post-test design	Investigate the benefits of using a keyword method in a general education classroom to increase vocabulary knowledge of students with and without LD.	Students in inclusive classrooms participated in a one-day intervention where they were taught ten new words found in a book they were going to read. Three classrooms participated, each using a different keyword strategy. Class 1: Students studied flashcards containing a new word, keyword, picture, and definition. Class 2: Students studied flashcards containing a new word, picture, and definition. Class 3: Students studied flashcards containing a new word and its definition. They listened to the story being read and then discussed it in groups.	Teacher-created pre-/post- test included 10 definitions with a word bank.	Students made similar progress across all three conditions. Best performance in the Keyword strategy followed by the definition and picture. On average, scored lower than students with disabilities in the Keyword condition.

Note. An * indicates that this study includes students in general education and students with LD.

CHAPTER III

METHOD

Context of the Study

Teaching all children to read by third grade has become one of the primary goals of educational reform. The effects of early reading failure are clearly documented (Adams, 1990, Hart & Risley, 1995, Stanovich, 1986) and are evident long before a child enters school (Hart & Risley, 1995). Without immediate early intervention, the academic differences that emerge between children continue to grow until they are practically impossible to ameliorate (Baker, Simmons, & Kameenui, 1998; Biemiller, 2001; Stanovich, 1986).

To investigate effective methodologies for remediating comprehension deficits, the U.S. Department of Education's Office of Educational Research and Improvement awarded the Pacific Institutes for Research a grant to develop an innovative approach to promote comprehension and vocabulary in first-grade classrooms through story read-alouds (Baker, Chard, Edwards, 2002). The Story Read Aloud Project's instructional framework focuses on helping children develop an understanding of narrative and expository text. Procedures involve dialogic interactions among students and teachers, visually representing text elements (e.g., KWL charts), and strategic vocabulary instruction.

Specifically, the Read-aloud Curriculum includes nine thematic units that are designed to be implemented over eighteen weeks of instruction. Each unit focuses on a species of animal or includes specific examples of animals of a particular species. For example, Units 1-3 focus on the theme of mammals. Unit 1 covers the general topic of

mammals, while Units 2 and 3 examine specific types of mammals such as bats and elephants. There are seven lessons in each unit and each lesson is designed to take approximately 20 to 30 minutes. The first three days of a unit's lessons use an expository text to teach the critical features of a species or characteristics of a specific animal. The next four days use a narrative text related to the target species or specific animal from the unit.

For example, in Unit 1, lessons for the first three days use an information text to teach students about the characteristics of mammals. Lessons for days 4-7 use a narrative text that features a character that is a mammal (i.e., a bear). For Unit 2 (Bats) and Unit 3 (Elephants) -- specific animals that are mammals -- lessons on days 1-3 use informational text to teach the specific characteristics of the animal and what characteristics make the animal a mammal. Lessons on days 4-7 use a narrative text that features the animal character discussed in days 1-3 of the information text. The lesson themes (mammals for Units 1-3, reptiles for Units 4-6, and insects for Units 7-9) each use one information text (days 1-3) and one narrative text (days 4-7). Therefore, a framework for repeated readings or the continued use of one text over multiple lessons is used throughout the curriculum.

Overall, the Story Read Aloud curriculum's instructional goals are to help students:

- Identify the purpose for reading (e.g., Are you reading an information or narrative text?)
- "Summarize" a story or informational text through the use of retelling strategies.

- Note specific details of a story or information text using a consistent framework (e.g., story grammar, KWL).
- Use a self-monitoring strategy during read-alouds that results in question-asking if text or vocabulary is not understood.
- Use target vocabulary in specific discussions about text and in general daily conversations.
- Make connections between texts (e.g., note similarities and differences between characters, events, setting, and details in information text).
- Make personal connections to the story or information text.

Table 3

Story Read Aloud Units

	Unit 1	Unit 2	Unit 3	Unit 4	Unit 5	Unit 6	Unit 7	Unit 8	Unit 9
Topic	Mammals	Bats	Elephants	Reptiles	Crocodiles	Sea Turtles	Insects	Butterflies	Ladybugs
Informational Text (Lessons 1-3)	<i>Mammal</i>	<i>Bats</i>	<i>What is an Elephant?</i>	<i>What is a Reptile?</i>	<i>The Crocodile</i>	<i>Sea Turtles</i>	<i>Insects</i>	<i>Monarch Butterflies</i>	<i>Ladybugs</i>
Narrative Text (Lessons 4-6)	<i>Bear Snores On</i>	<i>Stellaluna</i>	<i>How the Elephant Got its Trunk</i>	<i>Lizard's Home</i>	<i>Bill and Pete</i>	<i>Albert's Impossible Tooth-ache</i>	<i>The Bugliest Bug</i>	<i>Butterfly Boy</i>	<i>The Grouchy Ladybug</i>

The Story Read Aloud curriculum is being implemented in a whole-class context for eighteen weeks from November 2004 to April 2005. Teachers have some flexibility in implementing the curriculum and are given two weeks to implement seven lessons; however, the beginning of each unit is dictated by the Story Read Aloud calendar.

Because previous research has indicated that multiple exposures to stories lead to greater academic gains (Eller et al., 1988; Elley, 1989; Stahl, 1986), the use of repeated readings of both informational and narrative text is central to this curriculum.

Additionally, teachers utilize strategic dialog (Nino, 1980, Senechal & Cornell, 1993) to highlight curriculum content, including vocabulary, story elements (e.g., setting), and animal facts. Fidelity for the implementation of the Story Read Aloud curriculum in first-grade classrooms was calculated at 72.3% (57%-89%).

The current study, *Teaching Vocabulary from Narrative and Information Text: Examining the Effects of Instructional Intensity and Judicious Review on the Vocabulary and Reading Comprehension Performance of First-Grade Children At-Risk of Early Reading Difficulties*, was implemented during the third year of the Story Read Aloud Project. This study investigated the effects of instructional intensity and judicious review -- with a "Booster Session" focused on vocabulary instruction -- on the vocabulary and expressive language performance of first-grade children at-risk of reading difficulties. It is important to note that the students participating in the third year of the Story Read Aloud curriculum (and Booster Sessions) have not participated in the Story Read Aloud curriculum in previous years, as the Story Read Aloud Project is not a longitudinal study.

Participants and Setting

Subjects. Participants in this study included 66 first-grade students in five elementary schools (eleven classrooms) in a Lehigh Valley, Pennsylvania, school district. According to recent demographic data obtained from the participating district, there were 5,697 students enrolled in grades K-12 for the 2004-2005 academic year, with 793 (13.9%) living in poverty. The majority of the students (95%) in the district are Caucasian.

Intervention Group. In an effort to specifically identify students with potential reading difficulties, children identified as being at-risk of reading difficulties (i.e., those scoring in the lowest 20% on beginning reading measures) were selected to participate in the intervention group. Four students per class who met this criterion were randomly chosen and assigned to either the Booster Session or the No Booster Session.

Average-Achieving Peer Comparison. Three students per class who scored *Established* as measured by the Dynamic Indicators of Basic Early Literacy Skills (DIBELS) (Kaminski & Good, 1996, 1998) were randomly chosen and assigned to the average-achieving peer comparison group. This group was created for comparison purposes only to represent a random sample of students who were considered to have *average* beginning reading skills. These students did not participate in the Booster Sessions and were not members of the comparison group. The peer comparisons followed the same assessment schedule as the students who participated in the Booster Sessions.

The mean age of the 44 children who participated in the Booster and No Booster groups was 79.41 months, with a standard deviation of 5.19. The mean age of the 22

students who participated in the peer comparison group was 80.82, with a standard deviation of 5.78. An overview of student demographics is presented in Table 4.

Table 4

Student Demographics

Variable	Booster (N=22)	No Booster (N=22)	Peer Comparison (N=22)
Gender			
Male	15	14	8
Female	7	8	14
Ethnicity			
African American	1	1	1
Caucasian	20	21	21
Hispanic	1	0	0
Age in Months			
Mean (SD)	80.23 (4.89)	78.59 (5.48)	80.82 (5.78)
SES			
Low	4	3	4
High	18	19	18

Note. M = mean; SD = standard deviation

Setting. The Booster Sessions took place in an empty classroom at each school.

Subject Recruitment

District administrators and school principals granted permission to conduct this study during the 2003-2004 school year. Lehigh University Institutional Review Board approval was obtained at the start of the 2004-2005 academic year. Parents of the students identified to participate received letters describing the project's goals and assessment procedures and signed informed consent letters for all students participating in the Booster, No Booster and Peer Comparison groups. Student assent letters were also obtained, indicating that each student was willing to participate in the study (Appendix A). Guidelines for human subjects' protections were strictly followed.

Subject Selection and Assignment to Treatment Conditions

To qualify for participation, a child must score *at-risk* of reading failure as measured by the DIBELS. Selection of participants included a review of district DIBELS scores and teacher verification. Students were considered for the study if they scored as having "some risk" for early reading difficulties utilizing Story Read Aloud DIBELS benchmarks, which include Phonemic Segmentation Fluency (PSF; less than 30) and Nonsense Word Fluency (NWF; less than 30) (Baker, Chard, Edwards, 2002-2005). Four students from each classroom were selected for participation and randomly assigned to either the Booster or No Booster conditions.

Dependent Measures

Students who met the inclusion criteria were administered two additional preliminary assessments: the Strong Narrative Assessment Procedure (SNAP; Strong, 1998) and the Storybook Vocabulary Assessment (SVA) (Puhalla, 2003). At the conclusion of the intervention, an alternate form of the SNAP (Strong, 1998) was

administered in addition to the original SVA. A schedule of assessments can be found in Table 5.

Table 5

Schedule of Assessment Activities

At-risk Screening (Bottom 20%)	Pre- intervention Screening	Post- intervention Assessment
DIBELS	SNAP: Fm 1	SNAP: Fm 2
PSF	SVA	SVA
NWF		

Note. DIBELS = Dynamic Indicators of Basic Early Literacy Skills; (PSF = Phonemic Segmentation Fluency, NWF = Nonsense Word Fluency; SNAP = Strong Narrative Assessment Procedure; SVA = Storybook Vocabulary Assessment.

Beginning Reading Skills

Dynamic Indicators of Basic Early Literacy Skills (Kaminski & Good, 1996, 1998). The DIBELS is a measure of beginning reading skills and is designed both to predict reading success and to identify children who may be at-risk of reading difficulties. The DIBELS subtests are individually administered and take only a few minutes to complete. The DIBELS for first grade consists of four subtests: Letter Naming Fluency (LNF), Phoneme Segmentation Fluency (PSF), Nonsense Word Fluency (NWF), and Oral Reading Fluency (ORF). First-grade DIBELS protocols recommend that the LNF, PSF, and NWF be administered at the beginning of the year. At the middle and end of

the year, LNF is dropped and ORF is added. The DIBELS are recognized as having validity for assessing the critical skills required for success in beginning reading (e.g., phonological awareness and alphabetic understanding) (Kaminski & Good, 1996, 1998).

Phonemic Segmentation Fluency. The PSF assesses a student's ability to segment fluently regular three-to-four phoneme words into individual phonemes. PSF is both a measure of phonological awareness and a strong predictor of later reading achievement. The PSF is an individually administered test during which an examiner orally presents words with three or four phonemes and the student responds by saying the individual phonemes in each word. For example, the examiner would say "mop," and students would say "/m/ /o/ /p/." The PSF measure is administered for one minute and a student's score is the total number of phonemes identified. Alternate form reliability for this measure is .88 (<http://dibels.uoregon.edu/index.php>).

Nonsense Word Fluency. The NWF measure determines the child's ability to identify letter-sound correspondences correctly and use that knowledge to read regular one-syllable VC/CVC words. Using nonsense words focuses on letter-sound knowledge and decoding by controlling students' sight word knowledge. During the NWF assessment, students are shown a piece of paper with randomly ordered VC/CVC nonsense words and then asked to read or sound out the words. Students are given one minute to identify as many nonsense words as possible. Alternate form reliability for this measure ranges from .67 to .87 (<http://dibels.uoregon.edu/index.php>).

Vocabulary

Storybook Vocabulary Assessment (Puhalla, 2003). The SVA assesses students' knowledge of the target words taught during the Story Read Aloud curriculum and

reinforced in the study's Booster Session. The SVA is a researcher-created, curriculum-based assessment that is individually administered. The SVA protocol is modeled after the Oral Vocabulary subtest of the Test of Language Development-Primary (TOLD-P:3) and requires a child to provide the meaning of a word after receiving a prompt such as, "What does the word *companion* mean?" Administrators of the assessment may provide two additional prompts per item in order to seek clarification of a student's response (e.g., "Tell me more about ____."). All nineteen words taught in the Booster Session and Story Read Aloud curriculum, approximately three from each story, were assessed with the SVA (see Appendix B). Words assessed on the SVA represented critical vocabulary that was necessary in understanding the text's meaning or a word students would be likely to encounter in future reading and content discussions. It is important to note that unlike the TOLD-P:3, there was no discontinue rule applied to the SVA. In other words, students were asked all words on the SVA and testing was not discontinued after five missed words.

Modified Eller Scoring Criteria. The SVA and vocabulary probes were scored using a modified version of the criteria designed in Eller et al. (1988) (Puhalla, 2003) (Appendix C). Eller's original scoring criteria contained five categories describing the depth of student word knowledge: Category 1: No knowledge, Category 2: Developing knowledge, Category 3: Synonym, Category 4: Accurate knowledge, and Category 5: Generalized knowledge. The criteria were revised by adding a category titled *Alternate definition* to more accurately reflect students' knowledge of targeted words. This category became the new Category 4, and Eller's Category 4, accurate knowledge, became the new Category 5. Eller's Category 5, generalized knowledge, then became

Category 6. It is important to note that the SVA and vocabulary probes were scored using the first five categories only, as there was no opportunity to generalize the meaning of the words.

Strong Narrative Assessment Procedure (Strong, 1998). The SNAP consists of four alternative versions that assess a variety of narrative discourse skills, including disfluencies, total utterances, story grammar, fluency, and comprehension. Students individually listen to a story on tape while following along with a wordless storybook. They are then asked to retell the story without the book and answer factual and inferential comprehension questions. For the current study, total utterances, comprehension and story grammar were the primary data of interest and are recognized as valid indicators of language and comprehension skills (Snow, Burns & Griffin, 1998). See Appendix D for the SNAP protocol.

Total Utterances. Total utterances were determined by counting the number of words used during a story retell or determining how long a student takes to retell the story. Disfluencies (e.g., using the word *like* as a delay or stalling technique) and unintelligible or made-up words were not counted in the total number of words. Contractions are counted as two words.

Comprehension. The comprehension score was determined by asking the child ten questions, five factual and five inferential. Students were first asked an open-ended question and then, if they were unable to answer the open-ended question or if they answer the open-ended question incorrectly, a series of yes-or-no questions was provided.

Story Grammar. Story grammar was determined by the child's references to the main character(s) and events (e.g., conflict, resolution) during the retell. Critical story elements are established by the SNAP protocol and were used as the scoring criteria.

Design

A pretest/post-test comparison group design with random assignment of subjects to groups was used to determine whether the Booster Session provided adequate vocabulary instruction for students at-risk of reading and language difficulties. The purpose of the study was to determine whether (1) there were vocabulary differences between students identified as at-risk who participated in the Booster Session and comparison group at the conclusion of the study, and (2) at-risk students from the Booster Session caught up to their average-achieving peers in expressive language tasks.

Independent Variable

The independent variable, the Booster Session, consisted of five highly structured 20-minute lessons per unit. Each lesson focused on a unit's target vocabulary words. Two teachers taught the Booster Sessions, one at two schools and the other at three, and each received a packet of materials and scripted lessons based on the vocabulary formats discussed in *Bringing Words to Life* (Beck et al., 2002).

Instruction in the Booster Session condition was implemented between mid-November 2004 and early January 2005 during the first three units of Story Read Aloud Project. All students participated in the Story Read Aloud curriculum in the regular education classroom. Students selected for the Booster Sessions attended a separate classroom session where the Booster Session teacher conducted the Booster Session

lesson. The intervention encompassed fifteen lessons totaling approximately 300 minutes of instruction.

Booster Sessions. Five Booster Sessions took place over the course of each unit and focused on the vocabulary from the narrative or information texts emphasized during that week's Story Read Aloud curriculum. The first and second Booster Sessions focused on the vocabulary words designated by the Story Read Aloud curriculum for the information book. The third and fourth Booster Sessions focused on the vocabulary words designated by the Story Read Aloud curriculum for the narrative book. The fifth Booster Session focused on a cumulative review, judiciously integrating previously taught words with the new words for the week. See Table 6 for the Booster Session Schedule.

It is important to note that review of previously learned vocabulary words was not limited to the fifth Booster Session. If a new vocabulary word could be linked with a previously learned word, the connection was made immediately in an effort to help students deeply process and internalize the new vocabulary words. For example, during unit three (i.e., elephants) the word *herbivore* was selected as a targeted word from the information book. In the previous unit (i.e., bats), the students learned that Stellaluna, the main character from the Bats narrative story, was also an herbivore—she was a fruit bat.

Table 6

Booster Session Format

First day of Unit	Day 2	Day 3	Day 4	Day 5	Day 6
No Booster	Booster 1: Introduce and reinforce target words from information story	Booster 2: Introduce and reinforce target words from information story	Booster 3: Introduce and reinforce target words from narrative story	Booster 4: Introduce and reinforce target words from narrative story	Booster 5: Integrated, judicious review of previously taught words with new words
	20 minutes	20 minutes	20 minutes	20 minutes	20 minutes

Booster Sessions 1 and 2. During the Booster Sessions, the teacher showed the information book the students were reading during their story read-aloud time in their classrooms. Next, the teacher engaged students in a discussion about events in the book that were specific to the targeted vocabulary while providing each word's meaning. Definitions provided to the students were the same as those taught during the Story Read Aloud curriculum. The instructional approach to defining and describing words was representative of the COBUILD approach, which explains words rather than providing obscure definitions (Stahl, 1999). For example, *delicate* is defined by *The American Heritage Dictionary* as:

(1) pleasing to the senses, especially in a subtle way, (2) exquisitely fine or dainty, (3) frail in constitution or health, (4) easily broken or damaged, (5) marked by sensitivity of discrimination, (6) considerate of the feelings of others, (7) requiring tactful treatment, (8) fine or soft in touch or skill, (9) keenly accurate in response or reaction, (10) very subtle in difference or distinction (p. 378).

However, the COBUILD definition of *delicate* is “Something that is delicate or fragile and needs to be handled carefully” (Stahl, 1999).

After explaining the target word, the teacher engaged the students in structured dialogic interactions by asking them to repeat the word’s definition and engaging in word-play games. The word-play games and activities required students to use the words in familiar ways with an added level of deep-processing (Beck et al., 2002). To encourage an extended level of thinking about words, the teacher asked the students not only to use and define words but also tell why (s)he used a particular word, whether (s)he could think of other words to use, and how the words related to each other. For example, the teacher might have defined *solitary* as “being all alone or by yourself,” and then asked the students to provide an example of when they had been solitary.

Booster Sessions 3 and 4. Booster Sessions on days 3 and 4 were identical to the procedures outlined above except that the book used for discussion was a narrative book.

Booster Session 5. On day 5, students participated in an integrated review of all of the words learned during the previous units and lessons.

Materials

Book Selection. Books used during the Booster Sessions were those already chosen by the Story Read Aloud curriculum. Refer to Table 3 for book titles.

Vocabulary Selection. Vocabulary words used during the Booster Session were the target words used by the Story Read Aloud curriculum for instruction. The target words were chosen because they were thought to be unknown to typical first-graders and considered critical to understanding the text. Overall, the target vocabulary words represent tier two and tier three word criteria used by Beck et al. (2002). In Unit 1 (mammals), for example, the words selected include *mammal*, *survive*, and *protect*. The words *survive* and *protect* would be considered tier two words, whereas the word *mammal* would be considered a tier three word.

Scripted lessons. Scripted lessons, activities, and materials were provided by the investigator to those teaching the Booster Sessions. See Appendix E for lesson samples.

Procedures

Teacher Training. Two teachers were selected to implement the Booster Sessions and administer the unit-end assessments. Teacher 1 was a graduate student who was currently enrolled in classes to obtain secondary certification in social studies. Teacher 2 was a newly certified elementary school teacher who was a preferred substitute in the district where the intervention took place. Both were novice teachers and had limited experience with first grade instruction.

The primary investigator conducted one half-day training for both teachers. Training sessions included an explanation of the rationale supporting the intervention's instructional design and provided opportunities for the teachers to practice using the intervention lessons and become familiar with the lesson formats and materials. The importance of teachers' promoting student engagement and verbal participation in every

lesson was emphasized. Training also involved demonstrating how to administer and score the SVA.

Research Assistants Training. Eight data collectors from the Story Read Aloud Project were recruited to collect fidelity of implementation data in addition to administering the SVA. One half-day of training was conducted on the use and scoring procedures for the fidelity measure and the administration of the final assessments.

Fidelity of Implementation. Eight research assistants (RAs) observed and documented the implementation of the Booster Sessions. A modified version of the Open Court Fidelity of Implementation Checklist (Edwards, 2000; Puhalla, 2003; Simmons et al., 2002) was used to determine whether the critical components of each lesson were implemented (see Appendix F). Fidelity was evaluated according to the presence or absence of each critical lesson component. A zero-to-two rating scale was utilized to assess the “adequacy” of implementation and a percentage of total components demonstrated was determined.

Fidelity of implementation was assessed seven times for each teacher, once during the first unit and three times each during the second and third units (46.7% of the lessons). RAs provided the investigator with the completed fidelity checklists immediately upon return from the observation. Fidelity of implementation checklists were evaluated by the investigator to determine fidelity of the intervention and inter-observer agreement between RAs.

Overall, fidelity calculated for the Booster Sessions was 95.57% (77%-100%). It is important to note that only two fidelity points were below the 85% threshold and were due to unusual circumstances occurring during the Booster Session (i.e., behavior

problems with a student and a student falling ill). After the teacher experiencing the student behavior problem was given additional training and suggestions to respond to student behaviors, fidelity ratings returned to acceptable levels. It is important to note that the RAs continued to document behavior problems during school number 4's Booster Session; however, they also made specific comments that the teacher did an excellent job in handling the behaviors.

The inter-observer agreement for the Booster Session instruction was calculated at 90% (80%-100%), determined by taking the number of agreements divided by the number of agreements plus disagreements. This calculation was obtained for ten lessons (four times for Booster Session Teacher 1 and six times for Teacher 2).

Inter-rater Agreement. The RAs also provided inter-rater agreement data on the Modified Eller Scoring of the SVA vocabulary measure and the SNAP. Thirty percent ($n = 20$) of both the SVA and SNAP pre- and post-test assessments were evaluated to ensure proper scoring. Inter-rater agreement on the SVA was 85% at pretest and 90% at post-test. Inter-rater agreement on the SNAP was 91.5% at pretest and 89.5% at post-test. Inter-rater agreement was calculated by taking the number of agreements divided by the number of agreements plus disagreements.

CHAPTER IV

RESULTS

Results are presented in three sections: (a) a power analysis to determine adequate sample size, (b) group equivalence at pretest, and (c) descriptive and inferential statistics that address each of the research questions for this study. In addition, correlations for pretest and post-test measures are provided in Appendix G.

Power Analysis

Means and standard deviations of pretest to post-test change scores were examined to determine whether the observed effect sizes and sample sizes were sufficiently powerful (i.e., that 80% of studies would be expected to detect a significant effect and reject the null hypothesis that the two population means are equal). The smallest change scores between groups were for the Booster versus Peer Comparison Group on comprehension questions. Based on the given effect size (sample mean change scores of 1.2 vs. 1.0 and standard deviations of 1.7), sample size (22 cases per group) and alpha (.05, two-tailed), the power for this study is insufficient (6.7%) to reject the null hypothesis that the groups do not differ on comprehension change scores. A similar strategy was used to determine power for the other group comparisons and outcome measures. Of the eight total comparisons (Booster vs. No Booster on 4 measures; Booster vs. Peer Comparison on 4 measures) this study has sufficient power for only two, namely, the Storybook Vocabulary Assessment (SVA) comparisons between the Booster vs. No Booster and Booster vs. Peer Comparison contrasts. The table below reports the sample sizes needed *per group* to have sufficient power to reject the null hypothesis for those comparisons underpowered in this study.

Table 7

Sample Sizes Required for Sufficient Power per Group

Measure	Booster/ No Booster	Booster/ Peer Comparison
UC	172	74
CQ	212	568
SG	53	72

Note. UC = Utterance Count; CQ = Comprehension Questions; SG = Story Grammar

Pre-treatment Group Equivalency

A Pearson Chi-Square analysis was conducted to determine whether the Booster and No Booster groups were similar on demographic variables (i.e., gender, SES, ethnicity). Results of the analysis indicate that there were no statistically significant differences on any of the tested variables. In addition, a Pearson Chi-Square analysis was conducted to determine whether the Booster and Peer Comparison groups shared similar demographic variables. Results of this analysis indicate that there were no statistically significant differences for SES or ethnicity. There was, however, a significant difference for gender: the Peer Comparison group contained significantly more girls than boys. Results of the Chi-Square analyses are presented in Table 8.

Independent t-tests were used to determine whether the Booster and No Booster groups were similar on the DIBELS beginning reading measures (PSF and NWF), and age (in months) prior to the intervention. The analysis indicated that there were no group differences on the PSF $t(42) = .779, p > .05$; NWF $t(42) = .804, p > .05$ or age $t(42) =$

.302, $p > .05$. In addition, independent t-tests were used to determine whether the Booster and Peer Comparison groups were *different*, as per design, on the DIBELS beginning reading measures (PSF and NWF), and *similar* on age prior to the intervention. Results revealed that there *was* a significant difference on the PSF $t(42) = .000$, $p < .05$; NWF $t(42) = .000$, $p < .05$ indicating that the Booster and Peer Comparison groups were statistically different from each other at the beginning of the intervention. There was no statistically significant difference for age $t(42) = .716$, $p > .05$ for the Booster and Peer Comparison groups. Means and standard deviations for the Booster, No Booster and Peer Comparison groups on PSF, NWF and age are presented in Table 8.

Table 8

Group Equivalency: Chi-Square and t-test Results

Variable	Group			Booster/ No Booster	Booster/ Peer Comparison
	Booster (N=22)	No Booster (N=22)	Peer Comparison (N=22)		
Gender (% Female)	31.8	36.4	63.6	$\chi^2 (1,44) = .750$	$\chi^2 (1,44) = .035^*$
SES (% Free lunch)	18.2	13.6	18.2	$\chi^2 (1,44) = .680$	$\chi^2 (1,44) = 1.0$
Ethnicity				$\chi^2 (1,44) = .599$	$\chi^2 (1,44) = .599$
African Am. (%)	4.5	4.5	4.5		
Caucasian (%)	90.9	95.5	95.5		
Hispanic (%)	4.5	0	0		

Note. M = mean; SD = standard deviation; *p < .05

Table 8 (Continued)

Group Equivalency: Chi-Square and t-test Results

Variable	Group			Booster/ No Booster	Booster/ Peer Comparison
	Booster (N=22)	No Booster (N=22)	Peer Comparison (N=22)		
PSF M (SD)	15.00 (11.84)	14.00 (11.66)	39.27 (7.72)	t(42) = .779	t(42) = .000*
NWF M (SD)	10.91 (5.28)	10.45 (6.75)	44.23 (11.45)	t(42) = .804	t(42) = .000*
Age M (SD)	80.23 (4.89)	78.59 (5.48)	80.82 (5.78)	t(42) = .302	t(42) = .716

Note. PSF = Phonemic Segmentation Fluency; NWF = Nonsense Word Fluency; M = mean; SD = standard deviation; *p < .05

Data Analysis Summary

Separate 2 X 2 repeated measures ANOVA and ANCOVA procedures were conducted for each of the four research questions. These data analysis procedures were chosen for two reasons. First, a multi-level analysis that investigated nested or multivariate techniques would not have led to meaningful results because the sample size of the current study is too small. In other words, the current sample would not provide enough power for other statistical models to reduce Type I error.

Second, because research questions two and three are unique, meaning there is no previous research-base that analyzes the effects of vocabulary instruction on specific expressive language skills, it was of interest to determine the effects of the independent variable (i.e., Booster Session) on each dependent variable (i.e., utterance count, comprehension, story grammar) separately. A similar design was used by Dimino, Gersten, Carnine, and Blake (1990) in their study investigating the effects of teaching story grammar to promote reading comprehension. In this study, independent ANOVA analyses were run on three dependent variables, (a) story grammar questions, (b) basal questions, and (c) retell scores.

In addition, effect sizes were calculated for each comparison to gain more information about the mean difference between the group's performances. In general, the higher the effect size, the greater the difference between the two groups (Gall, Gall, & Borg, 2003). According to Cohen's convention, the degree of significance using eta-squared is, .10 for a small effect, .25 for a moderate effect, and .40 for a large effect (1988). Effect sizes, descriptive statistics, and F-values and p-values are summarized in Tables 9 and 10.

Because results of the Chi Square analysis indicated a statistically significant difference for gender between the Booster and Peer Comparison groups, gender was used as a covariate in the Booster versus Peer Comparison analyses to control for potential gender effects. Although t-tests revealed the two groups were statistically different on PSF and NWF scores at pretest, these differences were a component of the study's design. In other words, the design required the Booster group to be significantly different from the Peer Comparison group, as the Booster group represented students who were at-risk of reading failure and the Peer Comparison group represented average-achieving peers. As such, the decision was made to take a more rigorous approach to analyzing the data and *not* use PSF and NWF as covariates in Booster to Peer Comparison analyses.

Table 9

Summary of Comparisons between Booster and No Booster Groups

Measure	Pretest				Post-test				Group X Time		Effect Size
	Booster		No Booster		Booster		No Booster		F-value	P-value	Eta-Square
	M	SD	M	SD	M	SD	M	SD			
SVA	10.64	8.03	7.41	6.80	44.68	18.87	17.23	14.20	36.41	<.001	.46
SNAP											
UC	74.68	53.29	73.00	51.47	85.37	83.78	98.14	67.42	.479	.493	.01
CQ	6.36	1.62	6.34	1.21	5.18	1.14	5.43	.82	.340	.563	<.01
SG	5.59	2.09	4.32	2.51	5.00	2.79	4.95	2.30	1.71	.198	.04

Note. SVA = Storybook Vocabulary Assessment, SNAP = Strong Narrative Assessment Procedure, UC = Utterance Count, CQ = Comprehension Questions, SG = Story Grammar,

M = mean; SD = standard deviation

Table 10

Summary of Comparisons between Booster and Peer Comparison Groups

Measure	Pretest				Post-test				Group X Time		Effect Size
	Booster		Peer Comparison		Booster		Peer Comparison		F-value	P-value	Eta-Square
	M	SD	M	SD	M	SD	M	SD			
SVA	10.64	8.03	18.55	10.06	44.68	18.87	35.18	15.68	15.840	<.001	.28
SNAP											
UC	74.68	53.29	105.77	70.94	85.37	83.78	140.00	85.70	.373	.545	.01
CQ	6.36	1.62	7.18	1.35	5.18	1.14	6.14	.90	.117	.734	<.01
SG	5.59	2.09	6.27	1.75	5.00	2.79	6.55	2.36	.342	.562	<.01

Note. SVA = Storybook Vocabulary Assessment, SNAP = Strong Narrative Assessment Procedure, UC = Utterance Count, CQ = Comprehension Questions, SG = Story Grammar,

M = mean; SD = standard deviation

Research Question One

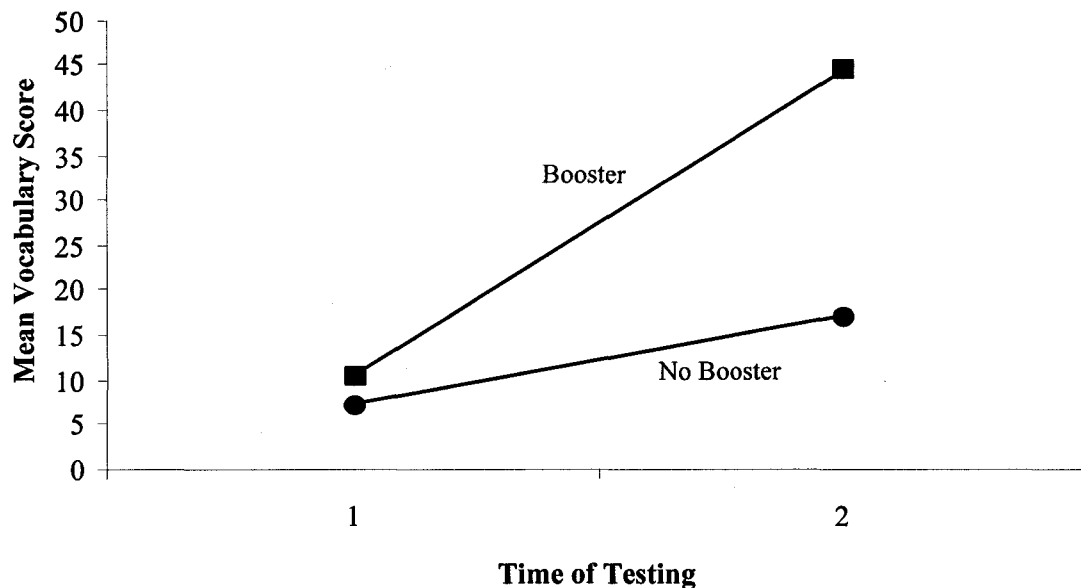
Does storybook vocabulary instruction, with extended emphasis on explicit vocabulary instruction and word learning activities through small group instruction (i.e., Booster Sessions), promote the acquisition of target vocabulary by first-graders who are at-risk of reading failure, when compared to the performance of children not receiving small group instruction (i.e., Booster Sessions)?

A 2 X 2 (group: Booster vs. No Booster X time: pretest and post-test) within-subjects repeated measures ANOVA was conducted to assess the effects of the Booster Session on vocabulary gains across time. Twenty-two students in both the Booster group and the No Booster group completed the SVA at pretest and post-test; therefore a 2 X 2 within-subjects repeated measures ANOVA was conducted using the SVA performance data for a total of 44 participants in both groups.

Results indicated a statistically significant interaction between time and group $F(1,42) = 36.41; p < .05$. That is, there were differential effects on students' storybook vocabulary knowledge across the two times of testing. As shown in Figure 1, the two groups' performance at pretest was $M = 10.64; SD = 8.03$ for the Booster group and $M = 7.41; SD = 6.80$ for the No Booster group. Following the intervention, the Booster group outperformed the No Booster group, $M = 44.68, SD = 18.87$ for the Booster group and $M = 17.23, SD = 14.20$ for the No Booster group. Both groups, however, improved their performance from pretest to post-test. Interaction effect size was .46, indicating a very large effect according to Cohen (1988). Descriptive statistics are presented in Table 9.

Figure 1

SVA Scores Pretest and Post-test for Booster and No Booster Groups



Research Question Two

Does storybook vocabulary instruction, with extended emphasis on explicit instruction and word learning activities through small group instruction (i.e., Booster Sessions), decrease the achievement gap in target vocabulary found between first-graders who are at-risk of reading failure and their average-achieving peers?

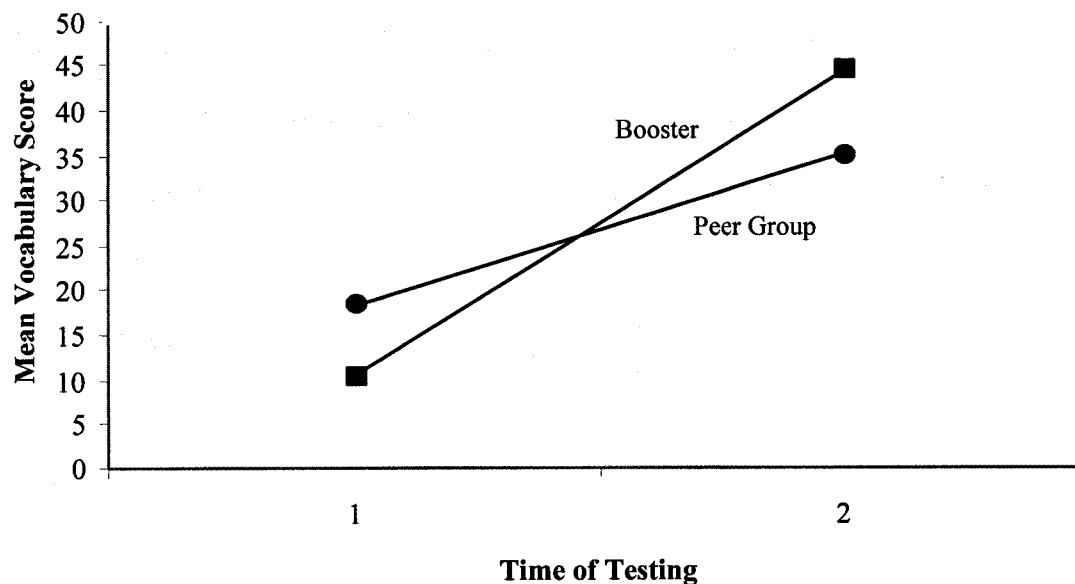
A 2 X 2 (group: Booster vs. Peer Comparison X time: pretest and post-test) within-subjects repeated measures ANCOVA, using gender as a covariate, was conducted to assess the effects of the Booster Session on vocabulary gains across time. Twenty-two students in both the Booster group and the Peer Comparison group completed the SVA at the pretest and post-test times; therefore a 2 X 2 within-subjects repeated measures

ANCOVA was conducted using the SVA performance data for a total of 44 participants in both groups.

Results indicated a significant interaction effect $F(1,41) = 15.84, p < .05$. In other words, there were differential effects on students' storybook vocabulary knowledge across the two times of testing. As shown in Figure 2, the two groups' performance at pretest was $M = 10.64; SD = 8.03$ for the Booster group, and $M = 18.55; SD = 10.06$ for the Peer Comparison group. Following the intervention, the Booster group made vocabulary gains ($M = 44.68, SD = 18.87$) and these gains were sufficient to close the achievement gap between themselves and their average-achieving peers ($M = 35.18, SD = 15.68$). Interaction effect size was .28, indicating a medium effect according to Cohen (1988). Descriptive statistics can be found in Table 10.

Figure 2

SVA Scores Pretest and Post-test for Booster and Peer Comparison Groups



The results of the present study indicate that the students who participated in the Booster Sessions were significantly able to reduce the achievement gap between themselves and their average-achieving peers. Although not a formal research question in the present study, looking at mean scores on the SVA across all three groups (Table 11) will help illustrate the importance of this finding.

Table 11

SVA Pretest and Post-test Scores from all Conditions

Group	Pretest	Post-test	Mean Difference
Booster	10.64	44.68	34.04
No Booster	7.41	17.23	9.82
Peer Comparison	18.55	35.18	16.63

When comparing the pre- and post-test scores of the No Booster and Peer Comparison groups it is important to note that these two conditions received instruction through the Story Read Aloud curriculum only. At pre- and post-test, the Peer Comparison group did much better than the No Booster group. Given the design of the present study, we can most likely attribute the gains of each group to the instruction during Story Read Aloud time. However, what is interesting about the scores for these two groups is that the *post-test* score for the No Booster group is very close to the *pretest* score for the Peer Comparison group. This finding indicates that students in the No Booster group only did as well as the Peer Comparison group did at pretest time. In other

words, the effects of the Story Read Aloud curriculum, while producing gains for students who are at-risk of reading failure (i.e., No Booster) did not close the achievement gap between themselves and their average-achieving peers. In essence, the No Booster group performed as well as the Peer Comparison group prior to participating in the Story Read Aloud curriculum.

Research Question Three

Does storybook vocabulary instruction, with extended emphasis on explicit instruction and word learning activities through small group instruction (i.e., Booster Sessions), increase the expressive language skills (i.e., number of utterances, story grammar, comprehension) of first-graders who are at-risk of reading failure?

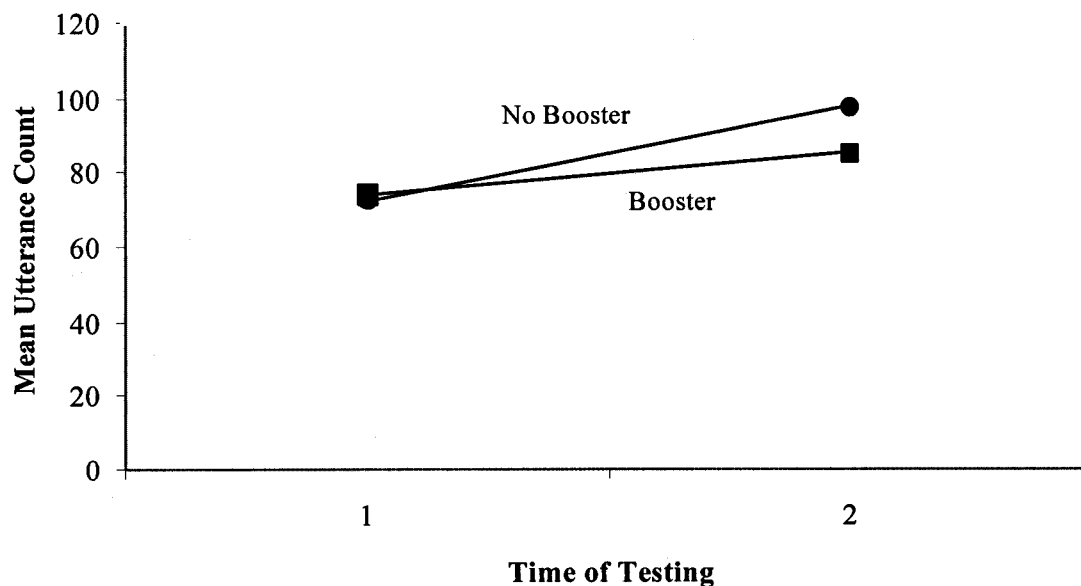
A 2 X 2 (group: Booster vs. No Booster X time: pretest and post-test) within-subjects repeated measures ANOVA was conducted to assess the effects of the Booster Session on students' expressive language across time. Twenty-two students in both the Booster group and the No Booster group completed the SNAP at the pretest and post-test times; therefore a 2 X 2 within-subjects repeated measures ANOVA was conducted using the SNAP performance data for a total of 44 participants in both groups.

As a result of a tape recorder malfunction, utterance counts at pretest for three Booster group students' retells were unavailable. Consequently, for this variable, a 2 X 2 (group: Booster vs. No Booster X time: pretest and post-test) within-subjects repeated measures ANOVA was conducted to assess the effects of the Booster Session on students' utterance count. Pretest data were available for 19 students in the Booster group and 22 students in the No Booster group. Post-test data were available for 22 students in both Booster and No Booster groups.

Utterance Count. Results indicated no significant interaction effect between time and group $F(1,39) = .479$; $p = .493$. In other words, the independent variable did not effect the number of words used during retells over time. It is important to note, however, that the average number of words students used to retell stories in the Booster and No Booster groups increased across the two times of testing. As shown in Figure 3, the two groups' performance at pretest was $M = 74.68$; $SD = 53.29$ for the Booster group, and $M = 73.00$; $SD = 51.47$ for the No Booster group. Following the intervention, the Booster group's vocabulary scores were $M = 85.37$, $SD = 83.78$ and the No Booster group's scores were $M = 98.14$, $SD = 67.42$. Interaction effect size was .01, indicating the intervention had negligible effects according to Cohen (1988). Descriptive statistics can be found in Table 9.

Figure 3

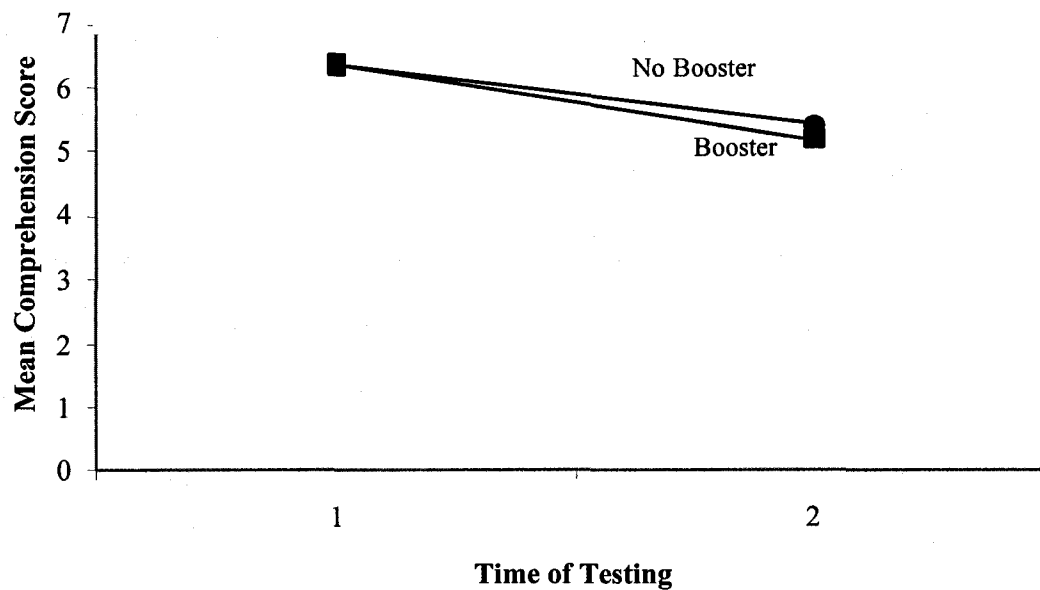
Utterance Count Scores Pretest and Post-test for Booster and No Booster Groups



Comprehension. Results indicate no significant interaction effect between time and group $F(1,42) = .340$; $p = .563$ on comprehension questions. That is, there were no significant differences between the Booster and No Booster groups across time. As shown in Figure 4, the two groups' performance at pretest was $M = 6.36$; $SD = 1.62$ for the Booster group, and $M = 6.34$; $SD = 1.21$ for the No Booster group, in fact, there is a *decreasing* trend in mean scores from pretest to post-test. Post-test performance was ($M = 5.18$, $SD = 1.14$) for the Booster group and ($M = 5.43$, $SD = .82$) for the No Booster group. Interaction effect size was $<.01$, indicating the intervention had negligible effects according to Cohen (1988). Descriptive statistics can be found in Table 9.

Figure 4

Comprehension Scores Pretest and Post-test for Booster and No Booster Groups

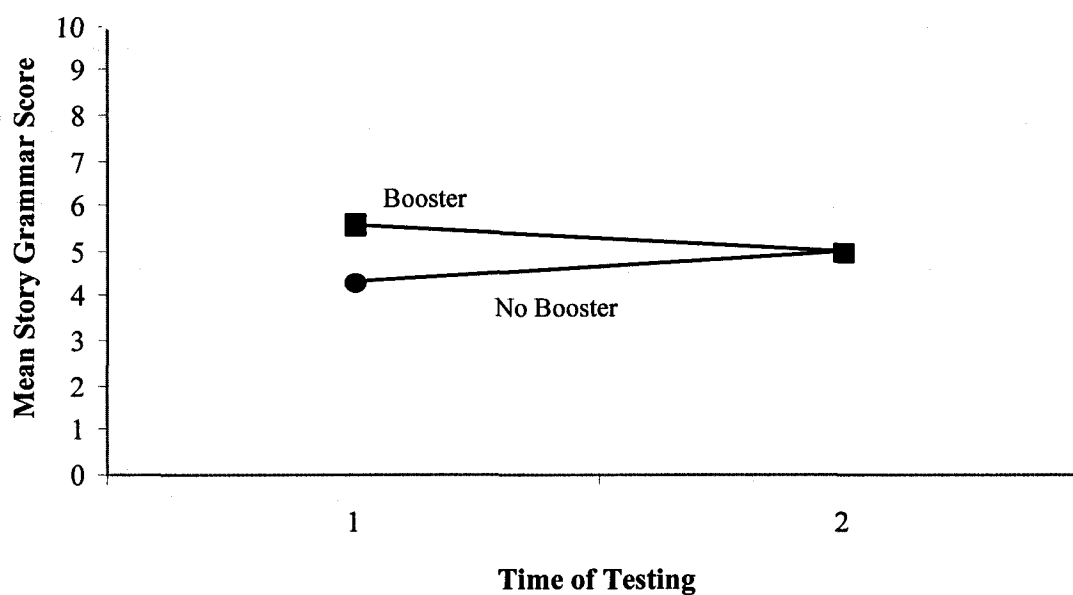


Story Grammar. Results indicated no significant interaction effects between time and group $F(1,42) = 1.71$; $p = .198$, indicating that the independent variable did not affect

the student's ability to produce story grammar elements during retells across time. As shown in Figure 5, the two groups' performance at pretest was $M = 5.59$; $SD = 2.09$ for the Booster group, and $M = 4.32$; $SD = 2.51$ for the No Booster group. Post-test performance was ($M = 5.00$, $SD = 2.79$) for the Booster group and ($M = 4.95$, $SD = 2.30$) for the No Booster group. Interaction effect size was .04, indicating the intervention had negligible effects according to Cohen (1988). Descriptive statistics can be found in Table 9.

Figure 5

Story Grammar Scores Pretest and Post-test for Booster and No Booster Groups



Research Question Four

Does storybook vocabulary instruction, with extended emphasis on explicit instruction and word learning activities through small group instruction (i.e., Booster Sessions), decrease the achievement gap in expressive language skills (i.e., number of

utterances, story grammar, comprehension) found between first-graders who are at-risk for reading failure and their average-achieving peers?

A 2 X 2 (group: Booster vs. Peer Group X time: pretest and post-test) within-subjects repeated measures ANCOVA was conducted to assess the effects of the Booster Session on students' expressive language across time. Twenty-two students in both the Booster group and the Peer Comparison group completed the SNAP at the pretest and post-test times; therefore a 2 X 2 within-subjects repeated measures ANCOVA using gender as a covariate was conducted using the SNAP performance data for a total of 44 participants in both groups.

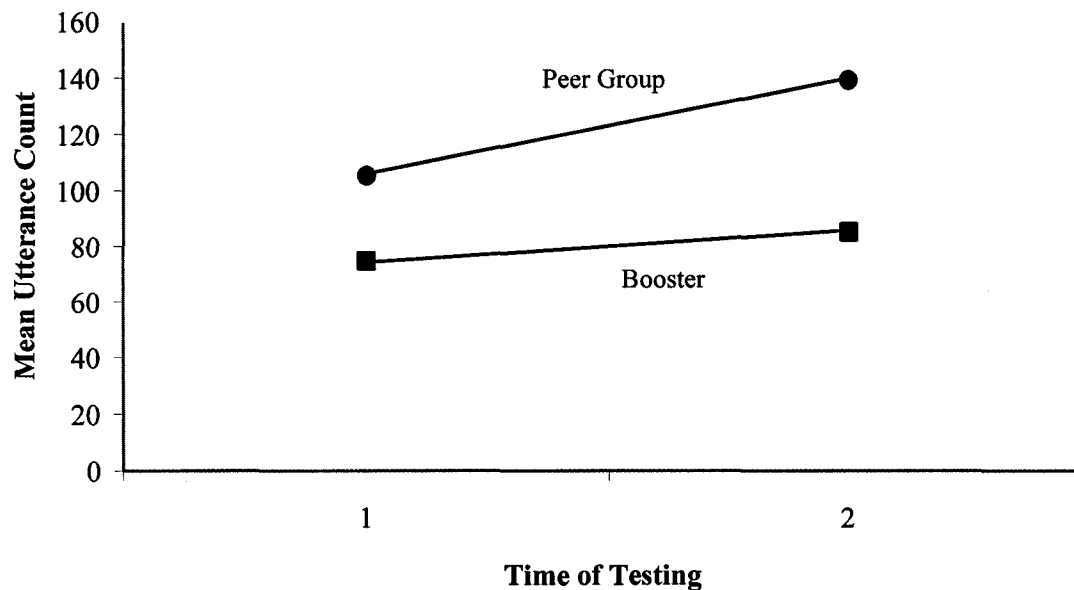
As a result of a tape recorder malfunction utterance counts at pretest and those students' retells were unavailable for three Booster group students. Consequently, for this variable, a 2 X 2 (group: Booster vs. Peer Comparison X time: pretest and post-test) within-subjects repeated measures ANCOVA was conducted to assess the effects of the Booster Session on students' utterance count. Pretest data were available for 19 students in the Booster group and 22 students in the Peer Comparison group. Post-test data were available for 22 students in both groups.

Utterance Count. Results indicated no significant interaction effects between time and group $F(1,38) = .373$; $p = .545$. As with the Booster and No Booster comparison, there was an increase in the number of words students used to retell stories across the two times of testing. As shown in Figure 6, the two groups' performance at pretest was $M = 74.68$; $SD = 53.29$ for the Booster group, and $M = 105.77$; $SD = 70.94$ for the Peer Comparison group. Following the intervention, the Booster group increased in total utterances ($M = 85.37$, $SD = 83.78$), as did the Peer Comparison group ($M =$

140.00, SD = 85.70). Interaction effect size was .01 indicating the intervention had negligible effects according to Cohen (1988). Descriptive statistics can be found in Table 10.

Figure 6

Utterance Count Scores Pretest and Post-test for Booster and Peer Comparison

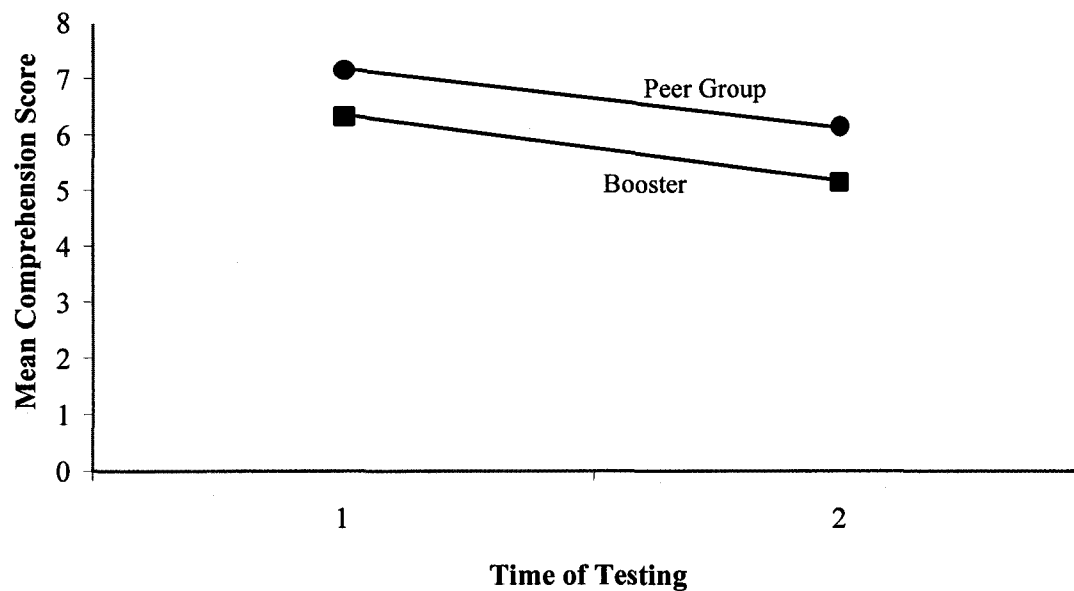


Comprehension. Results indicated no significant interaction effects between time and group $F(1,41) = .117$; $p = .734$. That is, there were no differential effects across the two times between the Booster and No Booster groups across time. As shown in Figure 7, the two groups' performance at pretest was $M = 6.36$; $SD = 1.62$ for the Booster group, and $M = 7.18$; $SD = 1.35$ for the Peer Comparison group. Post-test performance was ($M = 5.18$, $SD = 1.14$) for the Booster group and ($M = 6.14$, $SD = .90$) for the Peer Comparison group. Interaction effect size was $<.01$ indicating the intervention had

negligible effects according to Cohen (1988). Descriptive statistics can be found in Table 10.

Figure 7

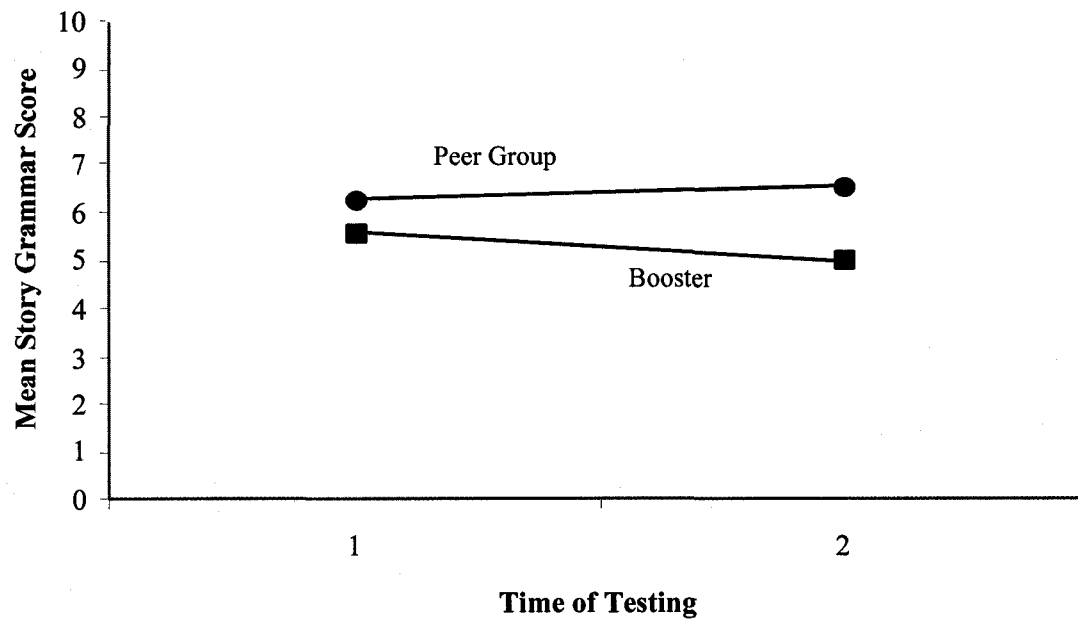
Comprehension Scores Pretest and Post-test for Booster and Peer Comparison



Story Grammar. Results indicated no significant interaction effects between time and group $F(1,41) = .342$; $p = .562$. In other words, the independent variable, Booster Session, did not affect the students' ability to produce story grammar elements during retells across time. As shown in Figure 8, the two groups' performance at pretest was $M = 5.59$; $SD = 2.09$ for the Booster group, and $M = 6.27$; $SD = 1.75$ for the Peer Comparison group. Post-test performance was ($M = 5.00$, $SD = 2.79$) for the Booster group and ($M = 6.55$, $SD = 2.36$) for the Peer Comparison group. Interaction effect size was $<.01$, indicating the intervention had negligible effects according to Cohen (1988). Descriptive statistics can be found in Table 10.

Figure 8

Story Grammar Scores Pretest and Post-test for Booster and Peer Comparison



CHAPTER V

DISCUSSION

This study examined the effects of adding a Booster Session to a curriculum focused on improving comprehension and vocabulary skills in children who are at-risk of reading failure. The primary purpose was to determine whether small group, twenty-minute Booster Sessions focusing on intense vocabulary instruction would improve students' vocabulary knowledge and expressive language skills. A secondary goal was to determine whether participation in the Booster Session enabled students initially identified as at-risk for reading failure to close the achievement gap with their average-achieving peers on measures of vocabulary and expressive language.

Results indicated that the students in the Booster group significantly outperformed students in the No Booster group on measures of vocabulary knowledge and successfully closed the achievement gap. However, there were no statistical differences between the Booster and No Booster groups or between the Booster and Peer Comparison groups on any of the expressive language measures (i.e., Strong Narrative Assessment Procedure, utterance count, comprehension questions, story grammar).

Pre-treatment Group Equivalency

Chi-Squared analysis conducted at pretest indicated that the Booster and No Booster groups were equivalent on the key demographic variables of gender, SES, and ethnicity. The same analysis indicated that the Booster and Peer Groups were equivalent on the variables of ethnicity and SES; however, there were significant gender differences between the Booster group and their Peer Group Comparison.

Normally, inconsistency in the variables for group equivalency would indicate a significant limitation, as the groups being compared are not considered “equivalent.” However, the Peer Group’s higher percentage of girls than boys is typical of the gender disparity found in reading research (Phillips, Norrise, Osmond & Maynard, 2002) and suggests that the group demographics of the current study are socially valid and represent the typical range of reading achievement found in first grade classrooms.

Research Question One

On the measure of vocabulary acquisition (Storybook Vocabulary Assessment), performance for both the Booster and No Booster group improved from pretest to post-test. However, the mean increase in score for the Booster group ($M = 34.04$) was significantly greater than the mean increase in the score for the No Booster group ($M = 9.82$). Of note is the interaction effect size of .46, which is considered very large (Cohen, 1988).

The increase observed on the SVA with the Booster group is notable as the performance of this group is over three times that of the No Booster group. It makes sense intuitively that students who receive more intense instruction would perform better. However, the findings of the present study are unique in that they represent a package of empirically-validated strategies (Jitendra et al., 2004) that when utilized together, create very large effects in children’s word knowledge.

Students who receive explicit instruction of words through meaningful context are not only able to define words better (Brett et al., 1996; Gipe, 1979; Jenkins et al., 1989), but are also able to define words more quickly (McKeown et al., 1985). The ramifications of quick retrieval of words and their meanings are evident in the reading

comprehension literature (McKeown, Beck, Omanson & Perfetti, 1983). In short, the inability of students suffering from a poor vocabulary to read quickly results in comprehension deficits. In contrast, students who practice the meaning of words through context increase their chances of learning a new word, and perform better on assessments of word knowledge (McKeown et al., 1985; Jenkins et al., 1989; Pany & Jenkins, 1978; Pany et al., 1982; Senechal, 1997; Stahl, 1986; Gipe, 1978; Whitehurst et al., 1988), and experience higher academic achievement (Hart & Risley, 1995).

A major limitation of the current literature base is the limited experience students receive with targeted vocabulary. Many interventions consisted either of a single reading event followed by a post-test or covered a large number of words over a limited period of time with no review of previously-learned words. A fundamental component of the current study was the use of judicious review. During the Booster Sessions every opportunity was taken to incorporate and review previously-learned vocabulary words into each lesson and one full Booster Session was dedicated to reviewing all previously-learned words with the current week's words. By incorporating review, students were given the opportunity to become more experienced with the words in a variety of contexts and morphological structures, thereby allowing them to process vocabulary deeply and become flexible with the words. Although the direct effects of instructional review cannot be extracted from the current data, review is considered a strategic element of good instruction (Simmons & Kame'enui, 1996).

It is reasonable to conclude that students who receive explicit word instruction and the opportunity to practice using words in a variety of contexts would experience powerful benefits. Overall, the current study simply combined what was already known

to represent “best practice” in teaching vocabulary and measured its effects. What is unique, however, is that the present study focused on incorporating what we know to be effective with older, elementary-aged children and utilized those practices with children who are in the *primary* grades —something that has not been investigated previously.

It is not surprising that students in the No Booster group (who received the Story Read Aloud curriculum, representative of best practices in storybook research) also demonstrated an increase in their SVA scores. The Story Read Aloud curriculum requires students to answer inferential questions with target words, talk to their peers using target words, use target words during interactive read-alouds (Heath, 1980; Nino, 1980; Senechal & Cornell, 1993) and provide students an opportunity to hear targeted vocabulary words in a variety of contexts. These words, when encountered, are defined within the context of the read-aloud and reviewed wherever appropriate, thereby increasing the chance they will be added to a child’s vocabulary repertoire (Eller, Pappas & Brown, 1988; Elley, 1989; Stahl, 1986).

A major component of the Story Read Aloud curriculum is developing story and expository text retelling skills. In all cases, vocabulary words that were critical to understanding a story’s theme, a character’s traits or motives, or the story’s setting were included in instruction. Evidence suggests that these storybook elements enhance a student’s ability to assimilate novel vocabulary (Elley, 1989; Eller et al., 1988; Stahl, 1986). For example, when the book *How the Elephant Got Its Trunk* was read, the word *polite* was chosen for instruction because this word was critical to the development of the main character and understanding the character’s own vocabulary (e.g., always saying “thank you” and “please”). Finally, the increased scores of the No Booster group are

congruent with the vocabulary instruction literature where students demonstrated gains in word knowledge when words were simply defined within the context of reading (Brett et al., 1996; Stahl, 1983).

In sum, the Booster group's gains from pretest to post-test demonstrate that word-learning strategies effective with older elementary-aged students can also be effective with primary-aged students. In addition, the increases by the No Booster group from pretest to post-test demonstrate the effectiveness of the teaching practices incorporated into the Story Read Aloud project. However, incorporating more explicit vocabulary instruction in combination with judicious review can lead to greater increases in student achievement.

Research Question Two

On the measure of vocabulary acquisition (SVA), the performance of both the Booster group and the Peer Comparison group improved from pretest to post-test, although the mean increase in score of the Booster group ($M = 34.04$) was significantly greater than the mean increase in the score of the Peer Comparison group ($M = 16.63$). The effect size obtained was .28 indicating a medium effect (Cohen, 1988).

Not all children enter school with the same language experiences. Unfortunately, those children who enter school with less-developed language skills are at-risk of academic failure (Hart & Risley, 1995; Senechal & LeFevre, 2001). In addition, those children who are at-risk typically do not catch up to their peers in academic achievement levels. These children continue to struggle academically and the gap between themselves and their average-achieving peers continues to grow (Hart & Risley, 1995; Stanovich, 1986).

At present, there is no published empirical evidence to support instructional techniques for vocabulary with struggling students of primary school age. The present study offers some hope in this regard. First, the results of the present study indicate that vocabulary instruction methods that are effective with older students can be effective with younger students. Second, the techniques used throughout the current study support findings found by Drum and Madison (1985) that younger students require more teacher directed support and dialog. Third, when intensive vocabulary instructional practices are put into place for struggling learners, the effects have the potential to close the achievement gap between students.

Research Questions Three and Four

On the measures of expressive language, there were no significant interaction effects upon the dependent measures of utterance count, comprehension questions, or story grammar between the Booster and No Booster groups or between the Booster and Peer Comparison groups. The vocabulary intervention utilized in the present study did not result in statistically significant increases in the number of words used during a story retell by students who are at-risk of reading failure. Additionally, the current intervention did not statistically affect the number of comprehension questions students answered correctly or increase their ability to identify story grammar elements. Therefore, it is not surprising that the achievement gap between students who were identified as at-risk and their average-achieving peers was not closed. Although not significant, visual analysis of individual dependent variables (discussed below) indicates some interesting findings related to unusual data trends.

Utterance Count

All three groups slightly increased the number of words they used during their story retells. The Booster group's mean increase of 10.69 words, the No Booster group's mean increase of 25.14, and the Peer Comparison group's mean increase of 34.23 words all indicate improvement. However, this improvement cannot solely be attributed to whether students received Booster Session instruction. It is likely that the Story Read Aloud curriculum was largely responsible for these gains, as story retelling is a major component of the curriculum. Given that all children in the study were receiving Story Read Aloud instruction as part of their regular reading curriculum, the gains observed across groups is likely a result of that instruction.

Another trend noted within the utterance count data supports the phenomenon of the Matthew Effect—the rich get richer and the poor get poorer (Hart and Risley, 1995; Stanovich, 1986). The Peer Comparison group outpaced both the Booster and No Booster groups by 10 and 20 words, respectively. In fact, the Booster and No Booster groups' post-test scores did not even reach the *pretest* scores of the Peer Comparison group. Even in light of the small gains, if the Peer Comparison group continues to increase at its current rate (the rich getting richer), the Booster and No Booster groups will have little chance of catching up and the gap between students who are at-risk and their average-achieving peers will continue to get wider (the poor getting poorer).

Another finding in the utterance count results is the noticeable difference between the Booster and the No Booster groups' increase in mean score at post-test (14.45). It is unclear why there is such a large discrepancy between the two groups, especially considering the Booster group scored *lower* than the No Booster group at post-test, but slightly higher at pretest. It is unlikely that the Story Read Aloud curriculum's emphasis

on story retells was a primary cause because all students participated in the curriculum. Some likely contributing variables may include student interest level, the difficulty of the story used during the post-test, or anomalies in post-test administration (e.g., student rapport with the data collector or the environment in which the post-test was given). Overall, with an effect size of .01, it is clear that the independent variable had little effect upon the number of words students used when giving a retell.

Comprehension Questions

Visual inspection of the comprehension question data clearly depicts a decreasing trend for all three groups (Booster, -1.18; No Booster, -.91; Peer Comparison, -1.04). Although the comprehension questions used were provided in the SNAP protocol, the norming data indicates that students typically scored one point lower on the story used as the post-test in the current study in comparison to the story used as the pretest. Consequently, the decrease in scores in the present study are congruent with the decreasing scores presented in the norming data. Findings, therefore, may not necessarily indicate a drop in comprehension but indicate no change from pretest to post-test.

Story Grammar

The No Booster and Peer Comparison groups made meager mean post-test gains, .63 and .28 respectively. However, the Booster group's mean post-test score *decreased* by .59. Although why this happened is uncertain, correlations between utterance count and story grammar (Appendix G) were strong at pretest ($r = .722$) and post-test ($r = .626$) implying that the more words a student used during their retell, the more likely they were to identify story grammar elements. In addition, the issues of data collector rapport and the testing environment discussed above would likely influence these results.

A possible explanation for the variability found across utterances, comprehension questions, and story grammar may be the technical adequacy of the SNAP norms and standardization. For example, participants in the SNAP norming process consisted of children who were 7-10 years old ($N = 104$; 26 per age group), half of whom were considered typical language learners ($n = 52$) while the other half demonstrated language difficulties ($n = 52$) (Strong, 1998). There are no normative data available for 6-year-old children, the average age of the students participating in the present study. Therefore, it is not possible to compare the current sample of students with same-aged peers.

It is interesting to note, however, that the standardization information provided in the SNAP protocols for 7-year-olds indicates that the story used as the final assessment in the present study may be slightly more difficult than the other three story options and may also account for the variability across the dependent measures in the current study. The normative data in the SNAP manual indicates that the number of words 7-year-old children were able to produce for the story used as the post-test in the current study was approximately 20 words less than for the story used as the pretest (Strong, 1998). In addition, students' comprehension and story grammar (i.e., story elements) scores in the norm sample were lower for the post-test story used than for the pre-test story (Strong, 1998).

Social Validity

Upon the completion of the Booster Sessions, each teacher asked the students what they thought about attending the Booster Sessions. Most students indicated that they enjoyed attending the sessions and that they were fun. Comments included that they "liked knowing the stuff before they heard it in class and before the other students

learned it” and “it was good because you get to raise your hand in class because you know the answers.” Negative comments included one student indicating that attending the Booster Sessions “wasn’t fair because they learned the stuff before the other kids.” Another student noted that they “felt bad because you know answers and no one else does.” Overall, however, the Booster Session teachers noted that the children enjoyed their time in the sessions.

Classroom teachers remained blind to the Booster Session intervention protocols. Booster teachers and district administrators commented that classroom teachers were excited to learn the techniques that were being implemented during the Booster Sessions because they felt that the students who were participating in the Booster Sessions clearly understood the vocabulary targeted for instruction. Focus group discussions with teachers at the conclusion of the Booster Sessions revealed that teachers thought students who received Booster Session instruction participated in class discussions more often. Teachers also said that the students who participated in the Booster Sessions were better able to understand the concepts being taught during the Story Read Aloud curriculum.

Limitations and Future Research

The results of this study provide a first step in teaching sophisticated vocabulary to students who are at-risk of reading failure. The results of the curriculum-based assessment (i.e., SVA) indicate that the Booster Sessions were effective in developing word knowledge skills. However, caution must be exercised when considering the results of this study.

First, the number of participants in the study, although statistically adequate, was very small. Consequently, the issue of having statistically low power on some measures

makes it difficult to detect effects. To validate the use of this methodology, future studies should utilize larger samples.

Second, although fundamental to the present study, incorporating a Booster Session within the context of a larger experimental curriculum (i.e., The Story Read Aloud Project) poses a significant limitation. Because vocabulary instruction is incorporated into the Story Read Aloud curriculum and all students participated in this curriculum, it is impossible to determine what effects the Booster Session would have on students who do not receive the Story Read Aloud curriculum. There was no experimental condition in the current study where students who did *not* receive the Story Read Aloud curriculum received the Booster Session. Future investigations may want to include a third Booster Session group to eliminate the diffusion of treatments (Cook & Campell, 1979).

Third, although this study attempted to address some social validity limitations evident in the literature by providing vocabulary instruction in small, homogeneous groups versus one-on-one settings (Eller, Pappas & Brown, 1988; Senechal & Cornell, 1993; Stahl, Rickek & Vandervier, 1990), the Booster Sessions in the present study took place *outside* the regular education environment. Additionally, the Booster Sessions were taught by two teachers hired specifically to implement the intervention. Although the present study indicates that vocabulary skills can be taught in small groups, participants were isolated from their average-achieving peers during the intervention. Future research should consider implementing the intervention in the general education setting to determine whether the Booster Sessions would have similar effects if used class-wide, in small homogeneous reading groups, and in small heterogeneous groups.

Fourth, the standardized assessments used in the present study are a concern in that very few measures are available to assess vocabulary and expressive language skills. Additionally, what assessments *are* available are often under-studied and outdated. Consequently, when considering the findings from vocabulary intervention studies, questions of reliability and validity emerge. It is critical for measures to be developed that are congruent with the current knowledge base, provide more representative norms, and address individual component skills of language like vocabulary, utterances, comprehension and the ability to identify major story elements.

Fifth, the present study does not address maintenance and generalization effects. This limitation, which is prevalent throughout the research on vocabulary interventions, is a critical to consider. Although the results of the present study found significant effects using the vocabulary measure (i.e., SVA), it is unknown if those effects will be maintained over time or if the students will generalize the words to other settings. In addition, future research should also explore whether there are differences in initial acquisition, maintenance and generalization for different types of words. In other words, are there differences in vocabulary acquisition based on word type --Tier 2 or Tier 3 words-- or context of a word --whether a word is from a narrative or expository text?

Finally, the present study asked two important research questions—does intensive vocabulary instruction increase the expressive language skills of students who are at-risk and does this instruction close the achievement gap between students who are at-risk and those of their average-achieving peers. Although the results of the present study do not permit a rejection of either of the null hypotheses presented for expressive language skills, this area of study is still worthy of further exploration. The present study, lasting

only six weeks, was relatively short in duration. Consequently, it is uncertain whether a longer intervention would produce the desired effects upon expressive language skills. In addition, the measure utilized in the current study to determine the intervention's effects upon expressive language (i.e., SNAP) may not be sensitive enough to demonstrate effects over such a short period of time. Future research should consider exploring vocabulary instruction as a method to develop expressive language skills over a longer period of time in addition to utilizing a variety of expressive language measures.

Conclusions and Implications

The findings of this study are promising and suggest that students who received explicit, intensive vocabulary instruction not only significantly outperformed students who did not receive the intensity of instruction but closed the gap between themselves and their average-achieving peers. In light of current legislation (e.g., NCLB) and the requirement to bring *all* students to proficient levels of academic performance, it is necessary to find strategies that exponentially remediate students who are at-risk for reading failure. The current study's utilization of direct instruction, age-appropriate activities, interactive word play games, repeated exposure of words, judicious review, and small-group instruction may be the combination of techniques required in order to halt the Matthew Effects (Stanovich, 1989).

Additionally, the current study answers some of the limitations evident in the literature. First, previous research utilizing storybooks for vocabulary instruction has focused on one-on-one instruction with students who are typically achieving (Eller et al., 1998; Leung, 1992; Senechal, 1997; Senechall & Cornell, 1993). The results of the present study indicate that intensive vocabulary instruction is effective for students if

conducted in small homogeneous groups. The efficacy of this methodology is critical as teachers rarely supply one-on-one instruction to students in the general education classroom.

Second, although children's literature is a source of incidental word learning for young children (Eller et al., 1988; Elley, 1989; Senechal & Cornell, 1993; Stahl, 1986; Stahl et al., 1990), its use as a vehicle for direct vocabulary instruction is not well documented. The present study's results indicate that teaching complicated vocabulary to first-grade children who are at-risk of reading failure is possible and may, over an extended period of time, even decrease the achievement gap (Stanovich, 1986; Hart & Risley, 1995).

Third, whereas previous research has focused on incidental word learning through narrative storybooks (Eller et al., 1988; Elley, 1989; Senechal & Cornell, 1993; Stahl, 1986; Stahl et al., 1990), the current study utilized both narrative *and* expository text to *explicitly* (Burke, Hagan & Grossen, 1998; Carnine, Jones & Dixon, 1994; Gersten, 1998) teach word knowledge. The Beck and McKeown's three-tiered framework (1985) used in this study, appears to be a valid, practitioner friendly, methodology to assist young children in developing a sophisticated vocabulary. Moreover, this framework has the potential to be effective with students with and without learning disabilities (Koury, 1996; Uberti, Scruggs, Mastropieri, 2003).

Fourth, the effects of judicious review cannot be understated. Although a single exposure to a word is occasionally enough to trigger long-term understanding of a word (Eller, Pappas & Brown, 1988; Senechal & Cornell, 1993; Stahl, Rickek & Vandervier, 1990), integrating previously learned words into current and future instruction is critical.

If students are to deeply process words and become more flexible vocabulary users, an intentional, systematic process from reviewing words must be incorporated in instruction (Stahl, 1986).

Finally, although minimal research has been conducted utilizing children's literature as the primary mode of vocabulary instruction, the results of the current study indicate that children's literature can be a catalyst for vocabulary development. This study, in conjunction with Brett et al. (1996), indicates that explicit instruction of vocabulary within the context of a story has far more reaching effects than assuming that students will learn words simply by exposure. Incorporating dialogic strategies, such as those recommended by Beck and McKeown (2002) into instruction for older students can only strengthen their vocabulary knowledge base.

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Appendix A

Informed Consent

INFORMED CONSENT FOR STORY READ ALOUD PROJECT

September 9, 2004

Dear Parent,

Your child's school is very interested in providing a classroom that supports your child's social and academic growth. Because of this interest, your child's first grade teacher is using a story read-aloud approach to help students with comprehension and vocabulary. The story read-aloud approach is a method of reading stories to children that helps children use comprehension strategies. When your teacher reads aloud to the students in the class, your classroom teacher uses storybooks, discussion questions, and activities to help promote your child's understanding of books.

To help your child's teacher document your child's growth in comprehension and vocabulary, Lehigh University's Story Read Aoud Project will help collect assessment information in your child's classroom. While Lehigh University has a partnership with your child's school to collect assessment information, you child's classroom teacher will not be changing any of your child's regular classroom instruction. As part of your teacher's interest to learn more about your child's comprehension and vocabulary growth, your child will be individually administered assessment measures by Lehigh University's Story Read Aloud project staff. These assessments will be given at times scheduled by your child's teacher so your child's instruction and weekly schedule will not be disrupted. Overall, five assessment sessions will be scheduled with your child. These assessment sessions will occur once a month from December through April. Each assessment session will take approximately 20 to 30 minutes and will be conducted in a quiet location determined by your child's classroom teacher. The assessment sessions are very interactive. They include reading a story or informational passage to your child and asking them to retell the story they heard. Your child will also be asked to talk about the meanings of some vocabulary words they heard in the story. If the assessment sessions exceed the 20 to 30 minutes of allotted time, a follow-up visit will be scheduled with your child to complete the assessment activities. Throughout the project, your child's teacher will always be involved in helping schedule the assessment sessions.

Two graduate students from Lehigh University's College of Education will assist Dr. Lana Edwards and Eve Puhalla with the assessments. To help ensure consistency, the same graduate students will work with your child throughout the project. The risks involved in the assessment sessions are minimal in nature. There is the possibility that

your child may become frustrated with the assessment tasks. Participatory word-play games balanced with story read-alouds to assess comprehension should help minimize possible frustrations. Finally, although your child's teacher will be aware of the scores and progress your child is making, the information will not affect your child's typical class grade.

All information obtained in the project will be strictly confidential and your child's name will remain anonymous. Additionally, in all reports, individuals and schools will remain anonymous; your child will not be identifiable. The results of this project will help your child's school as well as other educators in the state of Pennsylvania and around the nation with literacy instruction.

Finally, if you agree to participate, please understand that your child's participation is voluntary and you may withdraw him/her at any time without jeopardizing your child's relationship with his or her school or Lehigh University. If you agree to have your child participate, please complete the attached form the bottom of this letter and return it to your child's teacher with this letter. The second copy is for you to keep.

If you would like additional information about the project, please call Eve Puhalla at Lehigh University (610) 317-9512. Thank you very much.

Sincerely,

Eve Puhalla, M.Ed.
Project Coordinator

Lana Edwards, Ph.D.
Principal Investigator

CONSENT FORM (PLEASE SIGN AND RETURN TO YOUR CHILD'S TEACHER)

I understand that the purpose of this project is to determine the effectiveness of the Story Read Aloud approach on students' reading comprehension and vocabulary skills. I have read and understand the attached letter.

I, _____ (your name), hereby agree to have my child, _____ (your child's name), participate this project conducted by Dr. Lana Edwards.

I understand that my child's participation is voluntary and that I may withdraw him/her from the project at any time and that data will remain confidential with regard to my child's identity.

Signature

Date

INFORMED CONSENT FOR STORY READ ALOUD PROJECT

Student Verbal Assent Form

Lehigh University wants to learn more about how you listen to stories, remember things from stories, and learn new words. Each time we meet, I'll read a story to you, or you'll listen to a story on tape, and then we'll talk about it. We'll also talk about some of the words that you hear in the story.

If you want to work with us, we'll meet with you one time each month. We'll meet with you one time in December, one time in January, one time in February, March, and April. Your teacher will help us find times that we can work together. Each meeting will take about 20 to 30 minutes—that's about as long as your lunch period.

It is up to you if you want to work with us. You can work with us, but you don't have to. If you want to work with us, Lehigh will use the information about how you learn from stories to help other children who have trouble learning from the stories that their teachers read in class. Another important thing to know is that we'll never tell your classmates, or other students in your school, about the work we do and the stories we listen to when we meet together. We'll never be put on the spot or make you feel different because you work with us.

The last thing to know is that if you agree to work with us on this project, you can always decide later not to work with us. At any time, you can stop working with us. You can also talk with your teacher or me about your feelings. Choosing to stop working with us, will not change anything with your school, teacher, or Lehigh University. If you agree to work with us, I'll help you write your name on this form and we'll return it to your teacher with this letter. Thank you!

I _____ (student's name) agree to work with Lehigh University as they help collect information about how I learn from stories and learn new words. I understand the information about the project that has been described to me.

Signature of Witness

Date

Appendix B

Story Vocabulary Assessment

Read-aloud Project, Year 3 (2004-2005)
STORYBOOK VOCABULARY ASSESSMENT (SVA)
Directions for Administration

1. Place examiner probe on clipboard and position so that student cannot see what you record.
2. Say these specific directions to the student:
"I'm going to say some words. I want you to tell me what the words mean. For example, if I say, 'What does the word *sad* mean?' you could say, 'Sad is when you are not happy.' If I say, 'What does the word *cat* mean?' you could say, 'A cat is an animal, it meows.'"

Now it's your turn. (One-second pause). "What does the word *ball* mean?"

<u>CORRECT RESPONSE:</u> If student gives a correct response, say:	<u>INCORRECT RESPONSE:</u> If student gives an incorrect response, says, "I don't know," or doesn't respond say:
<i>"Very good."</i>	<i>"A ball is a toy that you bounce. It is round."</i>

If you don't know what a word means, it is OK to say, "I don't know." OK. Here is your first word.

3. Record the exact words the student provides in the space provided. If the student does not say anything after the question (after 15 seconds), repeat the prompt. If the student still does not respond, place a check in the, "NR (No Response)" box and go the next prompt—do not prompt student more than twice. If the child responds by saying, "I don't know" check the "IDK" box.
4. Continue administering the remaining words until you complete the list. *Administer all words regardless of student accuracy.* Encourage responses with neutral praise (Example: OK, GOOD, NICE JOB). If child becomes frustrated it is ok to tell them that they won't know some of the words and that is ok!
5. If the student provides a definition for a word that is correct but does not supply the definition sought, prompt student by saying, "Do you know another meaning for the word ___?"
6. If the child acts out a word (e.g., snore), prompt the child by saying, "Tell me what ___ means using words." (If child is not able to provide the definition in words, write "acted out" on the score sheet. (Scoring = this would score 1 point).

7. For the word *mammal*, if students only provide one fact about mammals, prompt them for more information by asking, “What else can you tell me about mammals?” Students must provide TWO parts of the definition to receive 4 points for scoring. If they are only able to provide one fact, they score 1 point.
8. If the child uses the word in a sentence, prompt child by saying, “You used the word ____ in a sentence, tell me what the word ____ means.” If child is unable to provide definition after prompting, score = 1 point.
9. If the child begins to ramble or becomes off-task, redirect by providing the prompt again.

Read-aloud Project, Year 3 (2004-2005)
STORYBOOK VOCABULARY ASSESSMENT (SVA)

Student Name: _____ Examiner: _____

Teacher: _____ Date: _____

School: _____

	Prompt & Response	IDK	NR	ELR
1	What does the word <i>snores</i> mean?			
2	What does the word <i>nibbles</i> mean?			
3	What does the word <i>slumbering</i> mean?			
4	What does the word <i>mammal</i> mean?			
5	What does the word <i>survive</i> mean?			
6	What does the <i>protect</i> mean?			
7	What does the word <i>clutch</i> mean?			
8	What does the word <i>peculiar</i> mean?			

9	What does the word <i>nocturnal</i> mean?			
10	What does the word <i>migrate</i> mean?			
11	What does the word <i>hibernate</i> mean?			
12	What does the word <i>nectar</i> mean?			
13	What does the word <i>curious</i> mean?			
14	What does the word <i>polite</i> mean?			
15	What does the word <i>continued</i> mean?			
16	What does the word <i>proud</i> mean?			
17	What does the word <i>species</i> mean?			
18	What does the word <i>habitat</i> mean?			
19	What does the word <i>herbivore</i> mean?			

Appendix C

Eller Scoring Criteria

Category One (No/Faulty Knowledge) = 0 points

Indicates no knowledge or a faulty knowledge of the word's meaning.

- a) Target word was not used
- b) Student responded by saying "I don't know" (IDK) or did not verbally respond (NR)
- c) A non-synonymous replacement was used

Category Two (Developing Knowledge) = 1 point

Indicated developing knowledge of semantic and syntactic features of the word, but knowledge still seems incomplete or faulty.

- a) Target word was used, but used inappropriately or contained a syntactic error
- b) Target word was used inappropriately elsewhere in the text
- c) Target word is acted out (e.g. snores)
- d) Child uses the word in a sentence

Category Three (Synonym) = 2 points

Indicates that the child has obtained semantic and syntactic information about the word from context, but is still using a more familiar word to impart his/her message.

- a) Synonymous word or phrase used
- b) When the word occurred more than once in the text, child supplied a synonym as frequently as the target word

Category Four (Alternative Definition) = 3 points

Indicates that the child provided an alternative definition for a word but not the one sought for the study.

Example) "What does the word *coat* mean?"

A jacket you wear when it is cold outside.

Answer sought) An outer covering of an animal.

Category Five (Accurate Knowledge) = 4 points

Indicated not only an acquisition of accurate semantic and syntactic information about the word, but also that this information may be internalized so that the target word is now used appropriately within the given context.

- a) Accurate use of target word in given context
- b) Accurate use of target word in the text, but not in conjunction with (a)
- c) When the word occurred more than once in the text, child supplied the target word more frequently than a synonym

Category Six (Generalized Knowledge) = 5 points (THIS CATEGORY CAN'T BE USED)

Indicates that generalization may have occurred in that the word was used accurately in both given and other contexts within the text.

- a) Accurate use of the target word not only in given context, but also elsewhere in the text

Appendix D

SNAP Assessment

Read-aloud Project, Year 3 (2004-2005) NARRATIVE Retell Measure

Materials:

Administration directions
Assessment protocol
Stimulus storybook
Audio tape player and recorder
Tape recording of story
Blank tape for recording responses
Pencil
Clipboard

*****IMPORTANT:** Before beginning the assessment, check the audio equipment to ensure that the tape recorder and microphone are working properly. Record yourself (e.g., “Testing 1, 2, 3. This is a test.”) in the real setting and conditions in which the student assessment will occur, rewind the tape recorder and listen to ensure that the tape recorder is working, and the volume and speed are set correctly. Also, check that the “pause” and voice activation (VOR) buttons are turned off, the record time/play mode is set to normal, and the direction is set to forward.

Administration directions:

“I’m going to ask you look at this book and listen to it being read. Then I’ll ask you to tell me about it and answer some questions. You’ll have to listen carefully because you won’t have the book to look at when we’re talking about it.”

Hand the book to the student. Say, **“This book is called (title of book) by (author). What are some things you might do or questions you might ask before you listen to this book?”** Record responses on record sheet in the “things to do before...” section (BOX A) by placing a check mark in the “say it” or “act it”. The say it column would be checked if the child indicates that they *would* do a particular item. For example, if the child says, “I would look through the book” place a check mark in the “say it” column. If the child actually looks through the book/takes a picture walk, place a check mark in the “act it” column. Say, **“What else?”** to elicit further responses.

If the student has not answered the following questions, ask and record the student’s responses: **“Do you think this is an information book or a story?”** Record

the student's response. If the student doesn't respond or responds with "I don't know" say, **"What kind of book do you *think* it is: an information book or a story? If the student still does not respond or responds incorrectly say, "this is a story."** For all students say, **"How do we know this is a story? What are some clues that tell us this is a story."** Ask, **"What are some other clues that tell us this is a story?"** and/or **"What else?"** until the student is finished. Record responses in "characteristics of book/passage" section (BOX B) on record sheet.

"You'll listen to the story through these earphones." Help the student get the ear phones on and adjusted comfortably. Open the book to the title page and say **"You'll hear a special sound that let's you know when to turn the page. I'll start the tape now. Please take the headphones off when the tape is finished."** Start the tape. While the student is listening to the book, monitor to ensure that the student is turning pages at the correct time. Help the student turn pages if necessary.

After the student has listened to the book and has taken the earphones off, stop the tape and put the book out of sight. Take the book tape out of the tape recorder and insert a blank tape for audio recording the student's responses. While you are exchanging tapes ask the following questions for a warm up, responding in a neutral way:

"Did you like the story?"

"Have you heard the story or looked at this book before?" Record student's response.

After the warm up, elicit the story retell by saying:

"Now I want you to tell me the story (title of book) as though you were telling it to a friend who had never heard the story before. Go ahead."

Do not let the student look through the book.

If the student has a hard time beginning:

Say, **"Tell me the beginning of the story."**

If the student still is hesitant to begin:

Say, **"Once upon a time..."**

Once a student begins to tell about (topic), encourage them to continue by showing interest, nodding, saying "um hum" etc. Your goal as the examiner is to encourage the student to do as thorough a retell as possible, with the least intrusive intervention from you.

If a student hesitates, repeat the last thing the student has said in a questioning tone and wait (approximately 15 seconds) for them to continue. If the student still hesitates use the

following prompts as many times as necessary to elicit more information (but remember to use the pause technique first):

- When the student tells about part of the story, but not in much detail: **“Tell me more”** or **“Tell me more about that.”**
- When a student tells part of the story and then hesitates: Repeat the last phrase the student said in a questioning tone and wait. If necessary, follow with: **“What happened next?”** (e.g., **“So the boy wanted to catch a frog?... What happened next?”**)
- When a student tells events out of sequence and hesitates: **“What else happened?”**

After providing a prompt, allow a generous amount of time (approximately 15 seconds) for the student to respond. These prompts, and only these prompts, may be used as many times as necessary to elicit a thorough retell.

When the student has finished telling what he/she learned say, **“Think for just another minute and see if you can remember anything else about (topic).”** If the student continues with retell, continue as necessary with prompts outlined above.

Directions for Comprehension Questions

“Now I’d like you to answer some questions about (title).” Record the student’s responses on answer sheet. For incomplete or unclear responses, say to the child **“Tell me more about ____”** to see if the child can improve on his/her answer. This prompt may be used twice for each question open ended/broad category question.

All questions will first be asked in an open-ended format. The open-ended question will be followed by a series of three yes/no follow up questions. If the student answered a yes/no question in the open-ended response, the question does not have to be asked. However, questions may be repeated as necessary if a student requests it or the examiner feels it’s necessary.

Read-aloud Project, Year 3 (2004 – 2005)
Narrative Listening Comprehension Questions: *One Frog Too Many*

Circle one for each question			Open ended response if answer is incorrect or not listed.
Y	N	NR	What was inside of the surprise package?
Y	N	NR	Was there a grown up frog inside the package?
OE+Y	N	NR	Was there a baby turtle inside the package?
OE+Y	N	NR	Was there a baby frog inside the package??
Y	N	NR	What did Mike say to the big frog when he bit the little frog on the leg?
OE+Y	N	NR	Did Mike say “stop it” to the big frog?
Y	N	NR	Did Mike say “ That was naughty? ”
Y	N	NR	Did Mike say “go home” to the big frog when he bit the little frog on the leg?
Y	N	NR	Why did the big frog bite the little frog on the leg?
OE+Y	N	NR	Did the big frog want to be alone?
OE+Y	N	NR	Was the big frog jealous of the baby frog?
Y	N	NR	Did the little frog bite him first?
OE+Y	N	NR	What did the big frog do to the baby frog when they were on the back of the turtle?
Y	N	NR	Did the big frog kick the baby frog off?
Y	N	NR	Did the big frog hit the baby frog?
Y	N	NR	Did the big frog hold the baby frog?
Y	N	NR	Why didn’t the big frog go home like he was supposed to?
OE+Y	N	NR	Was the big frog tired?
OE+Y	N	NR	Did the big frog want to stay with Mike and the others?
Y	N	NR	Did the big frog want to be mean to the baby frog?
Y	N	NR	What did the big frog do to the baby frog when they were on the raft?
OE+Y	N	NR	Did the big frog hold the baby frog?
OE+Y	N	NR	Did the big frog kick the baby frog off the raft?
Y	N	NR	Did the big frog hit the baby frog?
Y	N	NR	How did Mike find out that the baby frog was gone?
Y	N	NR	Did Mike turn around and notice that the baby frog was gone?
Y	N	NR	Did Mike hear the baby frog splash into the water?
OE+Y	N	NR	Did one of Mike’s pets tell him what happened?

OE+ Y	N	NR	Why was the big frog happy at first that the baby frog was gone?	
			Was the big frog happy because he didn't have to share Mike with the baby frog?	
			Was the big frog happy because he could play with the other pets?	
Y	N	NR	Was the big frog happy because there was more room on the raft?	
Y	N	NR	Why was the big frog mean to the baby frog?	
			Was the little frog mean to the big frog?	
			Was the big frog mean to everyone?	
OE+ Y	N	NR	Did the big frog want to be the only frog?	
OE+ Y	N	NR	Why did the big frog promise to be nice to the baby frog?	
			Did the big frog want them all to be happy?	
			Did the big frog promise to be nice to the baby frog because Mike made him?	
Y	N	NR	Did the big frog promise to be nice to the baby frog because he felt sorry for the baby frog?	

NOTE: Please note any anomalies that may have occurred during the *One Frog Too Many* assessment.

Retell scoring sheet: *One Frog Too Many*

Student: _____

Scorer: _____

Specifically indicated	Prompts (time)		Vocabulary
		Main Character	_____ first
		Boy/Mike	_____ next
		Big frog	_____ finally/the last
		Baby frog	_____ important thing
Episode included	Prompts (time)	Plot Episodes	
		Mike got a surprise package	
		Inside the package was a baby frog	
		Mike was happy to have a baby frog	
		Mike already had a big frog	
		The big frog was not happy to see a new frog	
		The big frog said "hello" to the baby frog in a mean voice	
		Then the big frog reached down and bit the baby frog on the leg (Big frog was mean to the baby frog).	
		Mike told the big frog that he was very naughty/be nice to the baby frog	
		Mike took his pets out to play	
		The two frogs rode on the back of a turtle	
		The big frog kicked the baby frog off the turtle	
		The baby frog cried	
		Mike told the big frog that he was naughty/go home	
		Mike took off on a raft with his pets	
		The big frog didn't go home/he jumped on the raft.	
		He kicked the baby frog off the raft (into the water/pond)	
		The big frog sat on the raft, happy that the baby frog was gone	
		One of the other pets told Mike what happened	
		Mike said, "Oh no! Where's the baby frog?"	
		The baby frog was gone	
		They looked everywhere/they couldn't find him	
		They all went home feeling bad/sad, (even the big frog)	
		Mike laid on his bed to cry (Mike went home and cried)	
		Then they heard something wonderful – it was the baby frog (the baby frog came back)	
		The baby frog (leaped through the window and) landed on the big frog's head	
		The big frog was happy to see the baby frog (and promised to be nice)	

Prior to prompt: # plot episodes _____

Time of first prompt _____

Overall: # plot episodes _____

of prompting episodes _____

Retell time _____

Global ratings	Comments
<u>Clarity of story</u> (Consider: Does the story make sense? Can you follow the story? Is it clear who the action is about?) 3 2 1 0 very clear somewhat difficult to impossible clear follow to follow <u>Richness of language</u> (Consider word choice, vocabulary, sentence structure, use of rich word/phrases from the story such as “felt as though his heart would burst from his chest,” “he stood stiff and silent as a statue,”) 3 2 1 0 very rich rich moderately rich simple /plain <u>How engaging is the retell of the story?</u> (Consider expressiveness and fluency of the retell.) 3 2 1 0 very engaging somewhat not engaging engaging engaging	

Major components

- _____ The boy gets a baby frog
- _____ The big frog doesn't like the baby frog
- _____ The big frog kicks the baby frog off the raft into the water
- _____ The boy and his pets can't find the baby frog
- _____ The boy is sad and goes home to cry
- _____ The baby frog comes back and they are happy

Appendix E

Sample Scripted Lessons

Story Read Aloud Project

Booster Session

Unit: Mammals

Unit Summary

Day	Date	Booster	Lesson
1			No Booster Session
2		1	3 vocabulary words from informational book
3		2	Activities to promote deep processing
4		3	3 vocabulary words from narrative book
5		4	Activities to promote deep processing
6		5	Integrated review of vocabulary from informational and narrative books (6 words)

Overview and Objectives

1. Students will orally define target vocabulary words as they are used in the Story Read Aloud curriculum.
2. Students will actively participate in activities designed to promote deep processing of target vocabulary words.
3. Students will use target vocabulary words independently during booster session discussions.

Materials List

Mammals word cards

Book: *Mammals* by Melissa Stewart

Book: *Bear Snores On* by Karma Wilson; illustrated by Jane Chapman

Target Vocabulary

Informational

mammal	an animal that has a backbone, has lungs, has hair/fur on its body, is warm-blooded, drinks its mother's milk as a baby, most are born from its mother
survive	to stay alive
protect	to keep safe from injury or damage

Narrative

snore	to make noises while sleeping; noises made while sleeping
nibble	to chew in small bites
slumbering	sleeping

Notes

Text written in BLACK indicates general information for your use.

Text written in BLUE indicates script to be used during teaching.

Text written in RED indicates student response.

Booster Session: Lesson 1

Review of the word *mammal*. Introduced in Lesson for Day 1 (p. 4-11).

- Remind students that the book they are currently reading in class is about mammals.

Your teacher is reading a book to your class about a certain group of animals. Does anyone remember what group of animals the book was about? (Hold up the book *Mammals* and point to the title. Show students the word-card form *mammals too*). *Mammals*

- Ask each student to provide an example of a mammal.

Can anyone give me an example of an animal that is a mammal?

- Mammals that are mentioned/photographed in pages 4-11 include: tiger, horse, dolphin, squirrel monkey, cheetah, whale, prairie dog, bat, people, hippo, rabbit/hare, cow, kangaroo, mouse, muskrat, gorilla, blue whale (largest mammal in the world).
- You may need to use the photos to help students generate a list of mammals.

- Review rationale for why these animals are called mammals.

Can anyone tell me why all of these animals are called mammals?

Students may respond, “because scientists put animals into groups or categories based on ways they are alike.”

How are these animals alike? Help me think of some things that mammals have in common. You may use the book to guide your discussion and help student’s remember what they learned about mammals. The definition of *mammals* begins on page 6.

has a backbone (p. 6)

has lungs (p.6)

is warm-blooded (p. 8)

drinks its mother’s milk as a baby (p. 9)

most are born from its mother (p. 9)

has hair/fur on its body (p.9)

Review/Pre-teach the word *survive*. Introduced in Lesson for Day 2 (p. 12-23).

- Talk to students about how there are many animals in the group scientists call mammals and all of these mammals survive differently.

From the list we made, you can tell that there are many animals that are in the group called mammals—even us! But, each of these animals needs different things to survive. What does the word *survive* mean?

Ask several students what the word *survive* means. To stay alive.

Show the word-card for *survive*.

(The word *survived* is located on p.12 2x, 15)

The word survive means to stay alive and different mammals need different things to survive. Let's see if we can think of some. I am going to say some things about what some mammals might need to survive. If you think the mammal needs the item to survive say "survive." If not, shake your head like this--Shake your head indicating "no." Ok? Let's try one.

Whales must live in the water. Survive!

Right! Whales do need water to survive. They need to live in the water in order to stay alive. Let's try some more.

People can live without air. Shake head "no."

People must have air to breathe in order to stay alive.

Air brings oxygen into our lungs.

A polar bears needs thick fur. Survive!

Right! Polar bears live where it is cold so they need thick fur to help them stay warm.

- Teacher should utilize the list of mammals students generated and create one or two "true and false" statements about them in order to give student's practice understanding the word *survive*. It is important to indicate which part of the sentence is necessary or unnecessary for the mammal "to stay alive." If possible, try to incorporate mammal definition into examples (see "people" example above).
- Teacher may want to use photos from book to cue students in determining animal habitats that are required for them to survive.

Review/Pre-teach the word *protect*. Introduced in Lesson for Day 3 (p. 24-31).

- Talk to students about how mammals have hair or fur to protect themselves. Another important thing to know about mammals is how they protect themselves. What does the word *protect* mean? Ask several students what the word *protect* means. To keep safe from injury or damage.

Show the word-card for *protect*.

(The word *protect* is located on p.24)

The word *protect* means to keep safe from injury or damage. For example, an arctic fox (show picture on page 25) has white fur to protect it. Because an arctic fox lives where it is snowy, its white fur helps it blend into the background so other animals can't see it. So, an arctic fox's fur helps protect it by keeping it safe from injury (getting hurt) by another animal. How do you think some other mammals protect themselves?

- Use the generated list of animals and have students determine one way the animal would protect itself. It is important that the child justify why the animal feature would keep the animal safe from injury or damage.

Lesson Summary

- Integrate vocabulary words, *mammal*, *survive*, *protect*, into a concluding activity.
 - Today, we learned that some animals are in a group scientist's call mammals. How are animals we call mammals alike? Elicit at least two of the following:
 - has a backbone
 - has lungs
 - is warm-blooded
 - drinks its mother's milk as a baby
 - most are born from its mother
 - has hair/fur on its body
 - We also learned that mammals need certain things to survive. What does the word survive mean? To stay alive. Give me an example of something a dog needs survive. Open-ended response.
 - We also learned that mammals have fur to help protect themselves. What does the word protect mean? To keep safe from injury or damage. Give me an example of something a deer can do to protect itself. Open-ended response.

Appendix F

Modified Open Court Fidelity of Implementation Checklist

Story Read Aloud Project
Modified Open Court Fidelity of Implementation Checklist
Booster Session
Unit: Mammals

Teacher: Cindy Scott **School:** _____

Date: ____/____/____ **Observer:** _____

Directions: The major components of today's lesson plan are outlined below. Next to each number are the words *yes* and *no*. Circle *yes* or *no* to indicate if the teacher completed each step of the activity. Write any comments in the *Comments* section.

Booster Session: Lesson 1

PTS

1. Teacher began lesson by asking students to recall the topic of the book the students had read in class (mammals). Y N _____
2. Teacher asked EACH student to provide an example of a mammal. Y N _____
3. Teacher/students define the word *mammal* Y N _____
Check all that apply
____ has a backbone
____ has lungs
____ is warm-blooded
____ drinks its mother's milk as a baby
____ most are born from its mother
____ has hair/fur on its body
4. Teacher/students define the word *survive* Y N _____
To stay alive.
5. Teacher engages in "Making Choices" activity by providing examples of items that mammals would need to survive. Y N _____
(Students should respond by saying "Survive" or by shaking their heads "no.")
6. Teacher/students define the word protect Y N _____
To keep safe from injury or damage

7. Students provide “Reasons and Examples” of how animals protect themselves. Y N _____

Lesson Summary “Using all three words

8. Teacher asks students to define *mammal*. Y N _____

9. Teacher asks students to define *survive*. Y N _____

10. Students provide examples of what a dog needs to survive Y N _____

11. Teacher asks students to define *protect*. Y N _____

12. Students provide examples of what deer can do to protect itself. Y N _____

Total time spent on the lesson (in minutes) = _____

Comments:

Please note any activities that were out of the ordinary for the routine of the classroom (e.g. fire drills).

Score Fidelity of Implementation: To score fidelity of implementation assign the following points for each critical point evaluated:

yes = 2 points partial = 1 point no = 0 points N/A=do not count

Add all points, and then divide by the total possible points.

Points Earned = _____ Total Possible = _____ Fidelity = _____

Appendix G

Pearson Correlation Coefficients of Assessments for Booster and No Booster Groups

Pearson product-moment correlation coefficients were calculated for the four pre- and post-test measures. In general, results revealed low-to-moderate correlations between pretest measures and pretest and post-test measures.

	SVA (Pre)	UC (Pre)	CQ (Pre)	SG (Pre)	SVA (Post)	UC (Post)	CQ (Post)	SG (Post)
SVA (Pre)	---	.388**	.215	.346*	.611**	.412**	.210	.255
UC (Pre)		---	.227	.722**	.263	.501**	.122	.094
CQ (Pre)			---	.206	.175	.383*	.216	.178
SG (Pre)				---	.467**	.402**	.095	.182
SVA (Post)					---	.246	-.064	.155
UC (Post)						---	.343*	.626**
CQ (Post)							---	.463**
SG (Post)								---

Note. SVA = Story Vocabulary Assessment (pretest/post-test), UC = Utterance Count, CQ = Comprehension Questions, SG = Story Grammar
 * $p < .05$ (2-tailed)
 ** $p < .01$ (2-tailed)

CURRICULUM VITA

Name of Author: Eve Marie Puhalla

Place and Date of Birth: Bristol, Pennsylvania; April 17, 1970

Name of Parents: Father: William H. Puhalla, Mother: Jean M. Puhalla

Academic Degrees

2005	Ph.D.	Lehigh University	Major: Special Education Concentration: High Incidence Disabilities (Learning Disabilities, Academic Interventions, Literacy)
1995	M.A.	The University of Findlay	Major: Special Education Concentration: Children's Literature
1992	B.S.	Elizabethtown College	Major: Elementary Education Minor: Business Administration

Teaching Certification

Pennsylvania:	Mentally and/or Physically Handicapped K-12 (Level II) Elementary Education K-6 (Level 11) Private Academic Schools N-8 Supervisor of Special Education (Pending)
Ohio:	Elementary Education 1-8 Special Education-Specific Learning Disabilities N-12

Research Topics

Dissertation topic: "Teaching Vocabulary from Narrative and Information Texts: Examining the Effects of Instructional Intensity and Judicious Review on the Vocabulary and Expressive Language Performance of First-Grade Children At-Risk of Early Reading Difficulties"

Doctoral qualifying project: "Teaching Vocabulary from Storybooks: Examining the Effectiveness of Explicit Instruction on the Receptive and Expressive Vocabulary of Children Who Are At-Risk for Reading Failure."

Master's thesis topic: "Portrayal of the Disabled in Literature-Based Basal Reading Series."

Professional Experience

2004-2005	Intern, Supervisor of Special Education	Northampton Area School District Northampton, PA
2003-Current	Project Coordinator, PA site Story Read Aloud Project CFDA 84.305G	Pacific Institutes for Research Eugene, OR
2002-2005	Adjunct Professor	Northampton Area Community College Bethlehem, PA
2000-2004	Adjunct Professor Acting Instructor of Special Education Supervisor of Student Teachers	Lebanon Valley College Annville, PA
2001-2003	Co-instructor with Lana Edwards	Lehigh University Bethlehem, PA
2002-2003	Classroom Plus Tutor	Self-employed Freemansburg, PA
2001-2003	Research Assistant Data Collector, Project PASS	Lehigh University Bethlehem, PA
1997-2000	Learning Support Teacher Gifted and Talented Coordinator Homebound Instructor	Halifax High School Halifax, PA
1996-1997	Central Regional Field Director	Kappa Delta Pi International Headquarters West Lafayette, IN
1994-1996	Teacher of the Developmentally Handicapped	Leipsic Public School Leipsic, OH
1992-1993	Preschool Teacher	Tabor Children's House Doylestown, PA

Honors and Awards

Honor an Educator Award: Presented by Michigan Eastern State University
Kappa Delta Pi

College Courses Taught

Children's Literature
The Paraeducator Professional
Introduction to Special Education
Introduction to Exceptional Children
Diagnostic and Prescriptive Teaching in Special Education and Included Settings
Assessment, Evaluation, and Response Strategies for Students with
Exceptionalities

Professional and Academic Association Memberships

Council for Exceptional Children (CEC)
Council for Learning Disabilities (CLD)
Teacher Education Division of CEC (TED)
The Children's Book Council (CBC)
Mazza Enthusiast, Mazza Museum of Children's Book Illustration, The University of
Findlay

Service

2004-2005	Department representative to the Graduate Student Senate: Lehigh University
1997-Current	Advocate for parents with children with disabilities
2000-2001	Best Buddies faculty advisor: Lebanon Valley College
2001-2003	Scholastic Book Drive coordinator: Lebanon Valley College
1997-2000	Lykens Community Theater, Volunteer 1999-2000 Board of Directors
1997-2000	Student Assistance Team member, In-service Committee chair, IDEA trainer, Scheduling Committee member, Discipline Committee member: Halifax School District

Presentations & Professional Development Trainings

Puhalla, E.M. & D'Huyvetters, K.A. (January 2005). *Chapter 15: Section 504*. Northampton Area School District, Northampton, PA.

Puhalla, E.M. & D'Huyvetters, K.A. (January 2005). *Progress Monitoring: Instructional Decision Making*. Northampton Area School District, Northampton, PA.

Puhalla, E.M. (October, 2004). *Progress Monitoring: Nuts and Bolts*. Northampton School Area District, Northampton, PA.

Puhalla, E.M. (October, 2004). *Teaching Vocabulary from Storybooks Utilizing Explicit Instruction*. Council for Learning Disabilities, Las Vegas, NV.

- Puhalla, E.M., & Edwards, L.L. (April, 2004). *Promoting Vocabulary Through Storybook Reading: A Research to Practice Discussion and Demonstration*. International Conference of the Council for Exceptional Children, New Orleans, LA.
- Puhalla, E.M. (October, 2003). *Teaching Vocabulary from Storybooks Utilizing Explicit Instruction*. Pennsylvania Federation Council for Exceptional Children, Grantville, PA.
- Puhalla, E.M. (July, 2003). *High Fantasy and Harry Potter*. The University of Findlay Mazza Summer Institute, Findlay, OH.
- Puhalla, E.M. (November, 2002). *Using Picturebooks in the Middle and High School Classroom*. Student Pennsylvania State Education Association, Monroeville, PA.
- Puhalla, E.M. (July, 2002). *Using Picturebooks in the Middle and High School Classroom*. The University of Findlay Mazza Summer Institute, Findlay, OH.
- Puhalla, E.M. (1997). *Including Students with Disabilities into the General Education Classroom*. Youngstown State College, Youngstown, OH.

Funded Research

- Puhalla, E.M., & Edwards, L.L. (September 2002-June 2002). "Storybook Reading in Kindergarten Classrooms: Examining the Benefits of Integrating Explicit Vocabulary Instruction in Storybook Reading for Children At-Risk of Early Reading Failure," Lehigh University Student Research Grant, \$500.