

University of Nevada-Reno

The Relationships among Concept Sorts, Storybook Reading, Language-Based Print Awareness, and Language Proficiency in the Vocabulary Learning of Diverse Kindergarten Children

A dissertation submitted in partial fulfillment of the requirements for the degree of Doctor of Philosophy in Literacy Studies

by

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## ABSTRACT

This study examined how providing vocabulary instruction through storybook read alouds and concept sorts influenced vocabulary acquisition and the relationship among vocabulary and language-based print awareness and language proficiency. A non-random sample of three kindergarten classrooms participated in this study. Participants in the study were kindergarten children (N = 61), from low socioeconomic status families, whose primary language was either Spanish (47) or English (14) and three kindergarten teachers. There was a two-week session of vocabulary instruction. Two of the classrooms were assigned to the storybook read aloud plus concept sorts treatment and one classroom was assigned to the storybook read aloud only condition. Although vocabulary gains were demonstrated from both the storybook read aloud plus concept sorts treatment and the storybook read aloud only condition, children who received the storybook read aloud plus concept sorts treatment learned significantly more of the targeted vocabulary compared to the children who received the storybook read aloud only condition. Receptive vocabulary knowledge as measured by the PPVT-IV and concept of word were related to the learning of the targeted vocabulary. Discussion focuses on the effectiveness of concept sorts as a strategy for promoting acquisition of new vocabulary.

**Keywords:** concept sorts, English learners, language-based print awareness, language proficiency, storybook read aloud, vocabulary

DEDICATION

To my mother, who believed in me, and believed in my dreams.

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## TABLE OF CONTENTS

ABSTRACT	i
DEDICATION	ii
ACKNOWLEDGEMENTS	iii
CHAPTER 1	1
INTRODUCTION	1
Statement of the Problem	2
Rationale and Purpose	4
CHAPTER 2	9
REVIEW OF LITERATURE	9
Theories of Reading Development	9
Chall's Developmental Model	10
Wolf's Developmental Model	13
Ehri's Model	15
Synchrony Model of Development	21
Vocabulary Gap	24
Vocabulary Development	26
Vocabulary Learning through Read Alouds	27
Explicit Vocabulary Instruction Embedded within Storybook Reading	30
Selecting Targeted Vocabulary	31
Explicit Vocabulary Instruction	33
Explicit Vocabulary Instruction with English Language Learners	46

Explicit Vocabulary Instruction using Taxonomical Structures	53
Theoretical Framework for a Concept Sort Vocabulary Intervention	56
CHAPTER 3	60
METHOD	60
Research Questions	60
Design	62
Project Timeline	65
Participants	66
Description of Instruments	66
Peabody Picture Vocabulary Test-IV	66
Target Word Test	67
Phonological Awareness Literacy Screening-Kindergarten	68
Language Assessment System	69
Instructional Practices	69
CHAPTER 4	73
RESULTS	73
Analyses	73
Differences across Classrooms on PALS-K Subtests	73
Differences across Classrooms on Language Proficiency	74
Differences across Classrooms on the PPVT-IV	75
Learning of Target Vocabulary	76
Differences in Vocabulary Learning	79
Correlations among Assessments	81



Multiple Regression Analyses	83
Qualitative Language Differences among Classrooms	87
Fidelity	90
CHAPTER 5	92
DISCUSSION	92
Vocabulary and Reading Development	92
Concept of Word in Text	92
Efficacy of Storybook Read Alouds and Concept Sorts and Vocabulary Acquisition	96
Instructional Implications	99
Limitations	102
GLOSSARY	104
REFERENCES	119

## LIST OF APPENDICES

Appendix A: Storybook Reading Instructional Framework	105
Appendix B: Concept Sorts Standards and Indicators and Framework	110

## LIST OF TABLES

Table 1: Means and Standard Deviations on Literacy Measures by Classroom	74
Table 2: Demographic Characteristics of Participants by Classroom	75
Table 3: Means and Standard Deviations on PPVT-IV by Classroom	76
Table 4: Means and Standard Deviations on PPVT-IV by Language Status	76
Table 5: Means and Standard Deviations for Pretest, Posttest, and Delayed Posttest Measures by Time	77
Table 6: Means and Standard Deviations for Pretest, Posttest, and Delayed Posttest Measures by Treatment	79
Table 7: Means and Standard Deviations for Pretest, Posttest, and Delayed Posttest Measures	80
Table 8: Correlations among Total Delayed Posttest, Alphabet Knowledge, Letter/Sound Knowledge, COW, QSI, PPVT, and Total Pretest	82
Table 9: The Bivariate and Partial Correlations of the Predictors with Total Posttest 2	86

## LIST OF FIGURES

Figure 1: Regression Equation of Emergent Literacy Measures	77
Figure 2: Regression Equation of Vocabulary Measures	85
Figure 3: Distributions of Pretest, Posttest, and Delayed Posttest Scores	86
Figure 4: Symmetric Measures	91

## CHAPTER 1

### **Introduction**

Vocabulary knowledge in the preschool and primary years remains a potent predictor for later academic and school success (2006; Hart & Risley, 1995, 2003; Snow, Burns, & Griffin, 1998). Cunningham and Stanovich (1997) reported that vocabulary assessed in the first grade highly-correlated with comprehension in the eleventh grade. In addition to the vital role vocabulary plays in reading comprehension, it also contributes to the development of critical emergent literacy skills such as phonological awareness and print concepts (Dickinson, McCabe, Anastasopoulos, Peisner-Feinberg, & Poe, 2003; Justice, Kaderavek, Xitao, Sofka, & Hunt, 2009; Roberts, 2005).

Children begin to learn the meaning of words as they acquire language. This usually occurs in the context of home and family. It is through quality, language-rich interactions in these natural settings that children first develop vocabulary. Home environments significantly influence the size of children's vocabularies (Adams, 1990; Biemiller & Slonim, 2001; Hart & Risley, 1995).

By the time children first enter school the size of their vocabularies vary greatly. Second language learners and children from low socioeconomic groups enter school with vocabularies substantially behind their more advantaged English-speaking peers (Hart & Risley, 2003; Snow, et al., 1998). Biemiller and Slonim (2001) estimated that English-speaking children who scored in the lowest quartile on the Root Word Inventory enter kindergarten with a root word vocabulary as low as 1,900 and children who scored in the highest quartile enter kindergarten with a root word vocabulary as high as 3,500 words.

Cunningham and Stanovich (1997) found the trajectory of vocabulary acquisition for the linguistically advantaged and linguistically impoverished continued to diverge throughout the formal school years. This disparity emphasizes the importance of focusing on vocabulary development and instruction in the preschool and early primary school years.

### **Statement of the Problem**

Despite the research that suggests the importance of fostering vocabulary growth during the preschool and primary school years, evidence indicates that little vocabulary instruction occurs during this critical period. Dickinson, McCabe, and Clark-Chiarelli (2004) observed 77 Head Start classrooms and reported that teachers rarely used sophisticated vocabulary and provided minimal opportunities to individually engage children in activities that supported their vocabulary and literacy development. In an examination of early literacy curricula used by Early Reading First (a component of President Bush's Good Start, Grow Smart initiative) Neuman and Dwyer (2009) found "little exists right now that is helpful to teachers who want to do a better job of providing explicit instruction in vocabulary to young children" (p. 391). In the ten programs examined, little to no guidance was provided to teachers for teaching new words. For example, only three of the ten programs provided specific suggests for using a variety of strategies to teach vocabulary. In a related study, Beck and McKeown (2007b) reported a similar lack of attention to explicit vocabulary instruction in the primary grades. Biemiller and Boote (2006) attribute the divergence of vocabulary levels during the school years to the lack of vocabulary instruction in the primary grades.

Prior to entering school, children acquire vocabulary and oral language skills incidentally through interactions with adults and peers. When adults provide opportunities for children to engage in rich conversations, they create an important context for learning new

vocabulary. Although these oral contexts play a critical role in developing children's vocabulary, they are not enough to sustain vocabulary growth once children enter school. One reason for this is that these conversations contain a relatively low amount of unfamiliar or rare words (words outside the vocabulary of a fourth through sixth grader) (Cunningham, 2005). Therefore, written language becomes an important context for learning vocabulary.

An analysis of spoken and written language revealed children's literature as an excellent resource for enhancing vocabulary development. In their analyses of oral and written language in a variety of texts, Hayes and Ahrens (1988) and Cunningham (2005) found children's literature contains more rare words and provides a richer source of language than all other forms of oral communication, except expert testimony. Since children in the preschool and early primary years have not yet learned or are in the process of learning to read, access to this type of literature is limited. The most effective way for children to gain access to these rich resources is through the read aloud.

Through storybook reading, children acquire vocabulary incidentally as they listen to the story read aloud (Senechal, LeFebvre, Hudson, & Lawson, 1996; Senechal, Ouellette, & Rodney, 2006; Whitehurst, et al., 1994). The narrative structures found in most storybooks provide a rich context that allows children to attach meaning to novel words. In an earlier vocabulary study, Robbins and Ehri (1994) reported a significant growth in kindergarteners receptive vocabularies when they listened to a story twice and when the targeted words were repeated.

Understanding that incidental word learning is not enough to change the trajectory for children with low or impoverished vocabularies, more recent vocabulary research embeds explicit vocabulary instruction within the storybook read aloud (Beck & McKeown, 2007b;

Biemiller & Boote, 2006; Roberts, 2008; Silverman, 2007a; Wasik, Bond, & Hindman, 2006). The most common practices for explicit vocabulary instruction in the context of a storybook read aloud include: (a) selecting vocabulary that is interesting, stimulating, and of high utility; (b) having children repeat the vocabulary; (c) providing a brief explanation of a word's meaning; and (d) engaging children in discussions that allow them to think about and use the vocabulary in cognitively challenging ways (Hiebert, 2005; Scott, Lubliner, & Hiebert, 2006).

However, many questions still remain about the most appropriate and effective approaches for developing children's vocabularies. Should equal attention be paid to developing both breadth and depth of word knowledge during the preschool and primary years? What are the most appropriate words to select for vocabulary instruction? How many words should be selected? How much instructional time needs to be spent on explicit vocabulary instruction? How should vocabulary instruction, both implicit and explicit, be integrated throughout the instructional day? What instructional activities support children's ability to form and understand the relationships that exist among complex concepts? Are vocabulary programs as beneficial for English language learners as they are for their English only speaking peers? Clearly, there remains a fundamental need for focusing on vocabulary instruction in the preschool and early primary school years.

### **Rationale and Purpose**

Reading storybooks aloud continues to be a recommended practice for fostering vocabulary growth and developing conceptual knowledge (Cunningham, 2005; Wasik, et al., 2006). Specific aspects and behaviors of storybook read alouds have been associated with enhancing children's vocabulary. A single reading of a storybook appears to be associated



with receptive vocabulary development, and multiple readings are necessary to develop children's expressive vocabulary (Hargrave & Senechal, 2000; Senechal, et al., 2006; Whitehurst, et al., 1994). In addition to the multiple readings, approaches that use a dialogical interactional reading approach and provide direct explanations of word meanings while reading are equally as important (Beck & McKeown, 2007a; Hiebert, 2005; McKeown & Beck, 2006; Whitehurst, et al., 1994).

In addition to the embedded storybook reading approaches, recent vocabulary research uses methods that use explicit instructional activities following the reading of the story (Beck & McKeown, 2007b; Schwanenflugel, et al., 2005; Silverman, 2007b). The purpose of this practice is to provide opportunities for children to use the vocabulary in a variety of contexts without interfering in their ability to construct meaning of the story.

Important considerations must be made in deciding which words are the most appropriate to select and which activities are the most appropriate for enhancing vocabulary learning. Recently, Beck and McKeown (2007b) and Biemiller and Slonim (2001) provide specific guidelines for word selection. Beck and McKeown recommend selecting sophisticated or tier-two words for vocabulary instruction. Tier-two words are words that are found across a variety of domains and would be of high utility and high-frequency among mature language users. These are the words that learners would encounter in a diverse assortment of written materials. Since they are found in the oral and written registers of mature, literate language users, they would be the most appropriate to add to children's productive vocabulary. Whereas Biemiller and Slonim (2001) feel that root words appear to be learned in a similar sequence by most children and the order in which words are learned can be predicted by using the *Living Word Vocabulary (LWV)* as a guide. Therefore,

vocabulary instruction should focus on the words that constitute between 40-80% of a target groups' knowledge. Biemiller (2006) notes that children learn the meanings of these words relatively easy and therefore make the greatest gains. Beck and McKeown (2006) contend that there is no need to pay special attention to these words because they are most likely to be learned through grade-appropriate materials and through simple explanations.

Furthermore, Beck and McKeown (2006) recommend focusing instruction on a small selection of words. They feel that if children are to acquire and become proficient in using sophisticated words, vocabulary instruction should focus on developing knowledge at a depth where connections can form. This allows children to access their knowledge so they can make sense of the vocabulary and use the vocabulary in a variety of contexts. On the other hand, Biemiller and Slonim (2001) suggest that teachers introduce at least 20 words each week, given that, at the most, only 40% of word meanings are learned.

Both approaches to vocabulary development emphasize strong vocabulary programs that systematically increase children's vocabularies during the preschool and early primary years. Although each approach benefits the vocabulary development of children who enter school with impoverished vocabularies, a vocabulary program that integrates the word criteria from both approaches may have greater value and be more effective in building both breadth and depth of vocabulary knowledge.

Vocabulary tasks that call for children to make associations with meaning elements are needed to build a greater depth of understanding of word meanings. World of Words (WOW), a preschool vocabulary program developed by Neuman, Dwyer, and Neuman (2008) uses taxonomic structures to build semantic knowledge by organizing concepts through their shared properties. By using taxonomies, children group things (e.g., pets-dogs,

cats) by similar properties. Similarly, concept sorts used by Bear, Invernizzi, Templeton, and Johnston (2008) expand children's conceptual understanding and word knowledge and could be a promising approach for having children process words more deeply. Therefore, a vocabulary program that incorporates concept sorts with storybook reading may build both breadth and depth of word knowledge as well as accelerate word learning.

This study addresses important issues in the research of vocabulary instruction and is significant for the following reasons: (a) what instruction and teaching practices accelerate vocabulary learning, particularly with a focus on students who struggle to learn and children who are English language learners; (b) few studies have examined the efficacy of concepts for vocabulary development; (c) what practices facilitate quality interactions to support vocabulary learning and for the teacher and research, provide important insights into children's thought processes as they learn new vocabulary; and (d) what can we learn from teachers' views and perspectives on appropriate and effective instructional methods.

This study replicates and extends vocabulary research by replicating traditional vocabulary approaches (e.g., storybook reading, dialogic reading, and direct explanations of word meanings) and adding concept sorts as a viable method to enhance children's vocabulary learning. The following research questions guide this study: Will concept sorts improve the vocabulary learning of kindergarten age children? Other questions involving student populations, grouping configurations, and development will also be addressed. These derivative questions are studied as I aim to examine other variables that could shape students' learning (e.g., word counts, the early literacy assessments, teacher viewpoints): (a) How does children's language status (English as primary language and English as a second language) affect word learning? (b) What is the relationship among orthographic knowledge, alphabet

knowledge, letter-sound knowledge, concept of word, Total Pretest score, and PPVT-IV with the learning of the targeted vocabulary? (c) What are the qualities of the interactions between the teachers and students during concept sorts and storybook read-alouds (e.g., number of times the word is spoken and heard, type of teacher talk-supportive or basic)?

## Chapter 2

### **Review of Literature**

As researchers refine their understanding of vocabulary learning and generate new theories, they continue to highlight the critical role vocabulary plays in children's literacy development. In this chapter I will discuss reading development, review storybook read aloud and vocabulary research and relate it to issues and developments in current vocabulary instruction. First, I will share theories of reading development. Second, I will discuss the gap in vocabulary knowledge that currently exists when children first enter school and the challenges of narrowing this gap will be raised. Next, the research on storybook reading, specifically read alouds, will be reviewed. Finally, this section concludes with a description of vocabulary studies designed to raise current levels of vocabulary knowledge and that may offer possibilities for narrowing the vocabulary gap among diverse populations.

### **Theories of Reading Development**

Learning to read never just happens. It is a complex phenomenon that involves the integration of a variety of language-based skills and knowledge. Learning to read is a result of children's cumulative experiences with language and literacy. As children engage in literacy, they begin to develop hypotheses about reading, writing, and spelling. At first these hypotheses appear quite crude, as demonstrated by their emergent behaviors, but are actually fundamentally sound. The more opportunities children have to engage with literacy and literacy-related activities the more opportunities they have to test their hypotheses. Not only do their skills and knowledge develop overtime and with experience, they develop in sophistication as well.

There is a long history of using developmental theories to describe the reading process (Chall, 1996; Ehri, 2000; Ehri & Roberts, 2006; Ehri & Wilce, 1985; Wolf, 2007). Laying the foundation for these developmental models is the belief that all children move through a spectrum of stages or phases that follow a predictable and stable sequence. Each stage or phase of development is characterized by specific literacy behaviors. Children progress from a general, global understanding of print to reading to reflecting critically on their personal interpretation of what they read as well as appreciating other viewpoints (Chall, 1996; Rosenblatt, 1998). It is important to note that, although all children progress through these stages, they do not do so in the same way or at the same time.

### **Chall's Developmental Model**

Chall (1996) describes the reading behaviors observed as children progress from novice to expert. The idea of using stages to describe the qualitative shifts that occur in learning to read means that readers exhibit certain characteristics as they interact with print at different points in their development. These behaviors or characteristics are then associated with a particular stage of development. They illustrate “growth in the ability to read language that is more complex, less frequently encountered, more technical and more abstract, and by changes in how reading is viewed and used” (p. 12). Although Chall has provided ages and grades that correspond to a particular stage, these ages and grades should be considered as general approximations.

The first stage, stage 0, the *pre-reading* stage occurs between birth and age 6. This stage represents the language and literacy knowledge children acquire prior to formal schooling. It is during this period that children experience a sizeable growth and control over the semantics and syntax aspects of language. With this growing control of language,

children begin to develop some critical insights into the phonology of language (i.e. phonemic awareness). It is also during this time that children begin to understand the function and concepts of print. Recognizing the “golden arches” as McDonald’s and other environmental print concepts is an important achievement. Understanding that books tell a story and these books are read from front to back, top to bottom, and in a left to right progression are also important achievements at this stage.

Stage 1 reading (ages 6-7; grades 1-2), is referred to as the *initial reading or decoding stage*. The most notable aspect of this stage is that children break the “alphabetic code.” Children at this stage internalize the grapheme-phoneme relationship. They understand that words are made up of sounds and those sounds are represented by letters. The skills and knowledge acquired in this stage of development provide the foundation for stage 2 reading which begins at approximately at the ages of 6 and 7 and are typically in grades 2 and 3.

*Confirmation, fluency, ungluing from print* describe the achievements made in the second stage. At this stage, children consolidate what they learned in the previous stages, particularly their knowledge of the alphabetic principle. They use their decoding skills more efficiently while also acquiring more complex phonic features and generalizations. It is at this stage that children begin to develop the fluency that is an essential prerequisite of the next three stages.

Fourth grade marks the beginning of the third stage, *reading for learning the new: a first step*. It is during this stage that children begin the transition from learning to read to reading to learn. In order for children to successfully make this transition, they need to be fluent readers. This means children can efficiently use word strategies to read unfamiliar words, retrieve familiar words from long-term memory, and attach meaning to the words

read, as well as, reading in prosodic manner. Fluent reading allows children to use comprehension strategies such as making connections with the text, visualizing, and making inferences. Chall (1996) argues that children's background knowledge, vocabulary, and cognitive abilities are limited at this point in development and would benefit most from instruction that has a clear purpose and uses material with a single viewpoint and is not technically complex. It is at this point that children's vocabulary knowledge greatly influences comprehension especially in understanding the concepts presented in content-specific texts (Cunningham & Stanovich, 1997; Stanovich, 1986; Tannenbaum, Torgesen, & Wagner, 2006).

Once children approach reading from multiple viewpoints and perspectives they are considered sophisticated readers and in stage 4, *multiple viewpoints*. Generally, this occurs during the high school years or between the ages of 14-18. The majority of reading done at this stage is comprised of informational texts where the readers are expected to summarize and report on a variety of facts, theories, and opinions as well as dealing with complex issues brought up in the literary works that are typically found in a high school English curriculum. The ability to glean important information from a variety of texts and appreciate multiple viewpoints is an important characteristic of this stage.

The final stage, *construction and reconstruction-a word view*, represents the most mature stage of reading development. This stage occurs at the college level or at age 18 and above. Reading at this stage involves higher level processing skills (e.g. analysis, synthesis, and judgment) in the construction of knowledge of the world and one self. Readers at this stage use their reading knowledge of a topic to make decisions when choosing appropriate reading material. They also are highly skilled and adept in their ability to consciously adjust



their reading rate and employ the most appropriate comprehension strategies based on the level of difficulty. Readers who have successfully made the transition into this final stage of reading have engaged in a wide range of reading activities where they read different texts and genres on a variety of topics during the previous stage of development. Readers at this stage reflect on their reading and have developed the skills and knowledge necessary “to construct knowledge on a high level of abstraction and generality and to create one’s own ‘truth’ from the ‘truths’ of others” (p. 24).

### **Wolf’s Developmental Model**

Similar to Chall’s reading stages, Wolf (2007) uses the stages of *emerging pre-readers*, *novice readers*, *fluent comprehending readers*, and *expert readers* to describe the behaviors of readers as they progress developmentally. The behaviors that best describe the emerging pre-readers are the experiences with sounds, images, vocabulary, language, print, and other literacy-related activities children have during their first five years. These formative experiences contribute to readers’ perceptual, social, and cognitive development and prepare them for the next stage of development, novice readers.

Novice readers learn how to decode print and understand what has been decoded. Early in this stage, readers have only a partial understanding of the alphabetic principle. Through instruction and opportunities to engage in literacy-related activities readers in this stage discover that letters represent the sound of the language and with this knowledge “break the alphabetic code.” The breaking of the alphabetic code is aided by the children’s developing knowledge for the phonological, orthographic, and semantic areas of language learning.

As children make the transition from the novice stage to the *fluent comprehending readers* stage, they begin to consolidate their phonological and orthographic development as they approach fluency in their reading. Critical to their development at this point is the need to add at least 3,000 words to their reading vocabulary. For this to occur, they must learn many of long and ambiguous vowel patterns as well as morphemes such as “s,” “ed,” “un,” “re,” “er,” and “ing.” In addition to learning these morphemic units, readers begin to understand that by adding or removing a morpheme may change the grammatical function of the word. They also develop the ability to “sight chunk” as they read and this ability drives their fluency development. That is readers now have the ability to read the word untraceable by chunking it, un-trace-able, as opposed to sound it out, u-n-t-r-a-c-e-a-b-l-e. Readers at this stage move beyond simple decoding to decoding fluently.

Wolf (2007) defines fluent comprehending readers as readers who can ... utilize all the special knowledge a child has about a word – its letters, letter patterns, meanings, grammatical functions, roots, and endings – fast enough to think and comprehend. Everything about a word contributes to how fast it can be read. (p. 130-131)

Therefore, fluent comprehending reading is more than just speed and automaticity. Fluent comprehending reading depends on automatic recognition of a word’s pronunciation and meaning from meaning. The ability to rapidly identify a word provides the reader with the temporary space needed to use comprehension strategies and skills in order for the reader to connect new information to previous experiences and prior knowledge. At this stage, readers are moving beyond surface-level skills and they are learning to strategically apply higher order processing and reasoning strategies.

Expert readers bring a wealth of knowledge about the reading domain to their reading and begin to approach reading with a specific intent and purpose. They can efficiently and effectively apply a repertoire of metacognitive strategies based on their learning goal. Wolf (2007) explains that what occurs inside the expert reading brain is “the almost instantaneous fusion of cognitive, linguistic, and affective process...” (p. 145). Expert readers approach reading with a wealth of content knowledge and have the ability to effortlessly activate linguistic and cognitive processes to comprehend written text. They also have the motivation to read often on a variety of topics and to persevere should the reading become difficult.

### **Ehri’s Model**

Both Chall and Wolf describe the reading behaviors over the course of development from the pre-reader/emergent reader to the expert reader. In both models of development, they stress the importance of the reader’s ability to read words effortlessly and fluently. Fluent reading marks the successful transition from the novice reader to the more advanced reader. In order to read fluently, children must have the ability to read words by sight. When readers read by sight, they have the ability to automatically identify the pronunciation of the word and attach the correct meaning to the word.

According to Ehri (2005), readers learn to read words by sight in three ways: decoding, analogizing, and predicting. When readers decode a word they segment a word into phonemes and then blend those phonemes together to form the word. In addition to sounding out the individual sounds, readers also decode by “chunking” familiar word parts and blending them together to form the word. Another strategy to figure out an unfamiliar word is to relate the unfamiliar word to a familiar word. This is referred to as analogizing. For example, to read the unfamiliar word *scratch* a reader would relate the word to the

known word *batch*. In prediction, readers figure out the unknown word by using letter and context clues to make a best guess effort.

As readers become more proficient at using these particular word strategies, they begin to identify words as a single unit. Ehri and Wilce (1985) refer to this as *unitization*. This means that readers no longer need to decode a word a phoneme at a time. They recognize the word as a distinct unit without having to pause between word parts. Sight word reading is a necessary prerequisite if students are to successfully read and comprehend text. Readers who have difficulty at the word level have less cognitive space to spend on activating linguistic and cognitive processes necessary to comprehend text because they have to shift their attention away from constructing meaning to applying word strategies. Therefore, a relatively large sight word vocabulary is necessary for fluent, thoughtful reading.

To understand the importance of sight word vocabulary to fluent reading, we must first understand how readers acquire sight words. According to Ehri (2005), this is accomplished through a *connection-forming* process. In this process, connections among a word's spelling, a word's pronunciation, and a word's meaning are formed in memory. Rosenthal and Ehri (2008) argue that it is the alphabetic system that holds these connections together. The use of the alphabetic system in the spelling of a word provides a powerful mnemonic for storing and retrieving these connections in memory. This process begins with the understanding that words are broken down into phonemes and the phonemes are represented by graphemes. In order to develop a sight word reading vocabulary, readers use their knowledge of the letter-sound relationship along with their knowledge of familiar and recurring spelling patterns to sound out unfamiliar words. After having several opportunities

to use this approach with the same word, the spelling cements the word as a distinct unit in the reader's long-term memory. Once a word has been successfully stored and the reader can easily retrieve that word it is considered a sight word.

How then do readers begin to form these connections? These connections begin to form as readers' knowledge of the alphabetic system develops. Ehri (2005) uses four phases to describe the distinctions that occur in the course of this development. They are the *pre-alphabetic phase*, the *partial alphabetic phase*, the *full alphabetic phase*, and the *consolidated alphabetic phase*.

If sight word reading at the pre-alphabetic phase occurs, it is a result of a word's visual features; by the way the word looks. During this phase children have no or very limited alphabetic knowledge and because of this rely on visual cues. For example, children may read the word *look* because the two *os* in the middle resemble eyes, but cannot distinguish the word *look* from similar words *book*, *hook*, and *took* because they have not yet discovered the alphabetic principle (Ehri, 2005; Ehri et al., 2006; Ehri et al., 1985; Rosenthal et al., 2008).

Context cues of environmental print are another cue readers in this phase of development attend to as they attempt to understand print. Children's lives are surrounded with environmental print, from popular brand names of favorite cereal, candy bars, and soda pop to popular store and restaurant franchises. As long as Cap'n Crunch is with the context of the cereal box or the cereal's character, children can accurately identify the words. However, if you were to remove the context (e.g., cereal box, cereal's character) by placing the words on a blank sheet of paper the chances for accurately identifying the words are drastically reduced. Because of its strong contextual support, environmental print is often

used to provide the motivation and the opportunity to develop children's print and alphabetic knowledge.

Although children may use visual or contextual cues to identify words in print and are learning important print-related concepts, they are not yet reading in the conventional sense because they are not yet using alphabetic cues. They are emergent readers. In addition to using visual and contextual cues, emergent readers pretend to read by telling the story through the pictures or by memorizing a favorite story and retelling the story for memory. They use pictures, letter-like symbols, or random letters to communicate their ideas in writing.

Using knowledge of the alphabet to read and write words marks the transition to the partial alphabetic phase. Partial alphabetic readers use their knowledge of letter names and sounds and apply that knowledge to read words. Since knowledge of the alphabetic system is still developing, the connections that are formed are usually limited to the initial and final consonant sounds or boundary letters (e.g. *bat*, *bet*, and *bit*). These partial connections are limited to initial and final consonants because these readers do not yet have full phonemic awareness (Morris, Bloodgood, Lomax, & Perney, 2003). At this point in development, they still experience difficulty segmenting a word into all of its phonemes, especially vowels. These partial connections are also reflected in their spellings representing the most salient sounds of the words and omitting the vowel sound (e.g. using *bt* to represent the spelling for the words *bat*, *bet*, and *bit*).

Full connections between the word and its sounds occur once children have a *concept of word* in print. Concept of word is the ability to match the spoken word with the written word. When children have concept of word, they demonstrate their understanding that words are units of text that are separated by spaces. For example, when reading "*Humpty Dumpty*

*sat on a wall*” children can accurately fingerpoint to the individual words as they read the sentence.

In a longitudinal study, Morris et al. (2003) investigated the relationship between the development of early reading and phonemic awareness, specifically concept of word and phonemic awareness, by testing an emergent model of early reading development. Using path analysis they examined the relationships among certain variables associated with early reading development (e.g. letter knowledge, letter-sound knowledge, concept of word, word reading, etc.). The results of the study confirmed the developmental model proposed by the researchers. That is they found that in children’s reading development they first become aware of initial consonant sounds, which is soon followed by final consonant sounds. This understanding of initial and final consonant sounds provides what the researchers refer to as consonant boundaries. These consonant boundaries facilitate the development of full concept of word because children begin to see words as consolidated units. Once children have full concept of word they then demonstrate the ability to segment single syllable words by individual phonemes. Morris et al. (2003) feel that the results suggest “that concept of word in text may play a linchpin role in reading development, helping to bridge an early form of phoneme awareness (beginning consonant) with a later form (segmentation)” (p. 320).

When children have the ability to segment a word into phonemes and match the phonemes to graphemes they are considered full-alphabetic phase readers. Their ability to read sight words results from forming these full connections between the word’s spelling and its phonemes. The process for reading sight words goes beyond the orthography of the word. Although the majority of grapheme-phoneme correspondence are known in the full alphabetic phase, effective reading also involves the words meaning and pronunciations as

well as its orthography (Adams, 2001). Using this framework, when readers automatically use their alphabetic knowledge, activating grapheme-phoneme correspondence, the spelling of the word becomes fully bonded to the word's pronunciation and meaning in memory (Rosenthal et al., 2008).

In addition to establishing strong associative links among a word's spelling and its pronunciation and meaning, storing a word in memory by its spelling allows the reader to accurately identify the word improving both fluency and comprehension. Fluency begins to increase because similarly spelled words are less likely to be misidentified because the word's orthography allows it to be stored in memory as a distinct unit. Full alphabetic readers reflect this alphabetic knowledge in their ability to decode unfamiliar words and in their invented spellings where each phoneme is represented.

As readers in the full alphabetic phase continue to increase their sight word vocabulary, they begin to recognize and use frequent spelling patterns. This is what distinguishes the full alphabetic phase from the consolidated phase. That is they no longer segment a word into individual phonemes because they now consolidate phoneme-grapheme relationships into larger units such as rimes, syllables, and morphemes (Ehri, 2005). The ability to consolidate increases the efficacy in which readers identify a word because it is easier to learn a word such as *orthography* when you break it down into morphemic units, *ortho-graph-y*, or syllable units, *or-thog-ra-phy*, rather than into individual phonemes *o-r-th-g-r-a-ph-y*. Consolidation requires fewer connections to secure it to memory (Ehri, 2005; Templeton, 2003; Templeton & Morris, 2000). In the above example, the number of connections that need to be formed are reduced from eight to four to three. The fewer connections that readers need to make increase their ability to read fluently and comprehend.



## Synchrony Model of Development

The synchrony of model development (Bear & Templeton, 1998) presents a developmental framework that illustrates the relationship among children's reading, writing, and spelling development. Learning to read and write in English requires an understanding of English orthography. English orthography has three layers: alphabet (sound), pattern, and meaning (Bear & Templeton, 2000; Henderson, 1990). As students learn to read and write, they begin discover these layers. Five stages of orthographic development are used to represent the behaviors exhibited as children progress along this developmental continuum. Each spelling stage corresponds with a particular reading and writing stage.

Children's invented spellings provide a window into what they know about the written word and how words work. The spelling errors committed by children at particular periods in their development reflect qualitative changes in their literacy knowledge. Underlying their ability to read and write efficiently and effectively is their knowledge of English orthography.

As stated previously, there are three layers in English orthography. In the alphabetic layer, individual letters match up to individual sounds that follow a left to right progression such as *cat* and *dog*. As children progress to the next level, they find that decoding a word in left to right progression troublesome. In the pattern layer, groups of letters form patterns that represent a single sound. To read words like *cake* and *rain*, requires children to understand the long vowel patterns of CVCe and CVVC. The meaning layer reflects the consistent spelling of meaning units within words, despite changes in sound. For example, although the /i/ in *confide* and *confident* changes from a long vowel sound to a schwa sound, the spelling remains consistent.

Certain spelling, reading, and writing behaviors characterize each stage of development. Before children discover the alphabetic principle they are considered *emergent readers, writers, and spellers*. This means that children in this stage pretend to read and write. Their spellings are represented by random shapes, squiggles, and letter-like symbols. Support for these children comes through using texts that are easily memorized, activities that develop letter knowledge, letter-sound knowledge, and phonemic awareness, and concept sorts to develop vocabulary.

The *letter-name alphabetic spelling stage* corresponds with the *beginning reading and writing stage of development*. During this period of development, children's spelling progresses from spelling words using initial and final consonants to spelling most one syllable, CVC words correctly. Children's reading and writing is best characterized as laborious. As they read, they read aloud and fingerpoint to keep their place. Writing is difficult because they have to think about sound, think about the letter that represents the sound, and then think about how to form that letter.

As children progress to the *within word pattern spelling stage* they are considered *transitional readers and writers*. This means they are in transition from reading word-by-word to reading fluently. Their reading and writing development is approaching fluency. Children's sight word reading vocabulary has developed to the point where they can read in phrases. At the beginning of this stage, children *use but confuse* long vowel patterns in their spellings. Spelling words like *make* as *maek* or *maik*. As they progress through this stage, they explore more complex long vowel patterns such as in *eight* and diphthongs in words like *shout* and *fought*.

The next two stages, *syllable juncture* and *derivational relations*, mark the shift into the meaning layer of orthography. Children in the syllable juncture stage of spelling development are considered in the intermediate stage of reading and writing and children in derivational relations are considered advanced readers. The skills and knowledge they have acquired up to this point allow them to read fluently with expression. Children read and write for a variety of purposes.

During the syllable juncture stage, children discover what happens at the point where syllables form in polysyllabic words. The spelling knowledge gained in the previous stages laid the foundation for what is learned during this stage. This begins by studying inflectional endings and what happens when these endings, such as *ed* and *ing* are added to single-syllable words. For example, they discover the principle of *consonant doubling* and *dropping e* when they study words such as *hopping* and *hoping*. This knowledge is soon extended to the middle of polysyllabic words when they begin to understand that words like *button* and *gadget* are spelled with two consonants because they mark the English short vowel (Henderson, 1985).

During the derivational relations stage of spelling, children learn that spelling words derived from a common base word or root word usually remain constant with the base or root (Templeton, 2003; Templeton & Morris, 2000). Children explore the meaning/spelling connection and come to better understand and appreciate how the meaning/spelling connection happens in language. As children encounter a variety of words in their reading and writing, their spelling should focus on meaning rather than sound. For example, in spelling the word *pleasure* children can refer to their knowledge of how the word *please* is spelled. The meaning connection is also studied by exploring word etymology and Latin and

Greek words. The words discovered at this point come mostly from what children encounter in print. Therefore, it is necessary for children to read often and widely if their word knowledge is to continue to grow and prosper.

The above developmental frameworks illustrate the qualitative changes that occur in children's literacy development as they progress from emergent, non-readers to advanced, proficient readers. At this point, it is important to remember readers vary on the rate of their progression. Some readers progress very quickly, others progress more slowly, and not all readers reach the final stage or phase. Children experiencing difficulty in one stage may experience delay or prevent them transitioning to the next (Chall, 1996).

Progression through the stages or phases is greatly influenced by a multiplicity of home and school environmental factors. For example, persistent poverty and the absence of quality literacy-rich home experiences prior to entering school negatively influence initial reading skills (Kainz & Vernon-Feagans, 2007). However, classrooms that provide frequent and explicit reading, writing, spelling, and vocabulary instruction (e.g. word recognition, comprehension, word study, and writing process) along with opportunities to engage in authentic and purposeful reading and writing activities positively influence children's reading development. Therefore, opportunities to engage in literacy activities in different environments-the home, school, and community are critical to children's literacy and overall school success.

### **Vocabulary Gap**

Learning experiences during the early childhood period provide critical opportunities to develop the language and literacy skills necessary to succeed in school. Adams (1990) estimated children from professional families experienced 1,000-1,700 hours of on-lap

reading time by the time they entered first grade. Children who engage in these on-lap reading practices enter school with rich and varied learning experiences with words and language and have a distinct advantage over children with limited experiences (Biemiller & Slonim, 2001; Strickland, 2001; Tabors & Snow, 2001; Wells, 1986). Adam's scenario provides one example of how children begin to acquire the language and literacy skills necessary to succeed in school and provides one explanation for the disparities in vocabulary (Snow, et al., 1998).

Vast differences in vocabulary knowledge among children exist by the time they reach the age of five and first enter kindergarten (Biemiller & Slonim, 2001; Hart & Risley, 1995). Hart and Risley (1995) investigated the language experiences of children from professional homes, working-class homes, and welfare homes beginning at one-year of age and continuing through three-years of age. They estimated that children from professional homes heard three times the number of words by three years of age or approximately 30 million words as compared to children from welfare homes who heard approximately 10 million words. Children from working-class homes heard approximately 20 million words by three years of age, twice the amount children from welfare homes heard. A more staggering finding in this study was by the age of three; children from professional homes spoke using higher quality language than the adults in the welfare homes. A similar vocabulary gap exists between English language learners and English-only children (Tabors & Snow, 2001)

Once children enter school this gap is likely to widen over time ((Cunningham, 2005; Nagy, Herman, & Anderson, 1985; Keith E Stanovich, 1986). The widening of this gap may be attributed to what Stanovich (1986) referred to as the "Matthew Effects" in language and literacy development. Stanovich (1986) believed that a bi-directional or reciprocal

relationship exists between vocabulary knowledge and reading comprehension. Children who entered schools with larger vocabularies had greater facility breaking the alphabetic code (David K Dickinson, et al., 2003; Nagy, 2005; Rosenthal & Ehri, 2008). Children who broke the alphabetic code had stronger word recognition skills and learned to read with greater ease (Lonigan, 2007). Therefore, the size of children's vocabularies related to their ability to recognize words and comprehend text. Children, who have the ability to recognize words with little difficulty and understand the meaning, enjoy reading and read more. Hence, the more they read the more vocabulary they learn, and the better they comprehend. Conversely the opposite would then also be true. Children with smaller vocabularies may experience more difficulty with breaking the alphabetic code. Children who have difficulty with decoding may find reading frustrating and will read less and gain less vocabulary. Effective vocabulary instruction in the early primary years may enhance children's vocabulary development and break the downward trend of this cycle.

### **Vocabulary Development**

Understanding the significant role vocabulary plays in reading comprehension and school success, it makes sense to continue to research instructional interventions that would narrow this gap. In order to close the existing vocabulary gap, children need vast and varied exposures to words outside their current lexicon. Through their examination of oral and written texts, Hayes and Ahrens (1988) determined written texts provide children with the best opportunity to encounter a word outside of their current lexicon. The most appropriate written text for children is children's literature. Unfortunately, children in the preschool and early primary years are not yet reading and if they are in the process of learning to read the material they read is limited to their word recognition and decoding abilities (Cunningham,

2003, 2005; Nagy, 2005). One of the most effective ways to expose children to new vocabulary and narrow the gap is through the storybook read aloud.

### **Vocabulary Learning through Read Alouds**

The main purpose for reading literature aloud to children is for the aesthetic experience. It is for the simple pleasure of enjoying a good story, enjoying a stirring or whimsical poem, or learning new information. As children listen to literature, they gain equal access to language and written structures that may be too difficult for them to manage in print (Chambers, 1996). Reading aloud to children is essential for the goal of developing critical and thoughtful readers (Bus, 2001; Raikes, et al., 2006; Senechal, LeFevre, Thomas, & Daley, 1998; Wasik & Bond, 2001).

Reading aloud to children also continues to be one of the most frequently recommended practices for developing vocabulary and emergent literacy competencies of preschool and early primary age children (Justice, Mashburn, Hamre, & Pianta, 2008; Snow, et al., 1998). A read aloud experience provides rich contextual experiences that may facilitate vocabulary acquisition for several reasons. First, listening to a piece of literature read aloud provides opportunities for incidental word learning (Hargrave & Senechal, 2000; Justice, et al., 2009).

Second, children's literature contains a high percentage of rare words or what Beck and McKeown (Beck & McKeown, 2007a) consider sophisticated words of high utility. These words are not likely to be in normal everyday conversations and would be considered outside the lexicon of children in the fourth through sixth grades. However, these words are found in the core corpus of written discourse used in the fourth grade (Hiebert, 2005) and, therefore, vital to comprehension and children's academic success. Considering readers must

understand 98% (one out of every 50) of content words and 95% of running text to construct meaning (Nation, 1990), children entering fourth grade with impoverished vocabularies will have a difficult time *keeping up* with their linguistically-rich peers.

Third, the interactions that occur among the children and the storybook reader create language-centered experiences that build vocabulary (Hargrave & Senechal, 2000; Senechal & LeFevre, 2002; Whitehurst, et al., 1994). During these interactions the storybook reader may provide brief explanations of a word's meaning in the context of the read aloud. For example, in The Popcorn Dragon by Jane Thayer, "Dexter began to stroll up and down" (p. 5) would be read in the following manner: "Dexter began to stroll (that means to walk slowly) up and down." Interactions such as this facilitate vocabulary acquisition by elaborating on the meaning of a word and by creating opportunities that allow children to make connections to the events of the story through vocabulary and language. Finally, most storybooks are read and reread numerous times. By repeatedly listening to the words and their contexts, these multiple rereadings increase the opportunities children have to incidentally acquire vocabulary (Nagy, et al., 1985; Watson, 2001).

Understanding the importance of social interaction in developing and using language, Whitehurst et al. (1994) introduced dialogic reading as a method to promote vocabulary growth among children who attended Head Start. In dialogic reading, the child assumes the role of an active participant rather than a passive recipient. It involves the teacher reading with the child, not to the child. The main purpose for using dialogic reading is to encourage quality dialogue between the teacher and child. Throughout the read aloud, teachers use a variety of discussion prompts to engage children in a conversation about the story. These discussion prompts were designed to scaffold children's use of language.



Teachers who participated in this study received dialogic reading training and they were asked to implement this practice in a one-on-one setting with the child. The training focused on providing a framework for introducing and reading a story and providing *wh*-questions and recall prompts. The prompts were designed to cover a spectrum of responses beginning with simple recall through to having children make personal connections with the text, construct inferences, and create summarizations. The teachers also learned ways to scaffold children's use of language by modeling an expanded response and then encouraging children to repeat the expanded response.

Oral language (vocabulary, listening comprehension, and phonological awareness) gains were reported for children who participate in dialogic reading. However, the gains reported did not result from the dialogic reading that occurred in the classroom, but only occurred when the classroom-based interactions were coupled with home-based dialogic reading experiences. This led Whitehurst et al. (1994) to conclude more child-home interactions are needed from children from low-income families. However, during the 10-15 minute dialogic reading interactions that took place between the child and the teacher, teachers rarely went beyond simple recall questions which greatly reduced the quality of the interactions and this may explain the lack of results for the classroom-based practices.

In addition, these findings by Whitehurst et al. (1994) contradict Morrow's (1988) earlier study regarding the effect of group size on comprehension gains. The results from Morrow's study indicated that children's performance on comprehension measures statistically favored the small-group setting in comparison to the one-on-one setting. An analysis of the quality of language used during the storybook interactions might explain the differences with the results, especially since the teachers in the Whitehurst et al. (1994) study

rarely went beyond simple recall prompts. The interactions that occur among teacher and children in a small-group setting may significantly increase the quality of language used and heard during a read aloud.

Similarly, Sénéchal et al. (1998) investigated the effects of home literacy experiences on oral and written language development in a middle-SES to high-SES sample. Their results indicated informal literacy activities such as interactive storybook reading were related to children's oral language development (e.g., vocabulary, listening comprehension, and phonological awareness) and experiences that explicitly provided formal instruction about reading (e.g. sounds and letters) were related to the development of skills associated with written language (e.g. print concepts, alphabet knowledge, invented spelling, and decoding). Interestingly, for kindergarten children only, both storybook experiences and explicit instruction were positively correlated with both oral and written language development. Whereas for children in the first grade, storybook reading was only associated with the development of oral-language skills. Therefore, according to Sénéchal et al., the amount of storybook reading children receive is predictive of oral language ability and the amount of skills-based instruction is predictive of written language ability.

### **Explicit Vocabulary Instruction Embedded within Storybook Reading**

The previous interventions focused on developing children's oral language (vocabulary, listening comprehension, and phonological awareness) through storybook read alouds. Children incidentally acquired vocabulary through the interactions that occurred during storybook read aloud events and through explicit explanations of word meanings. However, if children with impoverished vocabularies are going to *catch-up* with their linguistically advantaged peers, vocabulary instruction has to match their peer's rate of

vocabulary learning while trying to make up for the initial difference in vocabulary size. Along with Beck and McKeown (2007b), Biemiller and Boote (2006) reason this task cannot be accomplished through storybook reading alone. This is why current researchers emphasize explicit vocabulary instruction in addition to explicit code-related instruction (e.g., alphabet, letter-sounds, phonological awareness) throughout the preschool, kindergarten, and primary years (Beck & McKeown, 2007b; Biemiller & Boote, 2006; Justice, et al., 2009; Leung, 2008; Roberts, 2008; Senechal, et al., 2006; Silverman, 2007a; Wasik & Bond, 2001; Wasik, et al., 2006).

In the earlier storybook reading studies, vocabulary acquisition was a result of listening to the story and engaging in dialogic or interactive discussions that occurred throughout the storybook reading session. Currently, increased attention and efforts are placed on explicit, systematic vocabulary instruction. This process begins by targeting specific vocabulary words. Prior to reading a piece of literature, teachers select target vocabulary and design specific instructional activities to support the acquisition of the vocabulary. Embedding explicit vocabulary instruction within the context of a storybook read aloud creates an instructional framework for learning vocabulary by (1) engaging children in an interactive/dialogical storybook read aloud and (2) providing explicit instruction on targeted vocabulary.

### **Selecting targeted vocabulary**

Considering the number of words that need to be learned, choosing the most appropriate words for vocabulary instruction is a daunting and difficult task. A common practice for selecting vocabulary is through frequency counts and word lists (Biemiller & Boote, 2006; Nation, 1990). One benefit of frequency counts is that they provide helpful

information regarding the frequency and range of words. Many of the criticisms associated with frequency counts are: (a) high utility words are not found in the first 1,000 words; (b) some of the words found in the first 1,000 are not appropriate for a beginner's vocabulary; (c) there is disagreement among word-frequency lists; (d) the order in which the words are found in a frequency list is not always the order in which the words should be learned; (e) frequency lists are generated from written text; and (f) word-frequency lists are only reliable up to a certain level (e.g., first 1,000 words) (Nation, 1990). In addition to frequency counts, Richard (1970) recommended using the following criteria for selecting words: (a) language needs, (b) availability and familiarity; (c) coverage (frequency); (d) regularity; and (e) ease of learning or learning burden.

Dale and O'Rourke's (1981) *Living Word Vocabulary (LWV)* is one example of a word list used by researchers to select vocabulary items. The *LWV* is a list of vocabulary words categorized by the grade level in which the majority of students in that particular grade indicate understanding of the word's meaning. Using the *LWV*, Biemiller and Slonim (2001) investigated the degree to which words are learned in a similar sequence by children with different rates of vocabulary progress and compared these differences with normative and advantaged samples. The authors found that root words appear to be learned in a similar sequence by most children and they felt the order in which words are learned can be predicted by using the *LWV* as a guide. That is why Biemiller and Slonim recommend using the *LWV* when planning or developing a vocabulary curriculum. They also feel it would be prudent to map the vocabulary curriculum to ensure that bodies of vocabulary are known by certain points for children in kindergarten and first grade.

Beck and McKeown (2007a) argue against using the *LWW* as a guide for selecting vocabulary and instead they recommend the selection of Tier 2 words for vocabulary instruction. Using a mature literate individual's vocabulary as a guide, Beck and McKeown have categorized words into three tiers. The three tiers indicate the differences in utility, or of most practical use. The first tier of words consists of basic words that would most likely be acquired naturally and without instruction. The third tier of words is comprised of technical words that are specific to a certain domain. These are low-frequency words that would be taught in certain content areas, such as geometry (e.g., isosceles, Pythagorean Theory). Tier 2 words are words that are found across a variety of domains and would be of high-utility and high-frequency among mature language users. These are the words that learners would encounter in a diverse assortment of written materials and because they would be found in the oral and written registers of mature, literate language users would be the most appropriate to add to a learner's productive vocabulary. The criteria used by Beck and McKeown for selecting Tier 2 words are:

- (a) importance and utility—words found in diverse contexts and are found in the vocabulary of mature language users; (b) instructional potential—provides opportunities to provide rich instruction; and (c) conceptual understanding—words that learners understand the basic concept but provide precision and specificity in describing the concept. (p. 19).

### **Explicit Vocabulary Instruction**

Wasik and Bond (2001) designed and implemented a language development intervention for 127, four-year-olds who attended a Title I early intervention center. Half of the children were assigned to the treatment condition and half of the students were assigned

to the control condition. The treatment condition, which was implemented over a 15-week period, focused on creating multiple opportunities for children to learn vocabulary through shared storybook reading and related reading activities. Three key elements of the program were providing repeated exposures to the focal vocabulary, providing concrete representations of the target vocabulary and opportunities to interact with the vocabulary, and providing teachers with dialogic strategies (Whitehurst et al., 1994) that emphasized open-ended question which encouraged conversation among the teacher and students.

Teachers in the control classroom used the same storybooks and the books were read the same number of times as in the intervention group. The teachers in the control classrooms did not receive training in interactive book strategies. Daily schedules were similar for the teachers in the intervention and control classrooms and the time allocated for book reading were the same in both settings.

The classroom teachers in the treatment condition followed a four-day instructional cycle during each week of the intervention. On day 1, teachers introduced target vocabulary by presenting props and engaging the students in a discussion about the props. Immediately, following the introduction of the vocabulary, the teachers used dialogic reading strategies to engage the students throughout the reading of the storybook. On day 2, the teachers reviewed the target vocabulary by verbally identifying each prop. This was followed with a rereading of the storybook introduced on day 1. Children then participated in a variety of literacy activities that reinforced the vocabulary. On day 3, the children were expected to name each prop and the teachers introduced a second trade book that reinforced the concepts related to the vocabulary. On day 4, the children completed a center activity that was related to the storybook. A big book containing the target vocabulary was also introduced on this day. As

the teacher read the big book aloud the students were expected to follow along in their copy, which was a smaller version.

The results indicated that children who received multiple opportunities to interact with target vocabulary through prop identification, interactive book readings, and a variety of center activities learned more book-related vocabulary than children in the control classrooms. Significant main effects were found in both a.m. and p.m. classes on receptive and expressive measures when using the classroom as the unit of measure and when using the students as the unit of analysis. In addition to these results, the authors reported the children in the treatment conditions scored significantly better on the PPVT-III compared with children in the control condition. These results suggest children made gains in both specific and general vocabulary knowledge. However, no effect sizes were reported for any of the significant measurements.

To address the profound differences in vocabulary knowledge among children, Beck and McKeown (2007a) designed a two-part, between subjects, quasi-experimental, pretest-posttest control group study. The classroom teachers selected for the experimental condition provided robust vocabulary instruction of sophisticated words to kindergarten and first grade students who attended a low-achieving elementary school. Sophisticated words are those words that are considered advanced for a particular grade level and are found in quality children's literature and are targeted through storybook read alouds.

In Study 1 teachers in the experimental condition received training to provide explicit vocabulary instruction through an instructional activity referred to as Text Talk. Through Text Talk, teachers chose conceptually challenging texts and provided opportunities for students to construct knowledge of that text by engaging in conversations that promote

rich discussions of the narrative. Text Talk shares many of the elements found in Whitehurst et al. (1994) dialogic reading. In addition to the Text Talk, specific target vocabulary words were chosen and Rich Instruction was developed for each of the six words selected. This means that children would have opportunities to use and apply these words in real world situations. Teachers in the control classrooms did not receive the storybooks that were used in the treatment condition and did not provide vocabulary instruction. Teachers in the control classrooms followed the school's reading curriculum that included storybooks that followed similar story lines and contained high-quality language.

The criteria for selecting the words for Text Talk and Rich Instruction were that the words were considered Tier 2, sophisticated words of high utility. In Study 1, teachers first read the story aloud to the students engaging them in Text Talk throughout the read aloud. Directly following the read aloud the teachers introduced and provided explicit instruction on each of the words chosen. Using ANCOVA, the experimental kindergarten and first grade classrooms showed significantly higher vocabulary gains than the comparison classes. Over the seven weeks of vocabulary instruction, the kindergarten students in the experimental classrooms made a mean gain of 5.58 words, whereas their kindergarten counterparts made a mean gain of 1.04. The effect size ( $d$ ) equaled 1.17. The mean gains were slightly smaller in the first grade classrooms with a mean gain of 3.64 in the experimental classrooms and a 1.71 mean gain for the comparison classrooms,  $d = .744$ .

A between subjects, quasi-experimental, pretest-posttest control group study was again used in Study 2. The experimental condition received More Rich Instruction and the control condition received Rich Instruction. In this study, the authors investigated the effects of providing vocabulary instruction over a period of several days as compared to the first



study where the only instruction the students received was on the first day of the read aloud. Text Talk was again used as the main treatment for Study 2 and Rich Instruction was designed for each of the six target words. In addition to the Rich Instruction, three words were selected for the students to receive more instruction on. This was referred to as More Rich Instruction. For the three words selected, students received the same type of instruction as in the Rich Instruction condition. However, this instruction occurred more frequently and the duration of the instruction was longer. Using ANCOVA, the kindergarten students who received More Rich Instruction on words showed significantly higher gains than the students who received Rich Instruction on words. At the end of the seven-week instructional period, the kindergarten students in the experimental classrooms made a mean gain of 8.17 words, whereas their kindergarten counterparts made a mean gain of 2.50 for the verbal task, ( $d$ ) = 2.09. The mean gains were slightly smaller in the first grade classrooms with a mean gain of 6.90 for the children who received More Rich Instruction; and a 3.80 mean gain for the Rich Instruction,  $d = .744$ . The results of these analyses indicate children's vocabulary learning benefits from explicit vocabulary instruction and when instruction occurs more frequently and occurs for a longer duration.

In a similar two-phase study, Biemiller and Boote (2006) investigated the effects of vocabulary instruction through storybook read alouds and explicit instruction. In the first study, the authors examined the effects of pre-testing, reading books aloud two or four times, and embedding word explanations in the read aloud on vocabulary acquisition. Pre-test scores indicated that the students knew the meanings of 25% (6 of the 24) of the instructed and non-instructed words. After the two-week instructional period, students knew 42% (10.08 words) of the word meanings, a gain of approximately 4 word meanings. An ANOVA

was conducted on gain scores for instructed word meanings versus non-instructed word meanings across kindergarten, first, and second grades. They reported that explicit vocabulary instruction makes a difference,  $F(1, 109) = 19.715, p < .001$ , and that pretest-posttest gains across the grades were 22% (2.64 words) for instructed words and 12% (1.44) for non-instructed words,  $d = .53$ . Overall, they did not find any pretesting effects, nor did they find any significant differences between reading a text twice compared to four times. However, they did find a significant interaction between the number of readings and grade. Kindergarten students had a 6% higher gain when texts were read four times compared to twice, first grade students made a 7% gain, and second grade students actually showed a 5% decrease in gains after the fourth reading than the second reading. This would amount to an approximate gain of 1 word meaning for children in kindergarten and first grade and a loss of 1 word meaning for children in the second grade. This decrease in gains may suggest that students in kindergarten and first grade may benefit more from multiple re-readings than students in the second grade.

During the second-phase of the study, instructional procedures were modified to provide additional opportunities to review the vocabulary and increase the number of word meanings taught during a two-week instructional period. In kindergarten 42 word meanings were taught with 16.4 word meanings learned. First grade learned an average of 24.8 word meanings with 55 taught and second grade learned an average of 17.0 word meanings with 46 taught. Differences were analyzed using ANOVA and the results indicated a significant difference of word meanings learned  $F(2, 192) = 528.597, p < .001$ , with an effect size of 2.97. The results indicate that using repeated readings of stories combined with explanations of word meanings produces a significant amount of word meanings learned.

Considering the number of word meanings learned Biemiller and Boote (2006) suggest that adding 400 word meanings a year is a reasonable goal for the primary grades. The authors also suggest that at least 20 vocabulary words should be introduced each week given that, at the most, only 40% of new words are learned. This suggestion contradicts Beck et al.'s recommendation of focusing on 5-6 word meanings a week. In addition, Biemiller and Boote's vocabulary approach produced a mean gain of 19.4 word meanings learned over a two-week period, whereas Beck and McKeown's (2007a) vocabulary approach produced a mean gain of 6.9 – 8.17 word meanings learned over a seven-week period.

Silverman (2007a) compared three approaches to teaching vocabulary instruction during storybook reading in her 6-week kindergarten intervention study. She investigated the efficacy of three current instructional practices in terms of vocabulary acquisition and retention. The vocabulary intervention was conducted in six classrooms and was implemented through whole group instruction. The three instructional methods used were contextual instruction, analytic instruction, and anchored instruction. Contextual instruction focuses on making connections from the vocabulary used in the books to children's real life experiences (e.g., harvest; "Have any of you ever planted a garden? What kinds of things did you plant in the garden? What did you do when \_\_\_\_\_ was finished growing? That's right, you picked them. Another word for picking the vegetables is harvesting."). Analytic instruction focuses on taking advantage of the contextual support of the storybook reading and augments the contextual instruction by analyzing words outside the context of the book and children's personal lives (e.g., "Would you be harvesting if you buy vegetables from a grocery store?"). Anchored instruction enhances analytic instruction by focusing on the

phonological and orthographical features of the words (e.g., “What sound do you hear at the beginning of harvest? What letter spells that sound?”).

In posttest analyses of picture vocabulary measures, there were no significant differences between analytic and anchored instruction. However, significant differences were found between contextual instruction and the anchored and analytic instruction. Compared to the contextual condition, effect sizes of the anchored instruction were 1.02 and between the contextual instruction gains and analytic gains the effect size was .67. A mean gain of 6.7 words was learned in the anchored condition, 5.9 words in the analytic condition, and 3 words in the contextual condition.

In posttest analyses of oral vocabulary measures, there were no significant differences between analytic and anchored instruction. Significant main effects were found when contrasting contextual with anchored,  $d = 1.19$ , and contextual with analytical,  $d = .85$ . Children learned 7.7 word meanings in the anchored condition, 6.9 words in the analytic condition, and 2.2 words in the contextual condition.

Analyses were again conducted on picture and oral vocabulary measures six months after the completion of the study. At the six-month follow-up, significant differences were found between anchored and analytical conditions ( $p = .0149$ ) with analytical conditions scoring higher and anchored and contextual conditions ( $p = .0038$ ) with anchored instruction scoring higher on picture vocabulary measures. Follow-up analyses revealed a significant main effect for anchored and contextual conditions,  $d = .94$ , only.

In reporting these results, Silverman (2007a) acknowledged that at most students learned one word per week. This could be attributed to the number of words Silverman selected for instruction. For each week of the six-week intervention, only five words were

selected for instruction. This is significantly lower than the 20 words a week recommended by Biemiller and Boote (2006). Although children in the anchored and analytical conditions learned 20% (one of five) of the word meanings, learning only one word meaning a week is not enough to close the vocabulary gap or make up the differences between children with rich vocabularies and those that have limited vocabularies.

Focusing on children's linguistic and vocabulary growth in the pre-school years, Schwanenflugel et al. (2005) developed a vocabulary program for pre-kindergarten classrooms. *PAVED for Success* (which stands for *Phonological Awareness and Vocabulary Enhancement*) was developed to enhance children's vocabularies and pre-academic skills. The goal of the study was to assess the implementation, sustainability, and effectiveness of the program.

The program incorporated both *implicit* and *explicit* practices for enhancing children's vocabulary knowledge. Implicit practices refer to activities in which the vocabulary is not the direct focus. Whereas, in explicit practices vocabulary is the focus. The implicit practices consisted of *Building Bridges* and *CAR (Competence, Abstract, and Relate) Talk* and explicit strategies consisted of *Didactic-Interactional Book Reading*, *Explicit Targeted Vocabulary*, and *Novel-Name Nameless Category (N3C) Presentation Strategy*.

The main goal of Building Bridges was to increase the quality and quantity of teacher-students interactions by engaging the students in a one-to-one conversation for five minutes, three times a week. CAR Talk was designed to increase the amount of storybook reading in the classrooms and enhance the quality interactions during the storybook reading by recommending small group read alouds. During Didactic-Interactional Reading, teachers provide a synonym or brief definition for targeted vocabulary. For Explicit Targeted

Vocabulary, teachers were to select ten target words and create extension activities for the vocabulary words selected. *Novel-Name-Nameless Category* (N3C) was used as a strategy for introducing vocabulary. The teachers were asked to individually introduce targeted vocabulary and to introduce the vocabulary using pictures or props. When the vocabulary was introduced, teachers presented two known vocabulary words along with the targeted vocabulary word. The principle behind N3C states that children map novel words to unnamed objects when they encounter a novel word in the context of known words. For example, when introducing the unknown word *dolphin* the teacher would present a picture of *dolphin* along with a picture of a *dog* and *cat* then ask the children to identify the *dolphin*.

The researchers found that teachers effectively implemented CAR Talk the most, with 81% of the teachers implementing the activity. Only 52% of the teachers effectively implemented Building Bridges and 61% of the teachers effectively implemented the Explicit Targeted Vocabulary activities.

The effects of the program were evaluated by assessing children's receptive and expressive language using the Peabody Picture Vocabulary Test-III (2007) and the Expressive Vocabulary Test (Williams, 1997). The EVT, revealed the vocabulary practices had no impact on the children's expressive language. In contrast, the PPVT-III reported more positive results for children's receptive language growth. A significant effect was found for both children who spoke English as their primary language,  $F(1, 397) = 5.29, p = .022$ , partial  $\eta^2 = .13$ , and for English Language Learners  $F(1, 397) = 4.5, p = .033$ , with ELLs making larger gains. Somewhat disconcerting, is that no part of the program was sustained once the implementation was completed.

Investigations that focus on vocabulary acquisition select storybook reading as an effective method for introducing and teaching vocabulary. The majority of the materials used for storybook reading are fictional narrative text structures. Leung's (2008) study focused on academic vocabulary found in informational texts, specifically science – content vocabulary. Leung compared the vocabulary growth of 3 and 4-year old preschoolers after participating in interactive repeated read alouds, retellings, and hands-on science activities. Instruction on the scientific concepts and target vocabulary was conducted over a 5-week period.

For this study, three informational picture books were selected. One book was selected as the focus for each week of the study. During the storybook read aloud, the picture book selected was read aloud to small groups of three to four children on three different occasions. This usually occurred on the Tuesdays, Wednesdays, and Thursdays of each week. In a one-on-one setting, half of the children were selected to participate in the retelling of the book following each read aloud event. At this time the children were given the book and were asked to explain what was happening on each page. These retellings were recorded and transcribed. The transcriptions of the recordings were used to assess the children's use of the target vocabulary. After the read aloud events and the retellings, the children participated in three days of hands-on activities that supported the concepts presented in the informational picture books.

There were 37 preschool children who participated in this investigation. All of the preschool children were assessed using the Peabody Picture Vocabulary Test-III (PPVT-III), the Expressive Vocabulary Test (EVT), and the Free Recall Target Word Test-pretest. The pre-assessment measures occurred during the five weeks prior to the commencement of instruction. These assessments were again administered as post-tests that occurred during the

four weeks that followed the completion of instruction. Thirty-two words were selected for the target vocabulary for this investigation. The target words were assessed using both the children's retellings of the stories and through the Free Recall Target Word Test.

Using 2 X 2 repeated measures ANOVA there were no significant differences from pretest to posttest on measures of the PPVT-III and the EVT. These results indicate that this particular intervention did not influence general vocabulary growth. This lack of general vocabulary growth could be attributed to the short duration of the actual instruction (4 weeks).

Further results indicated that 4-year-olds who participated in retellings out performed those who did not participate in retellings on the Free Recall Target Word Test. However, both groups scored significantly higher on posttest free recall target vocabulary than pretest. Significant differences on the Free Recall Target Word Test were also found for 3-year-olds who participated in the retelling condition.

Significant differences were also found when comparing the first retelling with the second retelling and the first with the third retelling. Children were able to explain the meaning and use the target vocabulary more with each retelling (means for the three retelling scores were 7.5 target words for 1<sup>st</sup> retellings, 10.56 target words for 2<sup>nd</sup> retellings, and 13.31 target words for 3<sup>rd</sup> retellings).

Interestingly, a significant main effect was found on the Free Recall Target Vocabulary Test for children with average and high general vocabulary knowledge who participated in the retelling condition. This finding suggests what Stanovich (1986) refers to as *Matthew effects*. Children with higher levels of vocabulary acquire more and experience greater facility in learning new vocabulary than children with low levels of vocabulary



knowledge. This is not to discount the fact that means for all groups increased from pretest to the posttest. However, this program appears to be more beneficial for students with larger vocabularies.

Further analyses revealed that children who participated in the hands-on science activities scored significantly higher than children who participated in either the no-retelling and retelling,  $d = .9$ . Many children with higher vocabularies were able to successfully comprehend science concepts from interactive book readings and retellings. The hands-on activities provided the students who need additional support in learning the science concepts with the opportunity to visualize and experience the concepts presented in the texts. The hands-on activities together with the retelling activities allowed the children to use the scientific vocabulary to describe the concept.

This study provides evidence that students as young as 3- and 4-years old have the capability to learn and express vocabulary associated with complex scientific concepts. On average both age groups learned approximately four words per week (approximately 50% of the target vocabulary). Considering the children with larger vocabularies are learning as much as or more than children with lower vocabularies, the results of this study indicate more needs to be accomplished with respect to children with low vocabularies. A critical question for educators to ask is: if children with larger vocabularies have greater facility in learning new vocabulary, what can educators do to narrow the gap, or at the very least keep the gap from diverging further? Continued emphasis needs to be placed on developing rich and varied approaches that build vocabulary and narrow the existing gap.

### **Explicit Vocabulary Instruction with English Language Learners**

Roberts (2008) used a cross-over design to investigate the effectiveness of home storybook reading in a child's primary language for developing vocabulary among English language learners. The children in this study were grouped by language group (Hmong and Spanish) and were randomly assigned to one of two treatments. Versions of 12 classic storybooks were developed for each of the language groups. From these storybooks, 72 vocabulary words were selected for direct instruction.

The first treatment condition consisted of children receiving primary-language storybooks for home storybook reading during the first six weeks and receiving English-language storybooks for the second six weeks. The second treatment condition consisted of children receiving English-language storybooks during the first six weeks and receiving primary-language storybooks for the second six weeks of the study. Each treatment group received two classroom lessons on the same storybook during the week that followed the at-home reading. The lessons included an interactive storybook reading in English component, explicit vocabulary instruction, and *pretend reading* using individual copies of the books. In pretend reading, children would have their own student copy and, since the children are non-readers, would follow along as best they could.

In groups of 10 or 11, children received classroom instruction twice a week. Each of the lessons were sequenced in the following manner: (a) book introduction; (b) introduction of each of the target vocabulary using picture cards and having the children repeat the targeted vocabulary; (c) reading the storybook aloud with teacher tracking the print as the story is read; (d) responding to and elaborating on children's responses to the story; and (e)

engaging students in follow-up activities such as acting out the vocabulary word or discussing the vocabulary.

For the home storybook reading component, families participated in training events where they learned how to use dialogic reading practices. The training sessions emphasized experiencing pleasure with storybook reading, tracking the words in print, rereading the story multiple times, and talking about the story. For families who could not read the storybooks in English, they were encouraged to talk about the pictures and to use the pictures to tell the story.

The assessment measurements used during this investigation were overall storybook-vocabulary tasks, weekly vocabulary tests, Peabody Picture Vocabulary Test (PPVT-III), Test de Vocabulario en Imágenes Peabody (TVIP-H) and the Preschool IDEA Oral Language Proficiency Test (Pre-IPT). All of the children were pre-tested using the PPVT-III vocabulary, Pre-IPT, and storybook vocabulary for the six books used during the first six weeks of the study. The storybook vocabulary was assessed using a measure that used pictures to illustrate the key vocabulary words. Four picture cards would be displayed and the children would be asked to point to the picture on the card that showed the item asked by the researcher. Pre-tests of target words were also administered each week and prior to receiving explicit instruction on the words selected for each week. The children were also assessed on their knowledge of the selected vocabulary after at-home reading, and again after receiving instruction through the classroom lessons. Post-tests administered after the first six weeks were the PPVT-III vocabulary and storybook vocabulary for the first six books. At this time the students were also pre-tested using the Pre-IPT and the storybook vocabulary for the six books used during the second six weeks of the study. Throughout the second six weeks of the

study, the children were again assessed using the same procedure as the first six weeks. At the completion of the study the students were post-tested using the PPVT-III vocabulary, Pre-IPT, retention of storybook vocabulary for the first six stories, and retention of the storybook vocabulary for the second six stories.

To analyze the data, a 2 (storybook language: English or primary) X 2 (language group: Hmong or Spanish) analysis with the pretest and posttest scores treated as repeated measures were performed for each of the two six week sessions. A significant interaction between pretest/posttest and treatment was found,  $F(1, 29) = 5.35, p < .05$ . Children scored significantly higher at posttest than at pretest. More importantly, children who received at-home storybook reading in their primary language scored significantly higher than the children who received at-home storybook reading in English. This finding supports previous research that shows the use of primary language for academic instruction does not interfere with the acquisition of a second language (Corson, 1999; Cummins, 2000; Genesee, Lindholm-Leary, Saunders, & Christian, 2006) and may provide a possible model for developing vocabulary of children learning English. Further analyses revealed that increased vocabulary knowledge occurred after the at-home storybook and after explicit vocabulary instruction received during the classroom lessons.

The analyses also revealed that the language of at-home storybook reading did not have a significant effect prior to receiving classroom storybook reading in English and explicit vocabulary instruction. It was only after the children received classroom storybook reading in English and classroom lessons that focused on the targeted vocabulary that the children who received at-home storybook reading in their primary language scored significantly higher than the children who received at-home storybook reading in English.

This finding provides strong evidence to support the importance of children drawing from their first language to support the acquisition of their second language and how primary language storybook reading mediates second language vocabulary acquisition.

According to the pre and post-test data of the primary language group storybook reading and the English-language group storybook reading, the students learned more than 40% of the unknown vocabulary, which Biemiller and Boote (2006) found to be the high average for retention of new words learned, in both language groups. Equally impressive is that children made significant gains on assessments that measured general vocabulary such as the PPVT-III and the TVIP-H. This is important to note because Pearson, Hiebert, and Kamil (2007) found that a limitation of the PPVT-III is that the assessment does not accurately measure vocabulary growth in interventions that last a short duration such as the Robert's (2008) study.

Further investigation is needed to parcel out the variables that directly affected both specific and general vocabulary growth. Although this study was not designed to directly investigate the roles classroom storybook reading and vocabulary lessons played in fostering the acquisition of vocabulary, it is important to understand both the individual and collective contributions of these activities in regards to vocabulary knowledge. Another concern that I have with the results of this study is that although children made significant gains in their vocabulary acquisition, they were not learning enough words to close the gap between children who enter school linguistically rich and those that are considered linguistically impoverished. The children learned an average of 1.1 words per week during the first session and 2.2 words per week during the second session. These results could also be attributed to the number of words (six) selected for each week of instruction. The fact that the children

learned twice as many words in the second session may suggest what Stanovich (1986) refers to as a *bootstrapping effect*. That is, children who experience success in acquiring literacy skills have greater facility when learning or refining skills related to literacy achievement. However, learning between 36 and 72 words during a typical school year is not going to be a sufficient to close the vocabulary gap for English language learners. This seems to support Biemiller and Boote's (2006) recommendation of targeting 20 words a week for instruction. If we are to try and narrow the vocabulary gap, more attention needs to be focused on the number of words being taught as well as selecting the most appropriate words for instruction.

Interested in the effectiveness of a vocabulary intervention and the differences in the rate of acquisition between English only (EO) children and English language learners, Silverman (2007b) implemented a 14 week (12 weeks of instruction, 2 weeks of review) vocabulary program in five kindergarten classrooms. The Multidimensional Vocabulary Program (MVP) integrated 10 characteristics of effective vocabulary practices that promote vocabulary learning through storybook read-alouds. Many of the 10 characteristics, such as using visual aids and acting out the word, were specifically chosen to address the instructional needs of ELLs. The 30 to 45 minute lessons were designed to be implemented 3 days per week.

Assessment of the children's general verbal knowledge was conducted using the Test of Language Development (TOLD). The children's knowledge of the 50 targeted vocabulary items was assessed using the Researcher Vocabulary Assessment (RVA) developed by Silverman (2007) and modeled after the TOLD. Using linear growth modeling to analyze the learning assessed by the RVA, Silverman reported that although significant differences were found between EOs and ELLs at the time of the pretest, no significant differences were found

at posttest and follow-up. At the time of the pretest, EOs scored 10 points higher on the RVA than ELLs. Although the results indicated both groups made vocabulary gains, at posttest and follow-up, EOs only scored 3 points higher on the RVA than ELLs. More importantly, the rate of acquisition was slightly higher for ELLs suggesting that vocabulary interventions can be effective in narrowing the gap between EOs and ELLs. Although the results of this study are encouraging and provide evidence that ELLs can learn vocabulary as fast as or faster than EOs, the number of words learned over the period of the study amounted to an average of 1.3 words per week for EOs and 1.4 words per week for ELLs.

Evaluating the effectiveness of a year-long vocabulary intervention designed to support children's transition from Spanish to English reading, Calderón et al. (2005) employed a matched control design. A total of 16 classrooms participated in the study, eight experimental and eight control. All of the classrooms participated in the Success for All (SFA) reading program (Slavin & Madden, 2001). The vocabulary program designed to be used in conjunction with the SFA reading program incorporated vocabulary strategies specifically designed to enhance vocabulary learning among ELLs. The primary medium for teaching vocabulary was through storybook read-alouds. Instructional procedures consisted of (a) preteaching the vocabulary, (b) developing vocabulary through "Text Talk", and (c) reinforcing vocabulary through oral language activities after the storybook read-aloud, as explained below.

Over the course of the school year, children listened to 50 storybooks. From these storybooks, the children received explicit vocabulary instruction on approximately 300 words. Word selection was based on the research by Beck and McKeown (2002). In addition to categorizing words by the tier concept, Calderón et al. (2005) developed a set of their own

selection criteria based on the needs of ELLs. The four criteria they employed included: (a) the nature of the word, can the word be easily demonstrated; (b) cognate status, words that are of high-frequency in both Spanish and English and share cognates in Spanish; (c) depth of meaning, words that are polysemous; and (d) utility, appear frequently in a variety of domains.

Vocabulary instruction utilized a variety of instructional techniques. Strategies designed to preteach vocabulary consisted of activities such as the teacher introducing the vocabulary word in both English and Spanish, providing a brief explanation of the word's meaning, placing the word in a sentence, and having the students repeat the word. During the reading of the storybook, teachers engaged the children in vocabulary learning by demonstrating (e.g., acting out, using movement or motions) concrete words and, when appropriate, providing a Spanish cognate. Teachers also engaged the students in rich conversations by incorporating dialogic reading practices throughout the reading. After the reading of the storybook, oral language activities promoting extended discourse such as story retelling, story mapping, and dramatization were used.

In the fall, all children were administered four subtests of the Woodcock Language Proficiency Battery-Revised (Picture Vocabulary, Letter-Word Identification, Word Attack, and Passage Comprehension) to measure abilities and achievements in oral language. These same assessments were administered again in the spring to measure any oral language gains. Statistical significant differences were reported for Word Attack, Passage Comprehension, and Picture Vocabulary for the experimental condition. However, the effect sizes were relatively small, +0.21, +0.16, and +0.11, respectively. Because, no assessments were employed to measure the efficacy of the instructional approach on the targeted vocabulary,



the vocabulary gains may be attributed to the bilingual aspect of the program or other unknown variables. When investigating the efficacy of a vocabulary program among ELLs, it would be advantageous to examine the amount of vocabulary learning that occurred as a result of explicit instruction as well as general vocabulary growth.

### **Explicit Vocabulary Instruction using Taxonomical Structures**

Employing the principle of categorical scope from the Emergentist Coalition Model (ECM), Neuman et al. (2008) used taxonomic structures as a key component of their World of Words (WOW) vocabulary curriculum. Neuman et al. proposed that organizing concepts taxonomically develops mental representations and a strategy for efficiently storing new information. WOW, a 12-minute supplemental vocabulary program, utilized video, pictures, and information books to teach sophisticated, high-utility word meanings and common word meanings. The WOW program was implemented over an 8-week period in preschool readiness programs that served low-income children. A total of 322 children from 22 classrooms (12 treatment conditions and 10 control conditions) participated in the research. The experimental classrooms integrated the WOW vocabulary within their curriculum. Teachers in the control classroom conditions followed the preschool curriculum.

Using quantitative and qualitative methodologies, Neuman et al. (2008) used a formative experiment to examine the challenges of meeting the vocabulary objectives of the WOW program, the interactions between the teachers and students, and the level of word learning through taxonomic structures.

They found one of the greatest challenges in implementing the program was time. Considering that the program was designed to occur during a 12-minute period with whole-group circle time, this is not surprising. Teachers expressed concerns about going over the

time allotted for the program, especially because the materials and topics invited children to engage in rich and interesting conversations. As a result, teachers made several adaptations to the program such as using the manual more selectively and engaging students in whole-group choral responses at the beginning of each lesson. As the teachers became more comfortable with the program they experienced less difficulty with pacing. Supporting children's talk during the instructional period remained a challenge throughout implementation. The teachers also noticed that the more interesting the children found the topic the easier it was to engage students in quality interactions and the easier it was for the students to learn the vocabulary associated with a particular topic. Another area of concern expressed by the teachers was their discomfort in teaching Tier 2 words at the beginning of the project. They felt the level of difficulty of Tier 2 words would be too rigorous and challenging for the students. However, the teachers found that children were drawn to the sophisticated vocabulary related to particular topics.

In examining the quality of the interactions between the teachers and students, the researchers found that at the beginning of the project teachers engaged in more basic talk. Basic talk referred to choral response, recall, and simple feedback. Midway through the implementation process, frequency ( $t = 6.92; p < .001$ ) and quality of interactions changed significantly ( $t = 9.98; p < .001$ ) between the experimental groups and the control groups. Teachers in the intervention program had twice the number of supportive interactions. Supportive interactions were characterized as conversations that engaged students in dialogic (Whitehurst et al, 1994) conversations by using open-ended questions.

In their final finding, the researchers reported significant gains in word growth for children in the intervention program. Using the Picture Naming subtest of the PPVT-III,

children in the treatment group made statistically significant gains in their expressive language,  $F(1, 319) = 10.99, p < .001$ , Cohen's  $d = .51$ . They also reported a similar main effect for the WOW expressive assessment,  $F(1, 319) = 49.91, p < .001$ , Cohen's  $d = .88$ . However, scores on the PPVT-III revealed no significant gains indicating that although children made significant gains on expressive measurements, no gains on general receptive vocabulary were made. These results are interesting because developing a receptive vocabulary requires less cognitive energy than developing an expressive vocabulary (Read, 2000).

Interestingly, in an examination of the level of word difficulty they found that on a sampling of small corpora of words children retained 73% of common words and only 57% of the sophisticated words. Although only a small corpus of words was used, this provides evidence to support Biemiller and Boote's (2006) position that the words most likely to be learned are word meanings of general value and that are known by 40% to 80% of the children in second grade. It also supports the teachers' concerns that more than 12 minutes of instruction is needed for students to learn the sophisticated words recommended by Beck and McKeown (2002).

In their final analysis of children's conceptual knowledge, they found that children in the treatment condition were able to make inferences about words in new learning situations. Statistically significant differences between the intervention classrooms and the treatment classrooms revealed the children were able to correctly sort items that were not specifically taught in two specific units of study, Wild Animals and Parts of the Body. This finding suggests children learn properties of concepts and use those properties to form relationships between conceptual knowledge and word learning.

In summary, the vocabulary gap that continues to exist among children from diverse language and economic populations with their linguistically advantaged peers remains a huge challenge for educators. Vocabulary research continues to support a vocabulary curriculum that incorporates a wide-variety of instructional methods and strategies. Research results also indicate explicit vocabulary instruction produces significant gains on receptive and expressive measures. However, are these gains large enough to make a difference in the academic lives of children with below-average vocabularies?

### **Theoretical Framework for a Concept Sort Vocabulary Intervention**

Considering the complex and difficult nature of teaching and learning vocabulary, I designed this intervention to reflect my understanding of the principles and theory that guide vocabulary instruction. The framework that I propose involves increasing children's vocabulary knowledge through listening to storybooks read aloud and the interactions that occur throughout the experience, increasing children's knowledge of specific words by providing brief explanations of a word's meaning in the context of the storybook read aloud, and using concept sorts to support children gain *full ownership* or productive use of the vocabulary (Nation, 1990; Scott, et al., 2006; Snow, et al., 1998; Stahl & Nagy, 2006). With the exception of concept sorts, the design of this intervention was related to practices shown to be effective in previous vocabulary research (Beck & McKeown, 2007b; Biemiller & Boote, 2006; Blachowicz & Fisher, 2000; Calderon, et al., 2005; Leung, 2008; Neuman, et al., 2008; Roberts, 2008; Silverman, 2007a, 2007b).

The storybook reading and vocabulary studies cited previously provided evidence to support incidental vocabulary growth occurs as a result of exposure to rich language through quality literature and interactions among peers and responsive adults. Incidental word

learning accounted for 12% of the vocabulary growth in the Biemiller and Boote (2006) study. Given the large gap of vocabulary knowledge that exists prior to entering school and which continues to persist through the elementary years and beyond, a higher growth rate is required in order to make a significant difference in children's vocabulary knowledge. The design of this study has the potential to foster greater growth in children's vocabulary learning.

Many of the vocabulary researchers draw from word learning principles which explain how children first begin to learn to words and the mechanisms involved in the enormous growth spurt in their word learning to guide their approaches for increasing children's vocabulary knowledge (Beck & McKeown, 2007b; Biemiller & Boote, 2006; Leung, 2008; Roberts, 2008; Silverman, 2007a, 2007b). One of the most common principles guiding vocabulary development is the principle of *fast mapping*.

Carey (1978) used the idea of fast mapping to explain the word growth in children between the ages of 3 to 6. By observing children in preschool settings, Carey noticed how quickly and with relative ease they acquired a *conceptual* referent for a new word, and, although the new word was quickly learned, it took much longer to understand the concept completely. Fast mapping occurs when "one, or a very few, experiences with a new word can suffice for the children to enter it into his mental lexicon and to represent some of its syntactic and semantic features" (Carey, 1978, p. 44). One way the principle of fast mapping is incorporated into vocabulary research is by providing brief explanations of word meanings in the context of a storybook read aloud or during interactions that occur among teachers and children. For this study, fast mapping is used when the vocabulary is introduced, during the

storybook read aloud, and through the interactions that are facilitated by the teacher. This principle is used equally in both the treatment and control conditions.

The word learning principle, *novel-name-nameless category* (N3C), used by Schwanenflugel (2005) explains how children develop the ability to attach a “nameless object reference as soon as a novel word is heard. N3C helps children determine *which* whole object a new word should map onto” (Hollich, Hirsh-Pasek, & Michnick, 2000). N3C facilitates rapid word growth because it allows children to determine an unnamed referent upon hearing a novel name. Furthermore, it states that a quick map occurs between a novel word and an unnamed object when a hypothesis is formed about the meaning of the novel word. As the meaning is established the novel name attaches onto the unnamed object (Schwanenflugel et al., 2005). In developing the concept sorts, I paid particular attention to the pairing of the vocabulary items. When selecting the words for the concept sorts I felt there would be a strong possibility that some of the children would already know a small percentage of the words or at least have some partial understanding of the concept, so I intentionally tried to pair those words with the words I felt would be more difficult to learn (e.g., plant, harvest).

Another principle that regulates word learning is *categorical scope*. Categorical scope refers to the idea that words classify objects based on similarities and shared features, also known as taxonomical categories. This begins by categorizing objects by shared perceptual properties then proceeds to the superordinate level (Booth & Waxman, 2009). This principle allows children to extend novel labels that are within the same taxonomic category. Neuman et al. (2008) were the first to explicitly investigate the viability of taxonomic structures as a means to foster vocabulary growth. In this study, teachers engaged children in sorting

activities as a method for developing vocabulary. For example, when studying insects, the teacher would hold up a picture of a bat and the teacher would ask, “Is this an insect?” The students, as a whole group, would chorally respond either yes or no. This would be followed by an explanation as to why it is or is not considered an insect because of certain features or attributes. The results from Neuman et al. suggest the efficacy of explicitly teaching vocabulary by using taxonomical structures.

Concepts sorts force children to think about the meaning of a word in terms of particular features and attributes and to use precise language to express their thinking. By incorporating concept sorts within the context of a storybook read aloud, the design of this study furthers Neuman et al. (2008) line of research by continuing to explore the efficacy of concept sorts when children complete the sorts individually or in a small-group setting. This study compares the efficacy of concept sorts with the more traditional approach of the interactive storybook read aloud.

## Chapter 3

### Method

The purpose of this chapter is to explain how the study was conducted. First I will provide an overview of the study by reviewing the research questions and sharing a table of the research design. Second, I will provide a description of the methods. Third, the participants and the setting will be described. Next, the data collection procedures, including the time-line and description of measurements, will be shared. The final section described the data analyses that were used to answer the research questions.

### Research Questions

The main purpose of this investigation was to examine the effect of storybook read alouds plus concepts sorts on children's vocabulary learning and conceptual development. This leads to the primary question of this study: Will concept sorts improve the vocabulary learning of kindergarten age children? Other questions involving student populations, grouping configurations and development will also be addressed. As a result, there are a number of derivative questions in this study that include: (a) How does children's language status (English as primary language and English as a second language) affect word learning? (b) What is the relationship among orthographic knowledge, alphabet knowledge, letter-sound knowledge, concept of word, Total Pretest score, and PPVT-IV with the learning of the targeted vocabulary? (c) What are the qualities of the interactions between the teachers and students during concept sorts and storybook read-alouds (e.g., number of times the word is spoken and heard, type of teacher talk-supportive or basic)? The following table provides an overall description of the research project.



Research Questions	Data	Analysis	Collection Process
1. Will concept sorts improve the vocabulary learning of kindergarten age children?	Target Word Test pretest, posttest, and delayed posttest measures, PALS-K subtest measures, PPVT-IV measure	An ANOVA using repeated measures analyses was performed. Treating the scores attained on the pretest, posttest, and two-week delayed posttest of Target Word Test measure as repeated measures, differences on the number of vocabulary words learned between the storybook read aloud only condition and storybook read aloud plus concept sorts treatment were computed.	Vocabulary pretest data were collected 1 week prior to the study. Vocabulary posttest data were collected at the end of the two-week instructional period. Vocabulary delayed posttest data were collected two weeks following the end of the two-week instructional period.
2. How does children's language status (English as a primary language and children learning English) affect vocabulary learning?	Target Word Test pretest, posttest, and delayed posttest measures	An ANOVA using repeated measures analyses was performed. Treating the scores attained on the pretest, posttest, and two-week delayed posttest of Target Word Test measure as repeated measures, differences on the number of vocabulary words learned by children identified as English proficient and as English language learner in the storybook read aloud only condition and storybook book read aloud plus concept sorts treatment were computed.	Vocabulary pretest data were collected 1 week prior to the study. Vocabulary posttest data were collected at the end of the two-week instructional period. Vocabulary delayed posttest data were collected two weeks following the end of the two-week instructional period.
3. What is the relationship among orthographic knowledge, alphabet knowledge, letter-sound	Target Word Test pretest, posttest, and delayed posttest measures, PALS-K	First, a Pearson <i>r</i> measure was conducted to compute correlations among literacy variables (Alphabet Knowledge, Letter Sound Knowledge, COW, QSI, Total Pretest, PPVT-IV, and Total	Pretest data were collected 1 week prior to the study. Posttest data were collected at the end of the two-week instructional period. Delayed posttest data were collected two weeks following the end of the two-week

knowledge, concept of word, Total Pretest score, and PPVT-IV with the learning of the targeted vocabulary?	subtest measures, PPVT-IV measure	Delayed Posttest). To predict which of the six literacy measures (Alphabet Knowledge, Letter Sound Knowledge, COW, QSI, Total Pretest, and PPVT-IV) could be used to best predict the scores on the Total Delayed Posttest measure, three multiple regression analyses were conducted.	instructional period.
4. What is the quality of interactions among the teachers and students during concept sorts and storybook read alouds (number of times the vocabulary is spoken/heard, type of teacher talk-supportive or basic?)	Field notes, video transcripts	The find and replace feature of Microsoft Word was employed to determine the number of times a vocabulary word was used by the teachers and students. Descriptive statistics were then used to describe the differences in the number of times a word is heard or spoken. In addition, Using the framework developed by Neuman et al. (2008), the interactions between the teachers and students were coded as basic or supportive.	<i>Video:</i> Four storybook read aloud sessions were videotaped per classroom at the beginning and at the end of each week of the implementation. In addition, four guided concept sort sessions were videotaped. This occurred at the beginning and at the end of each week of the implementation.

## Design

The primary purpose of this study was to compare two approaches to vocabulary instruction. I used a *within-group, quasi-experimental pretest, posttest, delayed posttest design* to compare the vocabulary learning of kindergarten age children assigned to the two conditions. Within the context of the quasi-experimental design, I collected qualitative data to observe the qualitative aspects in language use among the classrooms. I also examined the relationship among children's vocabulary knowledge and emergent literacy skills (e.g.,

orthographic development, alphabet knowledge, letter-sound knowledge, and concept of word).

The classrooms were randomly assigned to one of two treatment conditions. Children in the control condition received enriched storybook reading using an interactive approach and children in the treatment condition received enriched storybook reading plus concept sorts. Each condition received the enriched storybook read aloud in a whole class setting. The instruction was delivered by the classroom teachers through a whole group configuration. Teachers in the enriched storybook reading plus concept sorts condition modeled the concept sorts using a whole group configuration, then provided guided practice using small group configurations and independent practice. The instructional framework for each condition are described in further detail under the heading *Instructional Practices*.

This design permitted the examination of the between-subjects effects of treatment on target vocabulary acquisition. Three weeks prior to the intervention, children were administered the Peabody Picture Vocabulary Test (PPVT-IV) to obtain a general level of vocabulary knowledge. Students who scored at least two standard deviations below the average were excluded from the study. These students were omitted from the study because scoring two deviations below the average may indicate a language and/or learning disability and this went beyond the scope of this study. Students' knowledge of the selected vocabulary was assessed a week prior to implementation of the study using the target word test. To assess the vocabulary learning of the children, the same target word test was administered again directly following the instructional component. Following the posttest by two weeks, the third administration of the same target word test on the vocabulary served as a retention measure of the words. This followed the posttest by two weeks. Early literacy skills were

measured using the alphabet, concept of word, and spelling subtests from the Phonological Awareness Literacy Screening (PALS-K). In addition, school district personnel administered the Language Assessment System (LAS Links) to all kindergarten children learning English in the fall of the school year. Except for the PALS-K spelling subtest, all assessments were individually administered.

Two sets of vocabulary words were chosen for this study. The selection of the vocabulary words was based on research and guidelines set by Beck and McKeown (2007), Biemiller and Slonim (2001), and Neumann et al. (2008). Specifically, the following set of selection criteria was used for choosing words. First, the vocabulary words chosen for the first week of instruction were considered to be of high-utility, most likely be encountered across a variety of texts, and key to comprehension. Second, the vocabulary words chosen for the second week of instruction were selected to support deeper conceptual understanding of the science content presented. Finally, the vocabulary words selected for the study were easily represented pictorially.

Learning the first set of vocabulary words (*harvest, plant, lazy, wealth, yank, toss, pile, scoop, holler, and scowl*) provides students with the ability to describe concepts they may already be familiar with more precision and specificity. The second set of vocabulary words (*seeds, roots, stem, leaves, flower, corn, peas, broccoli, carrot, cauliflower, lettuce, cabbage, celery, radish, and beets*) allows students to form rich connections to other words and concepts.

Materials in this study consisted of a copy of three storybooks, *Tops and Bottoms*, *Plants on My Plate*, and *The Vegetable Garden*, and a set of vocabulary cards for each classroom. In addition, the teachers in the storybook read aloud plus concept sorts condition

received classrooms sets of the concept sorts. The storybook, *Tops and Bottoms*, was selected because it is a popular children's literature book appropriate for this age group of children. The informational texts, *Plants on My Plate* and *The Vegetable Garden*, were selected because they present domain specific vocabulary and content concepts appropriate for this particular age group.

Videotaping occurred throughout the two-week instructional period. Four storybook read aloud sessions were videotaped in each of the classrooms and four guided concept sort sessions were recorded in each of the treatment classrooms. Two classroom observations were conducted, once at the beginning and once at the end of the study. Field notes were used during the observations to record any observations as they related to the instructional practices and student learning. I conducted all of the videotaping and classroom observations.

### **Project Timeline**

The research project proceeded as follows:

Week 1 – 3	Administration of the PPVT-III, PALS-K, target word test, pretest Unit 1 (note: Following state and district guidelines, the school's ESL teachers administered LAS assessment in the fall)
Week 4	Targeted Instruction Unit 1: Storybook reading and guided concept sorts
Week 5	Targeted Instruction Unit 2: Storybook reading and independent concept sorts
	Posttest target Word Test
Week 7	Two-week delayed posttest

## **Participants**

The participants were a non-random sample of 71 at-risk bilingual and monolingual children from three kindergarten classrooms in a rural school located in northeastern Nevada. Using criteria developed by the Nevada State Department of Education, the school was in its sixth year of being identified as *in needs of improvement*. Seventy three percent of the students at the school qualified for the free/reduced, breakfast/lunch program. Primary languages of the children were Spanish (47) and English (14). Data are reported for 61 of the 71 children. One child moved, three children did not return the required permission forms, and six children were omitted because of their PPVT-IV scores. Of these 61, 29 children were female and 32 were male. The classroom teachers varied in their years of experience. The teacher in classroom A had 29 years of teaching experience, the teacher in classroom B had 10 years of experience, and the teacher in classroom C had 16 years of experience. All the kindergarten classrooms at this school were full-day programs. Classrooms A and B were assigned to the storybook read aloud plus concept sorts treatment. Classroom C was assigned to the storybook read aloud only condition.

## **Description of Instruments**

### **Peabody Picture Vocabulary Test-IV (PPVT; Dunn & Dunn, 2007)**

The PPVT is a standardized, individually administered test of receptive language and vocabulary that assesses a student's ability to comprehend word meanings. The PPVT was administered to characterize participants' overall receptive vocabulary knowledge prior to the start of the intervention. In the PPVT, students are presented with four pictures and are asked to point to the picture that corresponds with a word spoken by the examiner.

Standard scores are derived based on the number of correct items and the student's chronological age. The PPVT has a mean of 100 and a standard deviation of 15. Reported test-retest reliability is .77, and the alternative form reliability is .82 (Dunn & Dunn, 1999).

Validity is described as the degree a test measures what it purports to measure. Validity findings for the PPVT report (a) the PPVT correlates strongly with other measures of vocabulary, (b) it correlates moderately with tests of intelligence, and (c) it correlates reasonably well with measures of school achievement, but it is not a reliable measure of predicting school success. The results indicated an overall median value of .71 when correlating the PPVT with other vocabulary measures. In relationship to individual intelligence tests, the PPVT scored a median correlation of .61 with the *Stanford-Binet Scale*, a median correlation of .64 with the *Wechsler Intelligence Scale for Children*, and a median correlation of .71 with the *Wechsler Adult Intelligence Scale*. Median correlations with four achievement measures, *Peabody Individual Achievement Test (PIAT)*, *Wide Range Achievement Test (WRAT)*, *California Achievement Test (CAT)*, and *Metropolitan Achievement Tests (MAT)*, ranged from a low of .29 for MAT and a high of .68 with the PIAT.

### **Target Word Test**

Children's knowledge of the targeted vocabulary was measured by an assessment developed by the student investigator. The test followed a free-call (Neumann et al., 2008) format. For each target word in the first set of words, children were asked questions such as, "What does \_\_\_\_\_ mean?" The question, "Can you tell me anything more about \_\_\_\_\_?" will be used as a follow-up question to children's initial response. This follow-up question was designed to encourage the children to tell everything they know about the word.

For the second set of words, the students were shown a picture and the students were asked to name the picture. The first pictures displayed were seeds, roots, stem, leaves and flower. Next, the students were shown a picture of a vegetable. At this point, the students were asked to name the vegetable and to identify the part of the plant the vegetable was. The students responded orally. These responses were coded as incorrect (no or little understanding of the target word) or correct (full understanding of the target word). Since this is a measurement I developed, there are not reliability or validity data for these measures.

### **Phonological Awareness Literacy Screening – Kindergarten (PALS-K)**

The PALS-K is a standardized, individually and group administered assessment of early literacy. Specifically, the PALS-K measures kindergarten children's knowledge of important literacy fundamentals. For this study, children's alphabet knowledge, letter sound knowledge, phoneme-grapheme correspondences, and concept of word in text were assessed. In the alphabet subtask measure, children were asked to identify a series of randomly presented, upper-and lower-case letters. Children's knowledge of letter sounds and the application of letters sounds were assessed through the letter sound subtask and the spelling subtask. In the letter sound task, children were asked to point to each and say the sound the letter represents. The spelling subtask consists of five consonant-vowel-consonant (CVC) words. In scoring children received a point for each phonetic representation of the beginning, middle, and ending sound. Concept of word in text measured the children's ability to match spoken words to written words as they read.

Reliability measures were conducted for test-retest reliability, subtask reliability, and interrater reliability. The results for test-retest reliability ranged from .78 to .95 on the various subtests. Interrater reliabilities measurements scored high in the range of .96 - .99.



Specifically, subtest measurements were used to assess the children's alphabet knowledge, concept of word, and spelling.

Predictive validity was measured by comparing scores from the PALS with the *Stanford Achievement Test (Stanford-9)*. This was accomplished in two ways. First, students' fall assessment scores were compared with spring assessment scores. In addition, a group of 74 kindergarteners were screened using the PALS-K at the beginning of the school year. The kindergarten students did not receive any additional instruction outside of the regular school curriculum. In the spring, the students were assessed using *Stanford-9*. The correlation between the PALS Summed Scores and spring Stanford-9 Total Reading scaled scores was .70. Concurrent validity was demonstrated when the end-of-year kindergarten PALS Summed Score was compared with the Total Reading scaled score of the Stanford-9. The correlation was .72. In addition, correlations between the PALS Summed Score and three Stanford-9 subtest scaled scores were reported as .79 with Sound and Letters, .74 with Word Reading, and .58 with Sentence Reading.

**Language Assessment System (LAS Links).** The LAS Links English Language proficiency assessment measures the five major language domains of speaking, listening, reading, writing, and comprehension. The administration of the assessment occurs both individually and group. The responses are comprised of both multiple choice and constructed response. Rubrics are used to score the constructed responses. I was not able to report reliability and validity measures for this instrument.

### **Instructional Practices**

The instructional components of this project were used in conjunction with the school's adopted reading program and occurred outside of the regular 90-minute instructional

reading block from which all the students received. The instructional activities in this study were designed to supplement the adopted reading program and not to sub-plant any component of the adopted reading program.

For the storybook read aloud only condition and the storybook read aloud plus concept sorts treatment condition, the storybooks used in this investigation were read aloud to all of the students using a whole group configuration. During the whole class storybook read aloud, the teachers followed an interactive storybook reading framework in which the teachers provided rich, explicit definitions of target vocabulary during the reading of the story (Beck & McKeown, 2007, Biemiller & Boote, 2006; Silverman, 2007a, 2007b). See appendix A. Rich, explicit definitions consisted of any of the following: (a) identifying the target words using pictures or props prior to reading the story; (b) pointing to the target words as they are identified; (c) providing a meaningful definition of the word; (d) providing a synonym; (e) using the word in a different context; (f) having the students using the word in a context and share with a partner; (g) acting out the meaning of the word; (h) asking children to pronounce the word; and (i) recognizing the spelling of word. The read aloud schedule was as follows: On day one the teacher introduced a set of 5-6 words and explained “as I read I will stop to explain the meaning of these words;” on day two, the teacher followed the same procedures using the same set of words but would add a synonym to the definition if the teachers felt the synonym was in their students’ vocabulary as well as using the word in a different context; on day three the teacher followed the same procedures as day one but with a different set of vocabulary words; and on days four and five, the teacher followed the same procedures as days one and two with the new set of words. The lessons provided to teachers were to be viewed as a lesson framework instead of a script. The

teachers were encouraged to use their knowledge and expertise when implementing the lesson. However, within each lesson the teachers were required to (a) introduce the vocabulary prior to the reading, (b) provide rich, explicit definitions within the lesson, and (c) incorporate dialogic reading practices throughout the read aloud. See appendix A.

Children in the storybook reading plus concept sorts condition received explicit vocabulary instruction using concept sorts. Following the storybook read aloud, the teacher engaged the students in a concept sort related to the story and the target vocabulary. See appendix B. First the teacher modeled and explained the sort. Then the teacher used small groups (3-4 children) and independent practice to provide guided practice. The lessons provided were to be viewed as a framework not a script.

The teachers were expected to follow a specific routine as they implemented the concept sort lessons. Each day, the teacher introduced the sort by naming and identifying the guide pictures and sorting pictures. Then the students chorally recited the names of each of the guide and sorting pictures with the teacher. Next, the teacher modeled the sort by introducing the guide pictures and explaining the categories for the sort. During the modeling the teacher sorted two to three pictures. As the teachers sorted the pictures, she would contrast each picture with each of the guide pictures. She would then explain where she was placing the picture and she would provide an explanation using specific attributes of the vocabulary in her explanation. Before placing the students in small groups, the teacher would select one or two students to model the sort to the whole class. The students then collaboratively worked on the sort in small groups. Directly following the collaborative practice, students then independently completed the sort. As students completed the sorts, collaboratively and independently the teacher monitored the learning asking the students to

explain their sorts. Following is a table of the instructional sequence for the control and treatment conditions.

#### Storybook Reading Conditions Table

##### Week One

Day One	Day Two	Day Three	Day Four	Day Five
<i>Tops and bottoms</i>	<i>Tops and bottoms</i>	<i>Tops and bottoms</i>	<i>Tops and bottoms</i>	Assess vocabulary

##### Week Two

Day One	Day Two	Day Three	Day Four	Day Five
<i>Plants on my plate, The vegetable garden</i>	<i>Plants on my plate, The vegetable garden</i>	<i>Plants on my plate, The vegetable garden</i>	<i>Plants on my plate, The vegetable garden</i>	Assess vocabulary

#### Storybook Reading Plus Concept Sorts Table

##### Week One

Day One	Day Two	Day Three	Day Four	Day Five
<i>Tops and bottoms</i> Concept sort – plant/harvest	<i>Tops and bottoms</i> Concept sort – lazy/wealth	<i>Tops and bottoms</i> Concept sort – pile/scoop	<i>Tops and bottoms</i> Concept sort – holler/scowl	<i>Tops and bottoms</i> Concept sort – yank/toss

##### Week Two

Day One	Day Two	Day Three	Day Four	Day Five
<i>Plants on my plate, The vegetable garden</i> Concept sort – stem/root/leaves/flower/seeds	<i>Plants on my plate, The vegetable garden</i> Concept sort – stem/root/leaves/flower/seeds	<i>Plants on my plate, The vegetable garden</i> Concept sort - vegetable/non-vegetable	<i>Plants on my plate, The vegetable garden</i> Concept sort – vegetable/non-vegetable	Assess vocabulary

## Chapter 4

### Results

The purpose of the chapter is to present the findings from the implementation of the comparison study described in chapter three. First I will share the results of the preliminary analyses that describe any differences among the classrooms. Next I will address each of the research questions by sharing the results of the analyses that present the empirical findings of the vocabulary intervention, correlations among assessment measurements, and the qualitative attributes of the vocabulary instruction.

#### Analyses

**Differences across classrooms on PALS-K subtests.** Prior to the intervention four subtests (Alphabet Knowledge, Letter/Sound Knowledge, Concept of Word, and Qualitative Spelling Inventory) of the PALS-K were administered to the participants. A one-way analysis of variance (ANOVA) was conducted to determine whether the three classrooms differed according to the results on each of the four subtests. The results (see Table 1) revealed there were no statistical significance differences, among the classrooms on alphabet knowledge,  $F(2, 58) = .44, p = .643$ , letter/sound knowledge,  $F(2, 58) = .41, p = .668$ , COW,  $F(2, 57) = .18, p = .839$ , and qualitative spelling inventory assessments,  $F(2, 58) = .07, p = .92$ .

Table 1

*Means and Standard Deviations on Literacy Measures by Classroom*

	Alphabet Knowledge		Letter/Sound Knowledge		COW		QSI	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Classroom A ( <i>N</i> = 20)	23.95	4.88	19.60	5.60	13.00	6.97	15.25	5.48
Classroom B ( <i>N</i> = 21)	24.90	1.67	20.57	2.82	12.38	4.52	14.76	5.20
Classroom C ( <i>N</i> = 20)	24.45	2.30	20.65	3.47	11.89	5.80	15.25	3.06

**Differences across classrooms on language proficiency.** Next I examined the within-classroom clustering of English language learners, as identified by the LAS-Links scores, to the students identified as English proficient across all three classrooms. A one-way analysis of variance (ANOVA) was conducted on the mean LAS-Links identification scores. This analysis produced a significant analysis of variance,  $F(2, 58) = 3.645, p = .032$ , indicating that there were differences among these means (see Table 2). Follow-up tests were conducted to evaluate pairwise differences among the means. I examined these pairwise differences using Scheffe's Test because the sample sizes do not have to be equal and it is a more conservative measure than the Tukey's HSD. The results revealed that there were significantly more students identified as learning English in classroom C (15) than in classroom A (5). There were no significant differences found between classroom A and classroom B and between classroom B and classroom C.

Table 2

*Demographic Characteristics of Participants by Classroom*

	ELL	English Proficient	<i>M</i>	<i>SD</i>	<i>95% Confidence Intervals</i>
Entire Sample ( <i>n</i> = 61)	35	26	1.57	.499	
Classroom A ( <i>n</i> = 20)	7	13	1.35	.489	-.7798 to -.0202*
Classroom B ( <i>n</i> = 21)	13	8	1.61	.109	
Classroom C ( <i>n</i> = 20)	15	5	1.75	.099	.0202 to .7798*

*Note:*  $p < .05$ .

**Differences across classrooms on the Peabody Picture Vocabulary Test-IV**

(PPVT). Due to the significant differences of the within-classroom clustering of students identified as English language learners between classrooms A and C, I explored whether there would be significant differences on the students receptive vocabulary knowledge as measured by the PPVT-IV among the classrooms and between students identified as English language learners and as English proficient. As shown in Table 3, the ANOVA revealed no significant differences,  $F(2, 57) = 1.59, p = .213$ , among the classrooms on receptive vocabulary knowledge. However, students identified as English language learners significantly differed,  $F(1, 58) = 24.156, p = .000$ , in receptive vocabulary knowledge as measured by the Peabody Picture Vocabulary Test-IV (PPVT-IV) from the students identified as English proficient. The students identified as English language learners scored approximately 20 points lower than the students not identified.

Table 3

*Means and Standard Deviations on PPVT by Classroom*

	Classroom A		Classroom B		Classroom C	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
PPVT-IV	82.40	21.48	73.90	13.64	72.89	19.65

Table 4

*Means and Standard Deviations on PPVT by Language Status*

	English Proficient		Learning English	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
PPVT-IV	87.88	20.43	67.65	11.08

*Question 1: Will concept sorts improve the vocabulary learning of kindergarten age children?*

**Learning of target vocabulary.** To examine the efficacy of the vocabulary learning of kindergarten age children among the three classrooms, a one-way repeated-measure analysis of variance (ANOVA) was performed with the factor being type of vocabulary instruction and the dependent variable being the pretest, posttest, and delayed posttest scores. The means and standard deviations for the three vocabulary measures are presented in Table 5. The results for the ANOVA indicated a significant effect for time (pretest, posttest, delayed posttest measures), Wilks's  $\Lambda = .147$ ,  $F(2, 58) = 167.94$ ,  $p = .000$ , multivariate  $\eta^2 = .85$ , indicating a strong effect size. As shown in Figure 1, the boxplot illustrates the



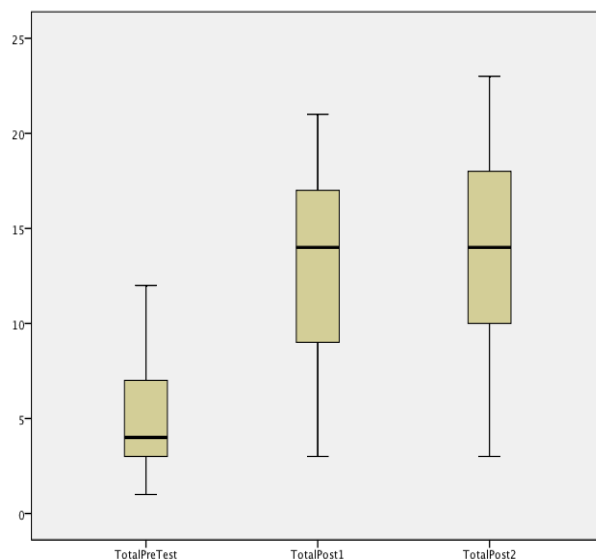
distributions of vocabulary scores among the three classrooms for the pretest, posttest, and delayed posttest vocabulary measures.

In addition, each repeated-measures ANOVA was followed up with a trend analysis testing for linear and quadratic trends. Both, the linear and quadratic trend were significant,  $F(1, 59) = 335.31, p = .000, \text{partial } \eta^2 = .85$  and  $F(1, 59) = 140.85, p = .000, \text{partial } \eta^2 = .71$ ; respectively.

Table 5

*Means and Standard Deviations for Pretest, Posttest, Delayed Posttest Measures for Time*

Vocabulary Measure	<i>M</i>	<i>SD</i>
Pretest	4.87	2.81
Posttest	13.39	5.2
Delayed Posttest	13.77	5.39



*Figure 1. Distributions of Pretest, Posttest, Delayed Posttest Scores*

In examining the time x treatment effect, further analysis of the ANOVA found that pre-to-post-to-delayed post gain in number of vocabulary words learned in the storybook plus concept sort treatment (Classrooms A & B) was significantly higher than the pre-to-post-to-delayed post gain in number of vocabulary words learned in the storybook read aloud only condition (Classroom C), time x treatment, Wilks's  $\Lambda = .587$ ,  $F(2, 58) = 20.42$ ,  $p = .000$ . Eta squared was .41, indicating a strong effect size. Pretest, posttest, and delayed posttest means and standards deviations for the control and treatment conditions are presented in Table 6. Follow-up trend analysis testing indicated significant linear and quadratic trends, with means increasing over time,  $F(1, 59)$ ,  $p = .000$ , partial  $\eta^2 = .412$  and  $F(1, 59)$ ,  $p = .000$ , partial  $\eta^2 = .19$ ; respectively.

Children scored significantly higher on the delayed posttest measurement than on the pretest. The results of the analyses revealed that although children's knowledge of the vocabulary was not significantly different at pretest, children who received storybook read alouds plus concept sorts learned significantly more of the vocabulary than children who received storybook read alouds on posttest and delayed posttest measures. At the time of the pretest, students in the storybook read aloud plus concept sorts treatment knew on average the meaning of 5.02 of the targeted vocabulary and students in the storybook read aloud only condition knew on average the meaning of 4.55 of the targeted vocabulary. For the storybook read aloud plus concept sorts, the mean gain was 10.74 vocabulary words learned. For the storybook read aloud only, the mean gain was 5.15 vocabulary words learned. This equated to a 50% gain in targeted vocabulary for the storybook reading plus concept sorts treatment compared to a 25% gain in targeted vocabulary for the storybook read aloud condition only.

Table 6

*Means and Standard Deviations for Pretest, Posttest, Delayed Posttest Measures for Treatment*

Vocabulary Measure	Control (N=20)		Treatment (N=41)	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Pretest	4.55	2.82	5.02	2.83
Posttest	9.65	4.39	15.22	4.57
Delayed Posttest	9.70	4.52	15.76	4.64

*Question 2: How does children's language status (English proficient and English language learner) affect word learning?*

**Differences in vocabulary learning between students identified as English language learner and English proficient among the classrooms.** To examine any differences that may have existed between English language learners and English proficient students on the target word test scores, a one-way repeated-measure analysis of variance (ANOVA) was performed with the factor being ESL status (English language learner vs. English proficient) and the dependent variable being the pretest, posttest, and delayed posttest scores. The means and standard deviations for the three vocabulary measures are presented in Table 6. The results for the ANOVA indicated a significant effect for time x ESL status, Wilks's  $\Lambda = .828$ ,  $F(2, 56) = 5.82$ ,  $p = .005$ . The multivariate  $\eta^2 = .172$  indicates a strong effect size. This analysis was followed up with a trend analysis testing for linear and quadratic trends. Only the linear trend was significant,  $F(1, 57)$ ,  $p < .05$ , partial  $\eta^2 = .088$ . These results indicate that significant gains were made on the target word test from pretest to

delayed posttest among all participants. This analysis also produced a significant analysis of variance for time x treatment x ESL status, Wilks's  $\Lambda = .850$ ,  $F(2, 56) = 4.95$ ,  $p = .010$ .

Partial eta squared was .150 indicating a strong effect size.

Table 7

*Means and Standard Deviations for Pretest, Posttest, Delayed Posttest Measures*

Vocabulary Measure	English Storybook		ELL Storybook		English Concept Sorts		ELL Concept Sorts	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Pretest	7.00	3.94	3.73	1.87	6.19	2.87	3.80	2.26
Posttest	12.40	5.60	8.73	3.70	16.86	4.59	13.50	3.98
Delayed Posttest	14.80	4.15	8.00	3.23	17.33	4.54	14.10	4.22

Children learning English and who received concept sorts as a part of their vocabulary instruction demonstrated higher mean gains than children learning English in the storybook read aloud only condition. In fact, children learning English in the storybook read aloud only condition experienced a slight loss from posttest to delayed posttest. Children identified as English proficient in the concept sort treatment demonstrated the highest gains with a mean gain of 11.4 vocabulary words learned. Children identified as learning English in the concept sorts treatment demonstrated the second highest gains with a mean gain of 10.3 vocabulary words learned. Children identified as English proficient in the storybook read aloud only condition demonstrated a mean gain of 7.8 vocabulary words learned, whereas children identified as learning English in the storybook read aloud only condition showed a mean gain of only 4.27 vocabulary words learned. This study produced support for

the idea that using concept sorts as a instructional activity to foster vocabulary development is equally beneficial for English proficient students and for students learning English.

*Question 3: What is the relationship among orthographic knowledge, alphabet knowledge, letter-sound knowledge, concept of word, Total Pretest score, and PPVT-IV with the learning of the targeted vocabulary?*

**Correlations among assessments.** In this section, I report relationships among the literacy variables (Alphabet Knowledge, Letter/Sound Knowledge, COW, QSI, PPVT-IV, Total Pretest score, and Total Delayed Posttest score). To investigate relationships among performance on the vocabulary measures (Total Pretest, PPVT-IV, and, Total Posttest 2) and the four emergent literacy measures (Alphabet Knowledge, Letter/Sound Knowledge, COW, QSI, PPVT-IV, and Total Pretest scores), correlation coefficients were computed among all of the measurements. The correlations among the seven literacy measures are presented in Table 8.

|

Table 8

*Correlations among Total Post 2, Alphabet Knowledge, Letter/Sound Knowledge, COW, QSI, PPVT, and Total PreTest Scores (N=61)*

	TPT2	ABC	L/S	COW	QSI	PPVT	TPT
TPT2							
ABC	.418*						
L/S	.408*	.788*					
COW	.552*	.360*	.553*				
QSI	.491*	.432*	.517*	.678*			
PPVT	.691*	.206	.385*	.500*	.440*		
TPT	.662*	.262	.387*	.606*	.495*	.757*	

Note: \*  $p < .05$ . Total Post 2 = TP2, Alphabet Knowledge = ABC, Letter/Sound Knowledge = L/S, Concept of Word = COW, Qualitative Spelling Inventory = QSI, Peabody Picture Vocabulary Test = PPVT, and Total PreTest = TPT.

Using the Bonferroni approach to control for Type I errors across the 21 correlations, a value of less than .002 (.05/21) was required for significance. The results of the correlation analyses presented in Table 4 show that 19 of 21 correlations were statistically significant and ranged from a definite, moderate relationship (correlation coefficients, .10, small; .30, medium; and .50, large) to a large, marked relationship. The correlations between Alphabet Knowledge and Letter/Sound Knowledge, and Total Pretest scores and PPVT, indicates strong associations between these variables, where 62% of the variance of the Alphabet Knowledge variable is accounted for by its relationship with Letter/Sound Knowledge and 57% of the variance of the PPVT-IV variable is accounted for by its relationship with the Total Pretest score. Correlation coefficients indicate strong associations between Concept of

Word and all other measures, with Alphabet Knowledge being the only exception where only a moderate relationship was demonstrated. Concept of Word shares 31% of the variance with Letter/Sound Knowledge, 46% of the variance with Qualitative Spelling Inventory, 25% of the variance with the PPVT-IV, 37% of the variance with the Total Pretest, and 30% of the variance with the Delayed Posttest. Strong relationships exist between Total Pretest scores and Total Posttest scores, where 44% of the variance of the Total Pretest scores is accounted for by its relationship with the Total Posttest score. A strong association between the PPVT-IV score and Total Posttest score was demonstrated, where 48% of the variance of the Total Posttest score is accounted for by its relationship with the PPVT-IV score. The correlations between Alphabet Knowledge, Letter/Sound Knowledge, QSI, and Total Posttest scores were positive and moderate. In general, the results suggest moderate to strong relationships between the six literacy assessment measures with the scores obtained on the Total Delayed Posttest measure (TPT2).

**Multiple regression analyses.** To predict which of the six literacy measures could be used to predict the scores on the Total Delayed Posttest measure, three multiple regression analyses were conducted. First I divided up the six literacy measures (Alphabet Knowledge, Letter/Sound Knowledge, COW, QSI, PPVT-IV, and Total Pretest) into two sets. The first set was defined as emergent literacy measures (Alphabet Knowledge, Letter/Sound Knowledge, COW, and QSI) and the second set was defined as vocabulary measures (PPVT-IV, and Total Pretest). I then ran a multiple regression to examine the validity of each set as predictors, the incremental validity of each predictor over the other sets of predictors, and the validity of all sets in combination on the criterion variable (Total Delayed Posttest score).

As shown in Figure 2, when the first set of predictors, the emergent literacy measures, were entered first the regression equation was significant,  $R^2 = .377$ , adjusted  $R^2 = .331$ ,  $F(4, 54) = 8.18$ ,  $p = .000$ . The sample multiple correlation coefficient indicated that approximately 33% of the variance of the Total Delayed Posttest score in the sample can be accounted for by emergent literacy measures. As shown in Figure 3, when the second set of predictors, the vocabulary measures, were entered first the regression equation with the vocabulary measures was also significant,  $R^2 = .723$ , adjusted  $R^2 = .523$ ,  $F(2, 56) = 30.708$ ,  $p = .000$ . The sample multiple correlation coefficient indicated that approximately 51% of the variance of the Total Delayed Posttest score in the sample can be accounted for by the vocabulary measures. Based on the results, both sets of predictors, emergent literacy measures and vocabulary measures, are strong predictors of the Total Delayed Posttest score.

Next, a multiple regression analysis was conducted to evaluate how well the literacy measures predicted Total Delayed Posttest scores. The predictors were the six literacy measures (Alphabet Knowledge, Letter/Sound Knowledge, COW, QSI, PPVT-IV, and Total Pretest), while the criterion variable was the Total Delayed Posttest score. The linear combination of the literacy measures was significantly related to the Total Delayed Posttest scores,  $R^2 = .625$ , adjusted  $R^2 = .581$ ,  $F(6, 52) = 14.25$ ,  $p = .000$ . The sample multiple correlation coefficient was .79, indicating that approximately 63% of the variance of the Total Delayed Posttest score in the sample can be accounted for by the linear combination of the six literacy measures. The emergent literacy measures and the vocabulary measures significantly predicted Total Delayed Posttest score,  $R^2$  change = .377,  $F(4, 54) = .818$ ,  $p < .01$  and  $R^2$  change = .523,  $F(2, 56) = 30.708$ ,  $p < .01$ .



In Table 9, I present indices to indicate the relative strength of the individual predictors. Of the four emergent literacy measures, Concept of Word was most strongly related to the Total Delayed Posttest measure,  $\beta = .425$ ,  $t(2.693)$ ,  $p = .009$ . Supporting this conclusion is the strength of the bivariate correlation between the Concept of Word measure and the Total Delayed Posttest measure, which was  $.552$ ,  $p = .009$ , as well as the comparable correlation partialling out the effects of the other three emergent literacy measures, which was  $.344$ ,  $p = .009$ . In examining the vocabulary measures, both the PPVT-IV and Total pretest measures were strongly related to the Total Delayed Posttest measure,  $\beta = .445$ ,  $t(3.154)$ ,  $p = .003$ ,  $\beta = .325$ ,  $t(2.302)$ ,  $p = .023$ , respectively. The strength of the bivariate correlation between the PPVT-IV measure and the Total Delayed Posttest measure was  $.691$ ,  $p = .003$ , as well as the comparable correlation partialling out the effects of the Total pretest measure, which was  $.388$ ,  $p < .01$ . The strength of the bivariate correlation between the Total pretest measure and the Total posttest 2 measure was  $.662$ ,  $p = .025$  and after partially out the effects of the ESL and PPVT measures the strength of the correlation was  $.294$ ,  $p = .025$ .

#### Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.614 <sup>a</sup>	.377	.331	4.37831	.377	8.182	4	54	.000
2	.790 <sup>b</sup>	.625	.581	3.46407	.247	17.132	2	52	.000

- a. Predictors: (Constant), QSI, AlphabetKnowledge, COW, LetterSoundKnowledge  
 b. Predictors: (Constant), QSI, AlphabetKnowledge, COW, LetterSoundKnowledge, PPVT, TotalPretest

Figure 2. Regression Equation of Emergent Literacy Measures

## Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.723 <sup>a</sup>	.523	.506	3.76294	.523	30.708	2	56	.000
2	.790 <sup>b</sup>	.625	.581	3.46407	.102	3.520	4	52	.013

a. Predictors: (Constant), TotalPretest, PPVT

b. Predictors: (Constant), TotalPretest, PPVT, AlphabetKnowledge, QSI, COW, LetterSoundKnowledge

Figure 3. Regression Equation of Vocabulary Measures

Table 9

*The Bivariate and Partial Correlations of the Predictors with Total Posttest 2*

Predictors	Correlation between each predictor and Total posttest 2	Correlation between each predictor and the Total Posttest 2 controlling for all other predictors
ABC	.418*	.243
L/S	.408*	-.110
COW	.552*	.344**
QSI	.491*	.128
PPVT	.691*	.388**
TPT	.662*	.294*

Note: \*  $p < .05$ , \*\*  $p < .01$ . Alphabet Knowledge = ABC, Letter/Sound Knowledge = L/S, Concept of Word = COW, Qualitative Spelling Inventory = QSI, Peabody Picture Vocabulary Test = PPVT, and Total PreTest = TPT.

*Question 4: What are the qualities of the interactions between the teachers and students during concept sorts and storybook read alouds (e.g., number of times the word is spoken and heard, type of teacher talk, basic or supportive?)*

**Qualitative Language Differences among Classrooms.** An examination of the qualitative differences (number of times a word was spoken or heard, type of teacher talk-supportive or basic) in the language experiences among the classrooms and between the storybook read aloud plus concept sort treatment and the storybook read aloud only condition was accomplished by analyzing the video transcriptions of the four, videotaped lessons. The find and replace feature of Microsoft Word was employed to determine the number of times a vocabulary word was used by the teachers and students. Using the framework developed by Neuman et al. (2008), the interactions between the teachers and students were coded as basic or supportive. Basic talk refers to choral response, simple recall, and simple feedback. Supportive talk refers to the dialogical interactions (Whitehurst et al., 1994) that occur by using open-ended questions.

Students in classrooms A and B received the storybook read aloud plus concept sorts treatment and the students in classroom C received the storybook read aloud only condition. During the first week of instruction two words were targeted each day for a total of ten words. The results from the first week of instruction indicated the children in classroom A had an average of 230 opportunities to listen to or use the targeted vocabulary, children in classroom B had an average of 245 opportunities, and children in classroom C had an average of 32 opportunities. With 10 words to learn during the first week of instruction and only focusing on two target words each day, the students engaged in concept sorts heard each word, approximately 115-123 number of times, whereas students in the control condition had approximately 16 opportunities. During the second week of instruction the activities for each day utilized all 15 vocabulary words. The results from the first week of instruction indicated the children in classroom A had an average of 679 opportunities to listen to or use the

targeted vocabulary, children in classroom B had an average of 523 opportunities, and children in classroom C had an average of 226 opportunities. With 15 words to learn during the second week of instruction, the students engaged in concept sorts heard each word, approximately 35-45 times, whereas the students in the control condition had 15 opportunities. Children in the storybook reading plus concept sorts treatment had approximately twice the number of opportunities to use and to listen to the targeted vocabulary than children in the storybook read aloud condition.

An analysis of the type of teacher talk revealed a slightly higher percentage of supportive talk in classroom C (storybook read aloud condition) than in classrooms A and B (storybook read aloud plus concept sorts treatment). When engaging the children in storybook and vocabulary discussions, basic talk constituted 70% and supportive talk constituted 30% of the strategies used by the teacher in classroom C. In classroom A, the strategies used consisted of 88% basic talk and 12% supportive talk and in classroom B, the strategies used consisted of 79% basic talk and 21% supportive talk. This means, overall, the teachers in all three classrooms used more basic talk strategies to elicit student responses. Basic talk strategies included questions that provoked the children to provide simple feedback or close-ended responses and reinforced skill routines. The following examples are excerpts from the transcripts that illustrate basic talk used by the teachers as they read the storybook aloud to the children.

Example 1:

T: So Bear went back to sleep and Hare and his family went to work. Hare planted. Mrs.

Hare watered. Turn to your partner and tell your partner what plant means.

S: Plant means to dig holes and put the seeds in.

Example 2:

T: Turn to your partner and tell your partner the part of the plants Bear got?

S: The tops.

Example 3:

T: Turn to your partner and tell your partner the sound you hear at the beginning of harvest.

S: /hhh/

Open-ended questions, elaborations, extended recall, and predictions are techniques used in supportive talk. The following examples illustrate supportive talk.

Example 4:

T: Turn to your partner and tell your partner what you think Bear will do and why?

S: Mad. Because Hare keeps tricking him.

Example 5:

T: Buddy buzz with your partner and talk about someone you know or if you have ever planted a garden. Tell them about that.

S: Once I planted a lot of apples.

T: You planted apples? Apple seeds or an apple tree?

S: Apple tree. We dug a hole and put lots of water around it.

## **Fidelity**

To document teachers' fidelity to the curriculum, I videotaped the teachers four times during the intervention (once at the beginning and end of each week). The tapes were subsequently transcribed and coded to reflect the degree to which the teachers correctly implemented the key elements of the lessons. For each of the storybook read aloud lesson transcriptions, the teachers were rated on a scale of zero to three. A score of zero indicated that no components of the lesson were implemented; a score of one indicated that the teacher implemented one component; a score of two indicated that the teacher implemented two of the components; and a score of three indicated the teachers implemented all three components of the lesson (introduced the vocabulary prior to the reading, provided rich, explicit definitions within the lesson, and incorporated dialogic reading practices throughout the read aloud). A scale of zero to three was also used to rate the transcriptions of the concept sort lessons. A score of zero indicated that no components of the lesson were implemented; a score of one indicated that the teacher implemented one component; a score of two indicated that the teacher implemented two of the components; and a score of three indicated the teachers implemented all three components of the lesson (modeled the sort, provided guided practice, and provided independent practice). Two raters coded all transcripts. These ratings achieved acceptable levels of reliability. As shown in Figure 4, kappa is .901, indicating a high level of reliability. An average of the percentages for each of the transcripts was calculated to indicate fidelity. Analyses revealed that teachers in classrooms A and B implemented over 90% of the instructional components and the teacher in classroom C implemented 89% of the instructional components.

**Symmetric Measures**

		<b>Value</b>	<b>Asymp. Std. Error<sup>a</sup></b>	<b>Approx. T<sup>b</sup></b>	<b>Approx. Sig.</b>
Measure of Agreement	Kappa	.020	.164	.124	.901
N of Valid Cases		40			

a. Not assuming the null hypothesis.

b. Using the asymptotic standard error assuming the null hypothesis.

*Figure 4.*

## **Chapter 5**

### **Discussion**

#### **Vocabulary and Reading Development**

This study examined the relationship among a variety of vocabulary and emergent reading development using descriptive statistics and multiple regression analyses. The results of the emergent literacy measures assessed by the PALS-K subtasks indicated that children across the three classrooms correctly identified the majority of the alphabet letters. Results on the letter/sound knowledge, spelling, and concept of word measurements support the finding that there is relationship between children's growing understanding of the application of letter sounds and the ability to fingerprint read, matching the spoken word with the written word. Since the assessments were administered during the sixth month of the school year it is understandable that stronger scores were posted for alphabet knowledge than the three other emergent literacy measures. These results characterize the emergent stage of reading and spelling development.

#### **Concept of Word in Text**

One of the questions addressed in this study investigated the relationship among orthographic knowledge, alphabet knowledge, letter-sound knowledge, concept of word, Total Pretest score, and PPVT-IV with the learning of the targeted vocabulary. The correlation analyses conducted in the present study corroborate the findings of previous research demonstrating the complex interrelationships among emergent literacy skills and vocabulary knowledge with the learning of vocabulary (Bracken, 2005; Silven, Poskiparta, Niemi, & Voeten, 2007; Storch & Whitehurst, 2002). Alphabet knowledge, letter-sound knowledge, concept of word, and spelling knowledge are significantly interrelated indicating



important associations among these emergent literacy skills. As measured by the PPVT-IV, children's English receptive vocabularies significantly relate to letter-sound knowledge, concept of word in text, spelling, and vocabulary acquisition. Concept of word in text was significantly related with all of the other emergent variables and was found to be the most potent predictor for the learning of the targeted vocabulary.

A possible explanation for this finding would be Morris, Bloodgood, Lomax, and Perney's (2003) investigation of the interactive or reciprocal relationship between phoneme awareness and early reading skill. In this study, the researchers found that concept of word in text (ability for children to accurately fingerpoint to words as they read a sentence and identify target words within the sentence) mediates the ability to identify initial consonant sounds with the ability to segment sounds within a word. That is, beginning consonant knowledge preceded and facilitated the acquisition of concept of word and concept of word preceded and facilitated the ability to phonemically segment words. The successful acquisition of these skills leads to word recognition.

A further explanation is that concept of word in text may provide more unique variance and captures the language aspect of literacy development that the other emergent literacy skills did not capture. Development of concept of word requires the ability to segment the speech stream into individual words and then match each spoken word with its written counterpart. Concept of word in text relies on critical language and print related understandings (Invernizzi & Hayes, 2004; Morris, et al., 2003).

To further delineate the relationship between vocabulary development and concept of word, it is important to recognize that children who have larger vocabularies have more developed phonological sensitivity or have the ability to reflect on a range of speech sounds

(Burgess, 2006; Burgess & Lonigan, 1998; D.K. Dickinson, A. McCabe, L. Anastasopoulos, E.S. Peisner-Feinberg, & M.D. Poe, 2003; David K Dickinson, et al., 2003). The development of phoneme awareness or the ability to attend to individual speech sounds is a critical aspect of phonological sensitivity.

A leading explanation for the relationship between vocabulary size and phonological sensitivity is the lexical restructuring hypothesis (Garlock, Walley, & Metsala, 2001; Metsala, 1997). This hypothesis states that as children develop mental lexicons, they store words holistically based upon meaning. However, as children's vocabularies increase in size and an increasing demand is placed on retrieving words efficiently from long term memory, lexical representations are forced to become segmentally encoded (Metsala, 1997).

Gowsami (2001) explains that between the ages of 1 and 2 children experience a rapid growth in their spoken vocabulary. Although attempts at producing these newly acquired words may be phonetically inaccurate to begin with, children at this particular point in development experience huge gains in their vocabulary growth with many of the words sounding very similar to one another. Metsala (1997) refers to this as *neighbor density* (amount of similar sounding words). As vocabularies steadily increase in size, increased cognitive demands are placed on the brain to categorize words in high-density neighborhoods in such a way that allows them to be accurately and quickly identified. Efficient retrieval of these words then depends on the ability of the child to store them based on each word's sequence of sounds. According to Gowsami (2001) once words have been stored at the global level, children's phonological representations then begin at the syllable level because the syllable is considered to be the basic unit for English. Early in a child's development it

appears that restructuring begins according to the number of syllables in word then progresses to the onset and rime within each syllable.

Phonemic representations serve as the basis for supporting spoken word recognition through this lexical restructuring. Metsala (1997) explains:

The increasing shift from relatively holistic to more segmental processing is the result of lexical representations. The impetus for such restructuring is *growing* lexical knowledge-the increasing need to discriminate among many similar-sounding alternatives and the increased exposure of individual lexical items. (p. 52)

Thus phonological sensitivity is not as well developed in children with smaller vocabularies because the recognition of the spoken word has not yet needed to rely on phonemic representations to discriminate between similar sounding words. Emerging phonological awareness skills are then related to these developmental changes in lexical representations that occur as a result of increased vocabulary. Lexical restructuring lays the foundation for children to develop the phonological skills needed for their reading and orthographic development.

Since concept of word in text is dependent on initial consonant knowledge, and initial consonant knowledge is dependent upon phonological sensitivity and phonological sensitivity is related to larger vocabularies, the measure of concept of word appears to be a meaningful indicator of vocabulary knowledge.

In addition, the correlation scores showed that language status explained 29% of the variance in receptive vocabulary. However, learning English did not have a significant relationship to alphabet knowledge, letter-sound knowledge, concept-of-word, and spelling. These results provide additional evidence to support children's ability to develop code-

related skills (letter-sound knowledge, concept-of-word, and spelling) related to beginning reading development is not directly associated with English proficiency. Quiroga, Lemos-Britton, Mostogapour, Abbott and Berninger (2002) and Roberts (2005) assert it is articulation which mediates the relationship between vocabulary and phonemic awareness for children learning English. The results from the Roberts (2005) study indicated children's receptive vocabularies explained approximately 50% of the variance in the quality of English articulation and the quality of English articulation was found to have a significant influence on children's phonemic awareness and application of phonics knowledge.

It is also important to recognize that although children's receptive vocabularies were significantly related to the learning of the targeted vocabulary, children with lower receptive vocabularies did not score significantly differently on pretest, posttest, and delayed posttest measures than children with higher receptive vocabularies. These results should support the application of concept sorts for children learning English.

### **Efficacy of Storybook Read Alouds and Concept Sorts and Vocabulary Acquisition**

This study contributes to and extends existing literature about vocabulary instruction by investigating the effects of storybook read alouds and concept sorts with a group of children from diverse backgrounds. The findings from this study provide strong evidence that there was significantly more vocabulary learning for children who received storybook read alouds plus concept sorts than for the children in the group who received vocabulary instruction through storybook read alouds only. The results occurred after only two weeks of instruction and reflected a large effect size. It was hypothesized that children who received vocabulary instruction through concept sorts would acquire more vocabulary than children in

the storybook read aloud only condition. Posttest and delayed posttest measurements on the targeted vocabulary reflected this result.

The children in the storybook reading plus concept sorts condition performed significantly better on posttest and delayed posttest measures. The results of this study exceed the results reported in other experiments investigating vocabulary learning through storybook reading and direct instruction. Biemiller and Boote (2006) reported that at most children would only learn 40% of the words introduced through direct instruction and by listening to a storybook read aloud; and by engaging in dialogic reading techniques incidental word learning would account for a vocabulary gain of an additional 10%. Children who received vocabulary instruction through storybook read alouds and concept sorts learned 50% of the targeted vocabulary surpassing the expectations set by Biemiller and Boote. The overall level of targeted vocabulary growth in this study exceeded the rate of targeted vocabulary growth by at least twice the reported amounts found in previous vocabulary studies. Roberts (2008) reported a 25% increase, Silverman (2007a, 2007b) reported a 20% gain, and Beck and McKeown (2007b) reported a 20% increase in targeted vocabulary growth. Learning 20% of the targeted vocabulary, the vocabulary gains made by the children who received vocabulary instruction through the storybook read aloud only condition and engaging in dialogic reading techniques corroborates the findings of this previous research.

It is important to acknowledge that the opportunities to engage actively with word meanings and engage in dialogic reading techniques during shared reading were similar across the three classrooms. Each of the teachers provided opportunities for the children to engage in conversation, express their feelings, and elaborate on their ideas and reactions to the stories. In fact, students in the storybook read aloud only condition participated in slightly

more dialogic reading activities than the children in the storybook read aloud plus concept sorts treatment. Therefore, the children in the storybook reading only condition had more opportunities to use language that required higher-level cognition than the children in the storybook read aloud plus concept sorts treatment.

It also can be argued that children in the storybook read aloud plus concept sorts learned significantly more vocabulary because the children spent more time engaging with the vocabulary. This would also be considered one of the limitations of this study. However, I argue that it is the type of engagement (i.e. concept sorts) that led to the significant differences instead of the amount of time spent on the engagement.

Concept sorts incorporate mechanisms from other word learning principles to support vocabulary acquisition. Learning new vocabulary involves the recognition that distinct relationships occur between labels and objects and the events they represent. Facilitating this process is the habitual and redundant act of matching the spoken label to the visual object. Each concept sort activity consisted of the teachers engaging their students in naming, explaining, and sorting the vocabulary using taxonomical categories. Using this approach, the results indicate that the children were capable of learning 50% of the novel vocabulary. The children in the storybook read plus concept sorts treatment correctly identified the meaning of 5.02 of the targeted vocabulary at the time of the pretest and the delayed posttest measures indicated a mean gain of 10.74 of the targeted vocabulary words learned. Whereas, children in the storybook read aloud alone condition correctly identified the meaning of 4.55 of the targeted vocabulary at the time of the pretest, delayed posttest measures indicated a mean gain of 5.15 of the targeted vocabulary words learned.

In addition, the ten words selected for the targeted vocabulary during the first week of instruction are considered root words so it is reasonable to assume that if the children learned the meaning of harvest they also learned the word's inflected forms, harvests, harvested, and harvesting as well, learning four times the number of words.

One major concern for this study was whether using the same assessment measurement and the amount of testing constituted part of the treatment effect. Pretesting of the vocabulary was used to establish a baseline for the targeted vocabulary. This was followed by posttest and delayed posttest measurements. Biemiller and Boote (2006) hypothesized pretesting may sensitize children to the targeted vocabulary and therefore may prove to be a useful technique for facilitating vocabulary learning. Evidence from their study revealed that pretesting had no effect on vocabulary gains. If the repeated measures in this study would be considered part of the treatment effect, vocabulary gains would have to have been evenly distributed across the three classrooms. The use of the control classroom in this study significantly reduces the possibility that the repeated measures used in this study contributed to the treatment effect.

### **Instructional Implications**

Continued emphasis needs to be placed on the importance of fostering vocabulary growth for children from diverse backgrounds during the preschool and primary school years. This is a critical period for developing the literacy skills that are necessary for long-term academic success (Whitehurst & Lonigan, 2001). Vocabulary knowledge is an essential factor in successful reading development.

A variety of interventions have been developed to support vocabulary acquisition during the preschool and primary school years. The most researched and the most commonly

used practice is shared storybook reading that combines dialogic reading practices with explicit instruction. The shared reading component maximizes repeated exposures to the vocabulary increasing the likelihood of incidental word learning. The dialogic reading practices and explicit instruction provide opportunities for children to learn vocabulary using a variety of activities and to use the vocabulary in spoken discourse. Each of these components plays an important role in children's vocabulary growth. This approach has proved productive in learning targeted vocabulary for children from diverse language and economic backgrounds.

Findings from this study indicate that using concept sorts in the context of shared storybook reading made a significant contribution to the students learning of the targeted vocabulary. More importantly, this instructional method proved appropriate and effective for children learning English. Because of the strong relationship between vocabulary size and successful reading (Stanovich, 1986), the findings in this study support the recommendations that vocabulary research remain a priority in identifying instructional approaches that foster vocabulary development and influence vocabulary growth (Beck & McKeown, 2007a, 2007b; Biemiller, 2006; Biemiller & Boote, 2006; McKeown & Beck, 2006; Snow, et al., 1998).

Concept sorts provided teachers with an additional instructional tool to use to facilitate vocabulary learning and prevent further widening of vocabulary differences during the primary school years. Using concept sorts in conjunction with shared reading and explicit instructional activities, such as providing rich, student-friendly definitions, opportunities for children to think critically about the words and to engage children in language-rich discussions, and provide clear phonological and orthographic representations of the



vocabulary (Beck & McKeown, 2007b; Biemiller, 2006; Ehri, 2005; Ehri & Roberts, 2006; Silverman, 2007b) may allow teachers to match the most appropriate method to the needs of their students and to the learning goals and objectives of the lesson.

Since I created the materials used for concept sorts and because there are limited published materials in this area, the teachers would have to create their own materials if they chose to continue to use concept sorts as an instructional activity. If teachers are to be expected to be able to create and implement effective vocabulary instruction by aligning sound theoretical evidence with current beliefs and practices, a comprehensive professional model is needed. A strong professional development component would support teachers as they established their own criteria for selecting the most appropriate vocabulary, planning the instruction, and implementing the lessons.

A need for professional development was evidenced in the amount of basic talk used among the classrooms. Although the teacher in classroom C elicited the most supportive talk from her students, the questions most asked by each of the teachers required basic talk responses from the students. Wasik (2010) posited that on-going, job-embedded professional development is a critical component of effective vocabulary instruction which is often absent from vocabulary instructional intervention models. Schwanenflugel et al., (2005) reported that the preschool teachers abandoned all of the vocabulary instructional practices at the conclusion of their preschool study. A professional development model that emphasizes the conceptual and procedural aspects of vocabulary instruction would promote teacher agency and benefit children's vocabulary and literacy development (Wasik, et al., 2006).

### **Limitations and Future Research**

A limitation of this study is the short duration of the vocabulary intervention. Accordingly, analyses as to whether these results could be sustained over time and analyses using standardized receptive and productive vocabulary measurements are needed to assess the long-term efficacy of storybook read alouds plus concept sorts as a method for vocabulary development. This study demonstrated that students in the storybook read aloud plus concept sorts treatment learned significantly more of the targeted vocabulary than students in the storybook read aloud only condition. The results of this study did not provide evidence to suggest that storybook read aloud plus concept sorts was beneficial to children's overall vocabulary development or for children with possible language or learning disabilities. Because the students who scored 2 or more standard deviations below the norm on the PPVT-IV were excluded from the study, it is unclear whether this instructional method would be appropriate for children with language or learning disabilities.

An experimental research study that examines the differences in vocabulary learning using concept sorts with a method that produces comparable exposures to the targeted vocabulary is necessary to determine whether it is simply the exposures to the targeted vocabulary or the engagement with concept sorts that result in the learning of the targeted vocabulary. In addition, as this research was only conducted with kindergarten age children and in only three classrooms, this study cannot be described as a representative sample of early and primary grade school students. A larger sample size across a variety of grade levels is required to properly address this issue.

Although this study examined teacher fidelity through four-videotaped storybook read aloud lessons and four-videotaped concept sort lessons, this may not have captured the

qualitative differences in instruction among the teachers. More precise information about the quality of instruction would be gained from more frequent observations and would be necessary to examine all the factors that could influence performance on outcome measures.

Furthermore, the students' receptive vocabulary was measured using the PPVT-IV and was administered in English only. This limited the ability to obtain an accurate measurement of the abilities and achievement in oral language for the children learning English. Vocabulary measures in English learners' first language may add unique variance in accounting for vocabulary learning.

Conclusions are also limited by the types of words selected for instruction. The utility of concept sorts may be dependent on the type of words that are targeted. Further investigation is needed to determine whether certain words or concepts are learned easier through concept sorts or are more appropriate for concept sorts.

Another limitation of this research is that a quasi-experimental design was employed and may compromise the generalizability of the results. The lack of randomization threatens the internal validity of the research. Randomization allows for the extraneous factors that may influence the results to be equally distributed across experimental conditions increasing the likelihood that observed differences are attributed to the experimental treatments. Without random assignment, there is no way to guard against the confounding variables that may provide alternative explanations of the treatment effects.

## Glossary

Emergent literacy skills – Emergent literacy skills refer to alphabet knowledge, letter/sound knowledge, concept of word in text, and spelling development.

Oral language skills – Oral language skills refer to listening comprehension, phonological awareness, and vocabulary.

Vocabulary – Vocabulary refers to acquiring or learning the meanings of new words.

## Appendix A

### Storybook Reading Instructional Framework

Cooperative learning: Prior to storybook reading, arrange students in dyads. If there are an odd number of students, arrange one group as a triad.

**Think-Pair-Share (T-P-S)** – Students think of an answer individually, and then share their answer with their partner. Then, together they raise their hands to report to the whole class.

**Choral Response (CR)** – At your signal, all students chorally respond together.

#### Vocabulary

Lazy – if someone is lazy they do not want to work or make any effort to do anything.

Wealth – is having a large amount of money, property, or other valuable things

Plant – is a living thing that grows in the earth and has a stem

Harvest – is the gathering of a crop, such as corn, broccoli, and carrots

Clever – someone who is smart

Trick – is an action used to deceive someone

Yank – pull

Toss – throw

Pile – stack of things

Scoop – using your hands, arms, or a tool to lift and move something

Holler – to call loudly; scream

Scowl – to look mad or angry

#### Day One

Focusing Event: Display the front cover of the book. *Today we are going to read a story titled Tops and bottoms adapted and illustrated by Janet Stevens. This is a story about two characters, Bear and Hare.*

Vocabulary: plant, harvest, lazy, wealth, clever, trick.

- Introduce vocabulary using vocabulary cards.
- After reading each of the vocabulary words, have students repeat the vocabulary word. Explain the meaning of each word.

Prereading Strategies: Display the front cover of the book. *You may remember Hare from another story, The Tortoise and the Hare.* Guide students to answer in complete sentences.

- *What happened to the Hare in the story, The Tortoise and the Hare? (T-P-S)*
- *On the front cover of the book I see Hare holding an ear of corn with Bear sleeping upside down on a rocking chair. I also see other vegetables. I see broccoli (point out the vegetables on the cover), I see a carrot, some beets, and a radish.*
- Turn to the cover page and name and point to the vegetables on that page.
- *I wonder why the title of the story is called Tops and Bottoms.*

- *Why do you think the title of the story is Tops and Bottoms. (T-P-S)*

During Reading Strategies:

- Read page 1. As you read the word wealth, explain that wealth means money and property.
- After reading page 1, explain lazy means not wanting to work or make any effort to do anything, ask, *How can you tell from the picture that bear is a lazy bear? (T-P-S)*
- Read page 2. As you read the word clever, explain that clever means smart.
- Read page 5. *Hare's plan is to be a business partner with Bear. Hare says that he will do the hard work of planting and harvesting. Planting means putting a seed into the ground so that it will grow. Harvesting means picking and gathering what was planted. Why do you think Hare agrees to do all of the planting and harvesting?(T-P-S)*
- *We hear Hare asking Bear if he wants the tops or the bottoms, which is the title of the story, what do you think Hare means by the tops or the bottoms?(T-P-S)*
- Read pages 6 – 11.
- *Hare woke Bear up for the Harvest. How did Hare and his family harvest the vegetables? (T-P-S)* Acknowledge that harvesting means to dig up the carrots, the radishes, and the beets.
- *What did Hare do with the tops? (T-P-S) What did Hare do with the bottoms? (T-P-S)*
- Read pages 12 – 13. *Why does Bear want the bottoms? (T-P-S)*
- Read pages 14 – 19. *What do you think Bear is going to do when Hare wakes him up? (T-P-S)*
- Read page 20. *How do you think Hare will trick Bear this time? (T-P-S)*
- Read pages 23 – 27. *How did Hare trick Bear? (T-P-S) What do you think Bear will do? (T-P-S)*
- Read pages 28 – 31.

After Reading Strategies:

- *Why is the title of the story Tops and Bottoms? (T-P-S)*
- *What was your favorite part of the story? (T-P-S)*

## Day Two

Focusing Event:

- *Using thumbs up, thumbs down show me if you enjoyed listening to the story Tops and Bottoms.*

Vocabulary: plant, harvest, lazy, wealth, clever, trick.

- Introduce vocabulary using vocabulary cards. As you introduce the vocabulary words, say each word with you and have the students chorally spell each word with you. Review the meanings of each word.

Prereading Strategy:

- *Bear is described in this story as lazy. What does lazy mean? (T-P-S)*

- *In the story, Bear's father gave all of his wealth to Bear. What does wealth mean? (T-P-S)*
- *Hare was clever in the way he tricked Bear. What does clever mean? (T-P-S)*
- *How does Hare trick Bear? (T-P-S) What does trick mean? (T-P-S)*

During Reading Strategy:

- *Read pages 1 – 5. Show me how to plant. (CR) Show me how to harvest. (CR)*
- *How does Hare trick Bear the first time? (T-P-S)*
- *What does Bear tell Hare when he finds out he has been tricked? (CR)*
- *Read pages 6 – 13. What does Bear tell Hare when he finds out he has been tricked? (CR)*
- *Read pages 14 – 20. What does Bear tell Hare this time when he finds out he has been tricked? (CR)*
- *Read pages 20 – 29. What does Bear tell Hare when he finds out he has been tricked again? (CR)*
- *Read pages 30 – 31.*

After Reading Strategy:

- *How do you feel about Bear? (CR) ? (T-P-S)*
- *How did Hare trick Bear the first time? (T-P-S)*
- *How did Hare trick Bear the second time? (T-P-S)*
- *How did Hare trick Bear the third time? (T-P-S)*
- *How do you feel about what happened to Hare and his family at the end of the story? (T-P-S)*

### Day Three

Vocabulary: yank, toss, pile, scoop, holler, scowl.

- Review previous vocabulary. Display each vocabulary card have students chorally say the name of each picture.
- Introduce vocabulary using vocabulary cards.
- After reading each of the vocabulary words, have students repeat the vocabulary word. Explain the meaning of each word.

Focusing Event: *Today we are going to complete a story map. A story map will help us identify key elements that make up a story: characters, setting, problem, events, and solution.*

Prereading Strategy:

- *Who are the main characters in the story? (T-P-S)*
- *Where is the setting? This means where does the story take place? (T-P-S)*
- *What is Hare's problem? (T-P-S)*
- *What is Hare's solution? (T-P-S)*

During Reading Strategies (Encourage students to read favorite parts with you)

- *Read page 1. How is Bear different from his father? (T-P-S)*

- Read pages 2 – 5. As you read page 5, chorally read Hare’s business idea with your students. *“We can be business partners! All we need is this field right here in front of your house. I’ll do the hard work of planting and harvesting, and we can split the profit right down the middle. Yes, sir, Bear, we’re in this together. I’ll work and you sleep.”*
- Read pages 6 – 11. *What kinds of vegetables did Hare and his family plant and harvest? (T-P-S)*
- *When Hare and his family harvested the carrots, radishes, and beets they plucked off the tops and tossed them into a pile for Bear. Let’s act that out. (CR)*
- Read pages 12 – 18. *This time let’s act out tossing the bottoms into a pile. (CR)*
- Read pages 19 – 20. *It says that Bear scowled at Hare and said, “Hare, you have cheated me again.” Scowl means to look mad or angry and someone. Let’s scowl and say what Bear said together. (CR)*
- Read pages 21 – 27. *On this page it says that Hare and his family yanked up every cornstalk. Yank means to pull hard. Let’s pretend to yank up cornstalk. (CR) What does yank mean? (CR)*
- Read pages 28 – 29. *Bear hollered at Hare. That means he screamed at Bear loudly. He hollered, “That’s it, Hare!” Let’s pretend to holler at Bear. (CR)*
- Read pages 30-31.

#### After Reading Strategies

- *We are going to finish the story events and the ending sections of our story map.*
- *How did Hare trick Bear the first time? (T-P-S)*
- *How did Hare trick Bear the second time? (T-P-S)*
- *How did Hare trick Bear the third time? (T-P-S)*
- *Is it right for Hare to trick Bear? Explain why or why not.(T-P-S)*

#### Day Four

Vocabulary: yank, toss, pile, scoop, holler, scowl.

- Review previous vocabulary. Display each vocabulary card have students chorally say the name of each picture.
- Introduce vocabulary using vocabulary cards. As you introduce the vocabulary words, say each word with you and have the students chorally spell each word with you. Review the meanings of each word.

Focusing Event: *Today as I read the story, I want you to read as much of the story as you can with me.*

Prereading strategies:

- *Yesterday, we completed a story map. I want you to use the story map and retell the story with your partner. (T-P-S)*

During Reading Strategies:

- Read pages 1 – 11.
- *What does lazy look? (CR)*



- *Show me how Hare and his family planted and harvested the carrots, beats, and radishes. (CR)*
- Read pages 12 – 18.
- *Show me how Hare and his family planted and harvested the lettuce, broccoli, and celery. (CR)*
- Read pages 19 – 27.
- *Show me how Hare and his family planted and harvested the corn. (CR)*
- Read pages 28 – 31.

After Reading Strategies:

- *What was your favorite part of the story? Why? (T-P-S)*
- *Would you change the story? Why? If you would, how would you change it? (T-P-S)*
- *What did you think about the illustrations in this story? (T-P-S)*
- *Let's review some of the vocabulary. Show me how we would toss something into a pile. (CR)*
- *Show me a scowl. (CR)*
- *Show me how you would yank of the tops or bottoms of a plant. (CR)*
- *What does holler mean? (T-P-S) When is a time that you have hollered at someone, or someone has hollered at you? (T-P-S)*
- *Show me what it looks like to scoop something up. (CR)*

## Appendix B

### Concept Sort Standards and Indicators

*Nevada English Language Arts and Science Content Standards and Indicators:*

Content Standard 1.0 Students know and use word analysis skills and strategies to comprehend new words encountered in text and to develop vocabulary.

1.K.4 Students comprehend vocabulary using pictures, symbols, and environmental print.

Content Standard 7.0 Students listen to and evaluate oral communication for content, style, speaker's purpose, and audience appropriateness.

7.K.1 Students listen for a variety of purposes including gaining information, being entertained, and understanding directions.

Content Standard L.2.D Students understand that there are many kinds of living things on Earth.

L.2.D.1 Students know plants and animals can be sorted by observable characteristics and traits.

*Vocabulary:* harvest, plant (two meanings: a living thing that grows in the earth and has a stem, leaves, and roots; when you put a seed, plant, or tree into the ground so that it will grow), lazy, wealth, clever, trick, yank, toss, pile, scoop, holler, scowl, roots, stem, leaves, flower, corn, broccoli, carrot, cauliflower, peas, spinach, lettuce, radish, beets, celery, cabbage, radish

## Concept Sort Instructional Framework

**Day One**

Objectives: I can sort pictures of things that you plant and things that you harvest.

Focusing Event: Connect the picture sort to *Tops and bottoms*.

- *Hare planted and harvested a lot of vegetables in the story *Tops and Bottoms*. What vegetables have you eaten before (T-P-S)*
- *When we plant a vegetable, we put a seed in the ground. We harvest a vegetable when it has grown and is ready to eat.*
- Read objective

Teacher Modeling:

- Introduce guide pictures. *This is a picture of a plant being planted. This is a picture of something being harvested. We are going to place things that are planted under the picture of the plant being planted. We are going to place things that are harvested under the picture of being harvested.*
- *Before we begin sorting, we are going the name the pictures together and then you are going to say the name of the pictures to your partner.*
- Chorally say the picture names. Listen as they tell their partners the picture names. Note vegetable names students have difficulty saying or remembering. Praise students for following directions.
- Model the sort by selecting approximately two or three pictures, and as you place a picture under a certain category explain why you are placing it there.

Guided Practice:

- Have each student select a picture to sort. Remind the students that as they sort they have to provide an explanation.
- After students complete their sort, ask them to share and explain their sort to their partner.

Independent Practice:

- Have the students complete the rest of the sort as you observe during small group instruction. Note: Students will also complete this same sort when they return to their seats. The students will glue their sort on a paper

Closure:

- Ask students to share a vegetable they have never eaten before.

## Day Two

### Objectives:

- I can sort pictures between lazy and wealth.

### Focusing Event:

- *We learned that lazy means not willing to do work and we learned that wealth means to have a lot of money or property. Property means things like big houses and a lot of land. Today we are going to sort between pictures that show someone who is lazy and between pictures that show wealth.*
- Read objective

### Teacher Modeling:

- Introduce guide pictures lazy and wealth.
- Chorally say the picture names.
- Listen as they tell their partners the picture names. Praise students for following directions.
- Select two or three pictures and model the sort.

### Guided Practice:

- Select a picture of vegetable.
- Ask your students to name the picture. Have your students signal using thumbs up or thumbs down to indicate whether the picture belongs in that particular category. This activity provides a quick formative assessment.
- Model this procedure by naming the picture and each category to your students. After you name the picture and each category, then cue your students by saying, *Now, 1, 2, 3, show me. Thumbs up or Thumbs Down?*
- Continue this procedure with two or three more pictures.
- Have students complete this sort as you observe during small group.

### Collaborative Practice:

- After students complete the sort during small group instruction, ask them to share and explain their sort to their partner.

### Independent Practice:

- Students will also complete this same sort when they return to their seats. At their seats, students will glue their sort on a paper.

### Closure:

- Before students return to their seat, ask each student to pick a picture they sorted and have them describe the picture using the vocabulary.

### Day Three

#### Objectives:

- I can sort pictures between pile and scoop.

#### Focusing Event:

- *We learned that pile means a stack of things and scoop means use your hands and arms to move something from one place to another. Today we are going to sort between pictures that show a pile of things and pictures that show scooping.*
- Read objective.

#### Teacher Modeling:

- Introduce guide pictures pile and scoop.
- Chorally say the picture names.
- Listen as they tell their partners the picture names. Praise students for following directions.
- Select two or three pictures and model the sort.

#### Guided Practice:

- Select a picture. Compare the picture with each category.
- Have your students signal using thumbs up or thumbs down to indicate whether the picture belongs in that particular category.
- Model this procedure by naming the picture and each category to your students. After you name the picture and each category, then cue your students by saying, *Now, 1, 2, 3, show me. Thumbs up or Thumbs Down?*
- Continue this procedure with two or three more pictures.
- Have students complete this sort as you observe during small group.

#### Collaborative Practice:

- After students complete the sort during small group instruction, ask them to share and explain their sort to their partner.

#### Independent Practice:

- Students will also complete this same sort when they return to their seats. At their seats, students will glue their sort on a paper.

#### Closure:

- Before students return to their seat, ask each student to pick a picture they sorted and have them describe the picture using the vocabulary.

## Day Four

### Objectives:

- I can sort pictures between holler and scowl.

### Focusing Event:

- *We learned that holler means not to scream loudly and scowl means to look angry. Today we are going to sort between pictures that show someone hollering or someone that has a scowl on their face.*

### Teacher Modeling:

- Introduce guide pictures holler and scowl.
- Chorally say the picture names.
- Listen as they tell their partners the picture names. Praise students for following directions.
- Select two or three pictures and model the sort.

### Guided Practice:

- Select a picture.
- Ask students to describe the picture. Have your students signal using thumbs up or thumbs down to indicate whether the picture belongs in that particular category.
- Model this procedure by naming the picture and each category to your students. After you name the picture and each category, then cue your students by saying, *Now, 1, 2, 3, show me. Thumbs up or Thumbs Down?*
- Continue this procedure with two or three more pictures.
- Have students complete this sort as you observe during small group.

### Collaborative Practice:

- After students complete the sort during small group instruction, ask them to share and explain their sort to their partner.

### Independent Practice:

- Students will also complete this same sort when they return to their seats. At their seats, students will glue their sort on a paper.

### Closure:

- Before students return to their seat, ask each student to pick a picture they sorted and have then describe the picture using the vocabulary.

**Day Five**

## Objectives:

- I can sort pictures between yank and toss.

## Focusing Event:

- *We learned that yank means to pull hard and toss means to throw lightly. Today we are going to sort between pictures that show someone yanking or someone tossing.*

## Teacher Modeling:

- Introduce guide pictures yank and toss.
- Chorally say the picture names.
- Listen as they tell their partners the picture names. Praise students for following directions.
- Select two or three pictures and model the sort.

## Guided Practice:

- Select a picture.
- Ask students to describe the picture. Have your students signal using thumbs up or thumbs down to indicate whether the picture belongs in that particular category.
- Model this procedure by naming the picture and each category to your students. After you name the picture and each category, then cue your students by saying, *Now, 1, 2, 3, show me. Thumbs up or Thumbs Down?*
- Continue this procedure with two or three more pictures.
- Have students complete this sort as you observe during small group.

## Collaborative Practice:

- After students complete the sort during small group instruction, ask them to share and explain their sort to their partner.

## Independent Practice:

- Students will also complete this same sort when they return to their seats. At their seats, students will glue their sort on a paper.

## Closure:

- Before students return to their seat, ask each student to pick a picture they sorted and have then describe the picture using the vocabulary.

## Days Six and Seven

*Objectives:* I can name pictures of vegetables.

I can sort vegetables by identifying the part of the plant we eat.

Focusing Event:

- Connect the picture sort to *Plants on my Plate* and *The Vegetable Garden*. Tell the students, *We read about the parts of the plants today and we learned that plants grow from seeds and have roots, stems, leaves, and flowers. We also learned about which part of the plant certain vegetables are.*
- *How many of you knew when we eat peas, we are eating the seeds of the plant?*
- *Today we are going to sort pictures of vegetables by plant part.*
- Read the learning objectives to your students.

Teacher Modeling:

- Introduce guide pictures. *This is a picture of seeds. We are going to put the vegetables that are seeds under this picture. This is a picture of the roots of a plant. We are going to put the vegetables that are roots under this picture. This is a picture of the stem. We are going to put the vegetables that are stems under this picture. This is a picture of the leaves of a plant. We are going to put vegetables that are leaves under this picture. This is the flower part of the plant. We are going to put vegetables that are the flower of the plant here.*
- Chorally say the picture names. Listen as they tell their partners the picture names. Note vegetable names students have difficulty saying or remembering. Praise students for following directions.
- Model the sort by selecting approximately four or five pictures and as you place the vegetable under a certain category explain why you are placing the vegetable there.

Guided Practice:

- Have each student select a picture to sort. Remind the students that as they sort they have to provide an explanation.
- Have students complete the rest of the sort as you observe during small group instruction.

Collaborative Practice:

- After students complete the sort during small group instruction, ask them to share and explain their sort to their partner.

Independent Practice:

- Students will also complete this same sort when they return to their seats. The students will glue their sort on a paper and ask them to circle their three most favorite vegetables.

Closure:

- Before students return to their seats, ask each student to share one thing they learned about plants and vegetables today.



## Days Eight and Nine

### Objectives:

- I can name pictures of vegetables.
- I can sort vegetables between foods that are vegetables and foods that are not vegetables and explain why.
- 

### Focusing Event:

- Connect the picture sort to the stories *Plants on my Plate* and *The Vegetable Garden* similar to the previous lesson.
- *Yesterday we sorted pictures of vegetables by the plant parts we eat. Today we are going to sort different pictures of food as vegetables and non-vegetables and explain why the picture is or is not a vegetable.*
- Read the learning objectives to your students.

### Teacher Modeling:

- Introduce guide pictures. *This is a picture of broccoli; broccoli is a vegetable because it is the flower of the plant. The broccoli is going to represent the vegetable category. This is a picture of a hamburger. A hamburger is not a part of plant, so the picture of the hamburger is going to represent the non-vegetable category.*
- Chorally say the picture names.
- Listen as they tell their partners the picture names. Note vegetable names students have difficulty saying or remembering. Praise students for following directions.
- Select two or three pictures and model the sort.

### Guided Practice:

- Select a picture of a vegetable. Ask your students to name the picture. Have your students signal which category the picture of food belongs by having them place one finger on their chin if the picture of the food is a vegetable, or two fingers if the picture of the food is not a vegetable.
- Model this procedure by placing the appropriate fingers on your chin as you ask your students. For example, *This is a picture of ice-cream. Say ice-cream with me. Is ice-cream a vegetable or not a vegetable? As you ask this question, model by placing one finger on your chin as you ask the question. Is ice-cream a vegetable? Place two fingers on your chin as you ask the rest of the question, Or not a vegetable? When you have finished asking the questions say, Now, 1, 2, 3, show me.*
- Continue this procedure with three or four more pictures.
- Have the students complete this sort as you observe during small group instruction.

### Collaborative Practice:

- After students complete the sort during small group instruction, ask them to share and explain their sort to their partner.

### Independent Practice:

- Students will complete this same sort when they return to their seats. The students will glue their sort on a paper and before they go back to their seats ask them to circle their three least favorite vegetables.

Closure:

- Before students return to their desk, ask students to share a food item that is a vegetable or not a vegetable and explain why.

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