2006

THE ROLE OF BOOK TYPE IN THE RETENTION OF NOVEL VOCABULARY AMONG CHILDREN AFRICAN AMERICAN CHILDREN WITH VOCABULARY DEFICITS

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ABSTRACT OF DISSERTATION

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A dissertation submitted in partial fulfillment of the requirements
for the degree of Doctor of Philosophy in the College of Health Sciences
at the University of Kentucky

By
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Jonesboro, Arkansas

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Lexington, Kentucky

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Research has shown that cultural differences and the lack of experiences in the lives of young children can affect the rate of vocabulary development. In particular, children from different ability, socioeconomic status, and culturally and linguistically diverse groups are considered at risk for later academic achievement because their home experiences and word usage may be incongruent with that of the mainstream school cultural environment. Therefore, it has been suggested that to decrease the gap between children in need of vocabulary development and their typically achieving peers, instruction in vocabulary should systematically provide information about words and their uses. Thus, the purpose of this study was to examine the effect of a systematic vocabulary instructional technique in children with clinically depressed vocabulary skills. An additional goal was to examine the role of book type in the retention of novel vocabulary words among young African American children.

Using an Adapted Alternating Treatments Design, five children were read two storybooks in the context of robust vocabulary training. Storybooks were used as a source for contextualizing novel vocabulary words. One book depicted an African American theme and images and the other depicted a Caucasian theme and images. Robust vocabulary instruction consisted of frequent and varied opportunities for word usage in meaningful contexts that stressed the relations between target words and previously acquired vocabulary. Children's productive definitions were used to assess developing word knowledge at 4 periodic probes. Definitions were scored using a 4-stage continuum ranging from no knowledge to full concept knowledge.

Results showed significant gains in word learning for novel words two weeks following conclusion of the study. The difference in scores between the instructional and control word sets resulted in a large effect size attributable to robust vocabulary instruction. African American children appeared to learn words at a deeper level from a storybook that displayed sociocultural images and experiences different from their own.

Sherri Lovelace

April 28, 2006

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CHAPTER I
INTRODUCTION

Vocabulary comprises all the words a person "knows", both those that can be understood and used appropriately. It is constantly changing and continues to develop throughout life, growing with each new experience. With increasing age and development, individuals become more dependent on using words to learn, share, and create knowledge of the world. Consequently, the words we use and know are an integration of our experiences and world knowledge. Vocabulary is an important part of language, reading, and ultimate school success (Jenkins, Stein, & Wysocki, 1984; Penno, Wilkinson, & Moore, 2002). Unfortunately, cultural differences and lack of richness in the daily experiences of young children can affect the rate of vocabulary development (Hart & Risley, 1995) and subsequent growth during the school years.

Research suggests that there are significant differences in vocabulary knowledge among children from different abilities, socioeconomic status (SES) and culturally and linguistically diverse (CLD) groups (Graves, Brunetti, & Slater, 1982; Hart & Risley, 1995). Despite normal conceptual or intellectual functioning, children from each of these groups simply may not have experiences upon which mainstream classroom perception and expectations are based (Hart & Risley, 1995; Stockman, 2000). Unfortunately, these differences tend to remain throughout the school years without intervention. However, if one agrees with Carroll (1971) that "one of the primary tasks of the school . . . is to teach vocabulary", then educators have been challenged to bridge the gap between children's home knowledge and experiences and the mainstream cultural knowledge needed for academic success. Thus, taking on the task of providing effective vocabulary instruction utilizing relevant cultural tools is a high priority.

Instructional methods for teaching vocabulary are varied. Conventional wisdom suggests that the major means for developing vocabulary is wide reading or learning words from context (Nagy, Anderson, & Herman, 1987; Nagy, Herman, & Anderson, 1985). However, for word learning to occur from reading, one must read widely enough to encounter new words and one must have the skills to infer word meaning from contexts. The problem is that many students in need of vocabulary development do not typically read the kinds of books that contain diverse vocabulary words and these students are usually less able to gain meaningful information from

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the context (Kucan & Beck, 1996; McKeown, 1985). Therefore, it has been suggested that instruction in vocabulary should provide rich information about words and their uses, with multiple opportunities for learners to think about and use words (Beck, McKeown, & Kucan, 2002). This type of rich vocabulary training, known as *robust vocabulary instruction*, has been found to be not only effective for learning the meanings of words but also for affecting reading comprehension (McKeown, Beck, Omanson, & Perfetti, 1983; McKeown, Beck, Omanson, & Pople, 1985).

Because acquisition of much of the vocabulary that is characteristic of mature language users occurs during the school years, utilizing literacy materials that reflect students' unique heritage and cultural experiences has been suggested as a means to bridge the gap between the home and school cultures of CLD children (Bennett, 2003; Valdez, 1999). One such source of materials is multicultural literature. Children's literature is a central element in American education and a prominent method used to instill children with specific cultural values (Farris & Fuhler, 1994). Other than television, it is perhaps, the singular medium in which children discover the world and negotiate and affirm their place in it. For children from CLD backgrounds, a dilemma arises when the literature used in schools does not help students experience themselves as citizens of a diverse world (Singer & Smith, 2003). Therefore, educators have been challenged to include in their curriculum, literacy materials that reflect the variety of students' lived experiences and backgrounds (Bennett, 2003; Gay, 2000). Gay (2000) suggests that the relevance of utilizing multicultural literature that allows children to make "explicit connections between instructional resources used in classrooms and lived experiences . . .outside of school improves the mastery of academic skills as well as other dimensions of learning such as interest, motivation, and time-on-task" (p.118).

While the research literature suggests that use of multicultural literacy materials that is reflective of children's background is needed to improve academic performance of CLD students, to date, much of the research has been limited to discussions of its effects on performance in reading, writing, math, and science. Although vocabulary development is not an academic subject like those cited, vocabulary pervades each subject and therefore requires investigation into how it can be developed in diverse learners. Thus, the purpose of the present inquiry was to examine the role of book type in the acquisition and retention of vocabulary in young African American children. Two specific aims are defined for this investigation. The

first aim was to determine if children with vocabulary deficits can learn new words when provided with robust vocabulary instruction. The second aim of this investigation is to determine if young African American children will acquire and retain vocabulary words at similar rates from two comparable storybooks, except in depiction of African American and Caucasian images. It was hypothesized that given an empirically sound method of vocabulary instruction, African American children will retain more vocabulary from books which depict images and experiences similar to their cultural background.

Definition of Terms

1. *Robust vocabulary instruction* – rich instruction that is vigorous, strong, and powerful in effect. It entails the direct explanation of word meanings along with thought-provoking, playful, and interactive follow-up (Beck, McKeown, & Kucan, 2002).

2. *Multicultural literature* – literature by and about people of color, religious minorities, regional cultures, the disabled, and the aged who are considered to be outside the socio-political mainstream of the United States (Harris, 1993; Singer & Smith, 2003).

CHAPTER II
REVIEW OF THE LITERATURE

Vocabulary Knowledge: What It Means to Know A Word.

While what it means to know a word has been of some debate, vocabulary researchers generally agree that knowing a word's meaning involves knowing the concept underlying the word (Chall, 1987). Given that concepts are embedded in larger domains of knowledge, McKeown and Beck (1985) suggested that "word knowledge is not an all-or-nothing proposition [and] words may be known at different levels" (p. 42).   Nagy and Scott (2000) agree, noting that different aspects of words and their meanings affect the complexity of word knowledge. They posit that five aspects in particular are related to the issue of how one comes to know the various concepts related to words. The first is incrementality - that knowing a word is a matter of degrees. They suggest that word learning takes place in many steps and that children's knowledge of word meanings gradually approximates the adult understanding over time. The second is that we understand words through qualitatively different types of knowledge (i.e., multidimensionality). They suggest that word knowledge consists of multiple dimensions which are partially independent. For example, a student might use a word in a seemingly appropriate way in a sentence, yet not be able to define it. The third is polysemy – that words have multiple meanings and are inherently flexible. They suggest that the fact that a word can have more than one unrelated meaning (e.g., *pinch* meaning a sharp squeeze and *pinch* meaning a time of need) adds to the complexity of word knowledge. The fourth aspect is interrelatedness - we learn words in relation to our knowledge of other words. Nagy and Scott suggest that one's knowledge of any given word is not independent of one's knowledge of other words. They posit that novel words are learned by linking them to familiar words and concepts. The fifth aspect is heterogeneity. That is, what it means to know a word differs substantially depending on the kind of word one is talking about (e.g., function words vs. content words).

Because these different degrees of understanding exist, word knowledge can be best represented on a continuum ranging from little or no understanding of a word's meaning to full understanding. Numerous authors have used the terms corresponding to *minimal*, *partial*, and *full* knowledge to describe qualitatively different levels of word knowledge (Bauman & Kameenui, 1991; Beck & McKeown, 1991; Graves, 1986). Stahl (1985; 1986) suggested an

intuitive scale consisting of three successively deeper levels of processing word meanings during reading: association, comprehension, and generation. Kameenui and colleagues (1987) also proposed three continuous levels of word knowledge: full concept knowledge, partial concept knowledge, and verbal association knowledge. However, Dale (1965) offered a description of the extent of word knowledge in terms of four stages:

- Stage 1: Never heard the word.
- Stage 2: Heard it, but doesn't know what it means.
- Stage 3: Recognizes it in context as having something to do with ___.
- Stage 4: Knows it well.

In Stage 1, an individual has no knowledge of a word as demonstrated by the incorrect use of the word in a sentence or some other indication that it is unknown (e.g., _Ripped_ means good). In Stage 2, an individual demonstrates only a general sense of the word and can typically use it correctly in a sentence, but cannot define it (e.g., I _ripped_ my dress). In Stage 3, one has a partial concept knowledge that may be bound to a specific context. Specifically, an individual may be able to use the word in a limited number of ways and may have difficulty discriminating a word's meaning from the meanings of similar words. For example, one may be able to define _ripped_ as a piece of paper that is torn, but not be able to discern the subtle difference between paper that is _ripped_ (i.e., torn or pulled apart) and paper that has been _cut_ (i.e., divided with something sharp). Finally, people with well developed vocabulary knowledge possess rich, interconnecting networks of concepts with words to label that knowledge (Mason, Stahl, Au, & Herman, 2003). They exhibit full concept knowledge of words by demonstration of their use in novel instances. In this stage, (i.e., Stage 4), one knows the varied meanings of a word and its relationship to other words. For example, one would know the word _rip_ as a verb (i.e., to tear or pull apart) and as a noun (i.e., a torn place; a _rip_ in your jeans).

Dale's description of word knowledge is preferable because it allows one to determine whether children possess an understanding of the concept itself (i.e., definitional knowledge), and/or their understanding of how that concept fits with related groups of words (i.e., contextual knowledge). Nagy and Scott (2000) appear to agree in stating that "knowing a word means being able to do things with it" (p.273) in addition to knowing the definition. The "things" that one should be able to do with a word include the following: (a) being able to recognize it in speech or print, (b) access its meaning, (c) pronounce it – and to be able to do these things

relatively quickly. Thus, a person who knows a word can recognize it, use it in novel contexts, and use knowledge of the word in combination with other types of knowledge to construct its meaning.

The present investigation into the role of book type in the acquisition of vocabulary among diverse children is best considered within the context of the connection of vocabulary development to literacy achievement. Within this context, the theoretical framework for acquiring word knowledge, cultural and linguistic differences that affect its development, and the various kinds of instruction that facilitate word learning will be reviewed. These topics, in addition to the use of multicultural literature for improving motivation, interest, and academic achievement of culturally and linguistically diverse (CLD) learners will be explored in the following sections.

Theoretical Framework

Acquiring vocabulary is a process of learning from experience (Hoff & Naigles, 2002). Because experiences with and knowledge of objects, situations, events, and processes are always culturally based (Kucer, 2005), word learning is best described as both a social and a cultural process. Sociocultural theory emphasizes the social context and importance of interactions with other people and artifacts in the accomplishments of individual learners (Cook-Gumperz & Corsaro, 1977; McLaughlin & McLeod, 1996). As such, early home experiences provide a variety of contexts in which children's lives are permeated and influenced by their culture (Ferdman, 1990) which predisposes them to unique ways of thinking and interacting. As practices are organized by the culture in which a developing child lives, participation in these activities with the guidance of more skilled partners, enables children to internalize the tools for thinking and for taking more mature approaches to problem solving that are respective of their cultural membership (Hatano & Wertsch, 2001; McLaughlin & McLeod, 1996).

Because people learn to perform cognitive tasks in culturally specific contexts, the context comes to provide cues for activating use of particular cognitive skills (Allen & Boykin, 1992). Thus, it can be reasoned that cultural experiences provide people with a foundation for the development of vocabulary. An individual's performance on vocabulary tasks will be either facilitated or hindered depending upon the match between the conditions for learning and the learner's sociocultural experiences. Socioculturalists agree that experiences, which occur in the microculture (i.e., home environment) not only affect larger contexts (i.e., school learning), but

are also affected by them (Hatano & Wertsch, 2001). Thus, the cultural milieu may place limits on context-specific behaviors and ways of understanding for diverse learners that are typical in mainstream, school cultural systems.

Sociocultural Differences and Their Effects on Vocabulary Knowledge

Knowledge of words is a subset of, and highly correlated with, general world knowledge (Anderson, R. C. & Freebody, 1983; Nagy & Herman, 1987b). General world knowledge is a by-product of experience (Krashen, 1992), which is correlated with early sociocultural influences. Because early word learning is highly subject to frequency of input, children growing up in different conditions of input will develop vocabularies that differ (deVilliers, 2004). The consequence is that children from socially, culturally, and linguistically diverse backgrounds often struggle in mainstream school settings, because their culture gives them exposure not only to different vocabulary, but to a different emphasis on which words are central to their lived experiences, behaviors, and ways of understanding. The research has shown that when children are not exposed to words outside of their usual sociocultural experience, the lack of familiarity with varied words and their uses is often related to socioeconomic disparity, ethnicity, and linguistic variation.   In the following paragraphs, these variables will be examined with reference to their relation to vocabulary development for CLD children in general and for African American children in particular.

Socioeconomic status and experience. Much of the oral language acquired in early childhood is learned through an inferential process. That is, knowing a certain percentage of words allows an individual to understand the main idea of what is being said while guessing what unfamiliar words probably mean, based on context. The quantity and quality of early experiences with diverse contexts of language use have been shown to affect children's development of vocabulary (Hall, Nagy, & Linn, 1984; Hart & Risley, 1995; Hoff, 2003). The research demonstrates that children from low socioeconomic status (SES) backgrounds are often limited in experiences needed to build background knowledge for vocabulary growth (Heath, 1982, 1989; Kagan & Garcia, 1991). While individuals from low-SES backgrounds are a very heterogeneous group and do not all have the same values or lifestyles, individual choices and experiences provided to these children overall are more limited than for groups with greater economic resources. Because experiences are limited, the potential for gaining word knowledge

from familiarity with a variety of opportunities is predictably reduced for disadvantaged children.

To demonstrate, Hall, Nagy, and Linn (1984) analyzed five hours of audio-tapes of middle and working-class parents talking to their preschool children. Their results showed that middle-class adults averaged 2, 383 words per hour while talking to their children, whereas, the working-class adults averaged 1, 840 words per hour. Children of middle-class parents averaged 1, 713 words per hour while children of working-class parents averaged 1,455 words per hour. Similar results were found by Hart and Risley (1995) in a longitudinal study of the differences among children from low-income, working class, and professional homes. They reported that by age 3, the spoken vocabularies of children from professional families were much larger than those from families receiving welfare. Like Hall and colleagues (1984), these researchers noted that differences in the amounts of experience with language used to convey information were the primary characteristics differentiating income groups and subsequent child outcomes. Children in families of higher SES consistently received three times more experience with language and interaction than the children in families receiving welfare. In Hart and Risley's study, the vocabulary that parents used with their children was identified as a quality feature of language that differentiated the groups. The authors noted that the different words parents used reflected the variety of experiences they provided their children. They also found that parents attended most to aspects of those experiences, which they considered important. This implies that words children learned were salient to specific experiences, which facilitated growth in overall world and word knowledge.

Other investigations also support findings that mothers' talk to children differs as a function of SES (Hoff, Laursen, & Tardif, 2002) and that this talk accounts for individual differences in the rate of children's vocabulary development (Huttenlocher, Haight, Bryk, Seltzer, & Lyons, 1991). Examining how maternal speech mediates the relationship between SES and vocabulary, Hoff (2003) found that SES results in differences in quantity, lexical richness, and sentence complexity of mother's speech to their children. Her findings are consistent with those by Hall and colleagues (1984) and Hart and Risley (1995), indicating that higher SES parents used utterances that were richer and greater in number of quality features of language. Hoff (2003) also reported that the habitual style of language use among college-

educated mothers influenced the way they talked to their children, "which in turn affected the rate at which their children built their productive vocabularies" (p. 1374).

These early differences in children's vocabulary knowledge have shown that even a small advantage grows into a larger one and becomes difficult to ameliorate without intervention (Biemiller, 2001b; NICHD Early Child Care Research Network, 2005). Graves, Brunetti, and Slater (1982) reported that children from higher SES groups knew twice as many words as children from low-SES groups and by 12th grade, high performing students knew about four times as many words as the low performing ones. Collectively, the studies reviewed in the preceding paragraphs suggest that the amount of language addressed to young children affects their vocabulary development. Consequently, one can infer that there is a socioeconomic factor in word knowledge and usage.

Ethnicity and language experience. As individuals learn language, they learn the meanings of not only the social system (i.e., SES) but also the meanings of the ethnic system of their culture. An ethnic group is a community of people within a larger society that is socially distinguished by others or by itself, primarily on the basis of racial and/or cultural characteristics (Bennett, 2003). Because children's early word learning is reflective of the values, expectations, and rules transmitted within their microculture, the preferred language patterns and modes of interaction of members within the group will influence the communication patterns that children develop (Battle, 1996). Unfortunately, this places many children from ethnically/racially diverse homes at-risk for academic achievement, because most classroom communication practices are based on the language socialization patterns of the mainstream, middle-class, white culture.

The literature has documented the problematic effects of school practices that are incongruent with home language socialization patterns of individuals from CLD backgrounds (Barry, 2001; Battle, 1996; Bowman, 1985; Caughy, O'Campo, Randolph, & Nickerson, 2002; Champion, Hyter, McCabe, & Bland-Stewart, 2003; Gay, 2000). The general consensus among these researchers is that differential characteristics among children from diverse social, cultural, and linguistic backgrounds place them at a disadvantage relative to other children. This disadvantage has been described as an outdated, inadequate, or irrelevant school curriculum that is discontinuous with a child's home culture (Fantini & Weinstein, 1968). It has been posited that the greater distinction between scholastic ethnicity (i.e., school culture) and a student's ethnic heritage or microculture, the greater the disadvantage the CLD student is likely to

experience (Longstreet, 1978). Divergence in verbal communication in aspects of grammar, semantics, phonology, and discussion modes are seen as the primary barriers to school success because children from diverse backgrounds have to learn academic subject matter in culturally different ways of communicating from what is expected in their own culture (Crago, 1992; Longstreet, 1978).

African American experience. Although African Americans are typically native speakers of English, the verbal communication practices of the school environment may create learning difficulties that are similar to those for linguistically diverse students. Many African Americans speak a form of English known as African American English (AAE). AAE is a rule governed linguistic system influenced by contextual and status variables, such as age, geographic location, SES, and linguistic complexity, as well as a number of cultural variables (Battle, 1996; Craig, H. K. & Washington, 1994; 1995). It has been suggested that children who speak AAE are potentially at a disadvantage when compared with their peers who speak Standard American English (SAE) because the school curriculum and instruction are based on SAE vocabulary and linguistic rules (Thompson, Craig, & Washington, 2004).

While African Americans across socioeconomic classes speak AAE to some extent, research has found that children from low SES backgrounds produce more AAE than their peers from middle SES backgrounds (Washington & Craig, 1994, 1998) which may influence their classroom performance. Indeed, African American children most at-risk academically tend to come disproportionately from the low income strata of the African American population (Allen & Boykin, 1992). Researchers suggest that the difference in African American children's (and other ethnic groups') performance in the classroom is not so much the children's acquisition of a standard speech variety, but rather an understanding of the functional language uses and demands required by the classroom (Wolfram, Adger, & Christian, 1999; Wright, 1983). To participate in cooperative interaction means that participants agree on the meaning and value of the words that they exchange either implicitly or explicitly (Wright, 1983). For many African American children, their word meanings may be incongruent with those of the school environment. Thus, the resulting conflict between understanding classroom language use and expectations of the teacher may hinder African American children's ability to be successful in school-related literacy activities.

Though African Americans' linguistic behavior is not necessarily homogeneous, much of the cultural language is colorful, creative, and adaptive (Champion et al., 2003). It contains innovative and constantly changing vocabulary that includes punning (e.g., "You can turn a duck into a soul-singer by putting him in the microwave until his *Bill Withers*."), playing on words, and introducing the semantically or logically unexpected. For example, using the word *salty* to indicate upset, embarrassed, or indignant as a result of humiliation or wrong doing by another person (e.g., "My girlfriend is all *salty* because I forgot about our plans and she was waiting around for like an hour."). African American English has several lexical items that are derived from Standard English words, some of which sound the same but differ in meaning. For example, the word *whack* as used in African American English not only denotes to slap or strike forcefully, it also has a special meaning when used in reference to something undesirable or crazy as in "It's *whack* that your mom grounded you because you didn't clean your room".

To illustrate this diversity in word meanings, Champion and colleagues (2003) examined the nonsystematic, missed items of low-income, African American children on the *Peabody Picture Vocabulary Test – Third Edition* (Dunn & Dunn, 1997). They found that young adult members in the community had strong alternative responses for 75 of the items missed by several children. The authors posited that these test items evoked the strong alternative responses from children who had not yet acquired the standard meanings of the words. Unfortunately it is this penchant for creative, nonstandard use of many word meanings, which arises from a cultural-specific language style and experience that tend to yield differences between African American students' knowledge and standardized test requirements.

Some have proposed that children from CLD and low-income backgrounds are socialized into using words in such a way that they perform poorly on standardized tests because they lack meaningful or direct experiences with the vocabulary (Peña, Iglesias, & Lidz, 2001). While the research documents that most differences develop before entry into school, the gap between students becomes perceptible on standardized tests of achievement and reading comprehension in later primary grades because they are heavily weighted toward vocabulary knowledge (Campbell, Hombo, & Mazzeo, 2000). To overcome the disadvantage that children with limited vocabularies have, it has been suggested that vocabulary instruction that systematically builds word and world knowledge should accompany instruction in decoding during kindergarten through second grade (Biemiller, 2001a; Champion et al., 2003; Scarborough, 2001).

Vocabulary Instruction

  While experts in vocabulary agree that the best way to develop students' vocabulary is to expand their understanding of a word's underlying concepts, there is some debate in how to facilitate this vocabulary growth. One school of thought is that explicit vocabulary instruction cannot produce substantial gains in overall vocabulary size or in reading comprehension (Nagy & Herman, 1987a). Nagy and colleagues (1988; 1987; 1985) suggest that inferring the meanings of unfamiliar words in written text is the major avenue for vocabulary growth. Therefore, what is needed is not more vocabulary instruction, but more reading. Proponents of this view suggest that because vocabulary instruction can only teach a limited number of words, only frequent and regular reading can provide the kinds of exposure children need to make gains in vocabulary. To illustrate, Fielding, Wilson, and Anderson (1986) found that the amount of free reading was the best predictor of vocabulary growth between grades two and five. Nagy, Anderson, and Herman (1987) also found that students who read grade-level texts under fairly natural conditions had approximately a one-in-twenty chance of learning the meaning of any particular word from context. They suggested that if 50 minutes of total reading, inclusive of reading both in and out school, occurred each day, children would gain approximately 2,000 words a year, or two-thirds of the average child's annual vocabulary growth. Consequently, supporters of this view argue that it is consistent, wide reading, which supplies the necessary repetition of words that makes learning of a large number of words possible.

  The disadvantage to this method of learning new words is that most written contexts are relatively uninformative and seldom give enough rich information for a reader to figure out the meanings of words independently (Schatz & Baldwin, 1986). Research has shown that even when ample information is available, some children do not know how to use the text to reason about the meanings of words (McKeown, 1985). This is because written contexts vary widely in the amount of relevant information available for deriving a word's meaning and even for the best readers, multiple encounters with an unfamiliar word is needed for it to be sufficiently learned (Beck & McKeown, 1991; Beck, McKeown, & McCaslin, 1983). Investigations have found that written contexts are ineffective at providing information about the meanings of new words (Beck et al., 1983; McKeown, 1985) and that inferring meanings from context is less effective than more intensive or explicit forms of instruction (Stahl & Fairbanks, 1986) for those in need of vocabulary development. For that reason, relying on wide reading for vocabulary growth as has

been suggested, adds to the inequities in individual differences in vocabulary knowledge. Rather, it has been suggested that children with limited vocabularies receive systematic, explicit vocabulary instruction (Baker, Simmons, & Kameenui, 1995) that is vigorous, strong, and powerful in effect (Beck et al., 2002).

Baker, Simmons, and Kameenui (1995) suggest that successful vocabulary instruction can be judged by whether it results in "increased word learning above what might otherwise occur during typical incidental and explicit learning opportunities; or more broadly by the extent that it meaningfully reduces the gap between students with poor versus rich vocabularies" (p. 3). They suggest that successful vocabulary instruction programs use procedures to teach word meanings that are consonant with goals for depth of word knowledge while also using procedures that move systematically toward ensuring that students become independent word learners. Similarly, Nagy (1988) suggests that effective vocabulary instruction should be based on integration, repetition, and meaningful use. Because knowledge is structured and consists of sets of relationships, instruction should integrate new information with familiar information to establish connections for learning. These connections are established by teaching students related concepts so they are able to understand and use new words to conceive and express new ideas (Nagy, 1988). Culturally and linguistically diverse learners who need help most in vocabulary need to acquire words at a faster pace than that of their peers (Baker et al., 1995; Nagy & Scott, 2000). Therefore, it has been suggested that vocabulary development programs should include goals for learning many words at a Stage 3 level of word knowledge (i.e., partial concept knowledge which enables a person to link a new word with a specific definition or single context).

Two prominent instructional approaches for increasing word knowledge in the extant literature are teaching word meanings and teaching skills involved in deriving word meanings from context. While studies indicate that students *can* learn word meanings from context, the probability that those with limited vocabulary *will* actually learn a word meaning from context is low (Jenkins, Matlock, & Slocum, 1989; Jenkins et al., 1984). In a study examining these two approaches, Jenkins, Matlock and Slocum (1989) found that on four measures of word knowledge, individual word meaning instruction was superior to the deriving meaning instruction for teaching specific words. They found that 3 to 6 instructional encounters with a word over a 4-week period resulted in 74% to 89% retention on a multiple choice test. Beck,

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McKeown, and Kucan (2002) have suggested that it is the rich extralinguistic context of oral language provided through intonation, gesture, and explanation of word meanings that make it richer than written texts for novel word learning. They suggest that the goal of the effective vocabulary instruction should be to develop extensive knowledge, which leads to a thorough understanding of the word accomplished via meaningful interactions with new words. This approach, called robust vocabulary instruction, has been found to help children retain new information over time (McKeown et al., 1983) and to make important associations between new information and related background knowledge (Graves & Prenn, 1986).

Robust vocabulary instruction. With a robust vocabulary approach students learn how a novel word is similar to and different from related concepts and how the word is used in a variety of situations. The key is to have students understand a concept at a personal level and then understand its relation to similar concepts (Carr, 1985). Robust vocabulary instruction provides repeated interactions with opportunities to process new words by making inferences based on meaningful uses and prior experiences. Beck, McKeown, and Kucan (2002) describe robust instruction as "instruction that offers rich information about words and their uses, provides frequent and varied opportunities for students to think about and use words, and enhances student's language comprehension and production" (p. 2). The objective is for students to learn word meanings at a deep level of understanding using a variety of procedures that include word associations, word networks, and sentence completions, among a number of other game-like tasks that stress the relations between target words and previously acquired vocabulary.

In their first two experiments, Beck and her colleagues (1982; 1983) evaluated the effectiveness of robust vocabulary instruction compared to regular reading and language arts activities. They found that fourth-grade pupils receiving the instructional program performed better than their peers in the control group in three ways: (a) they learned the meaning of more of the words they were taught; (b) they demonstrated greater speed of lexical access as measured by reaction time on a word categorization task; and (c) they had superior comprehension of stories that contained taught words.

In a third study, McKeown et al. (1985) examined the effects of the nature of the instruction and the frequency of instructional encounters of taught words. Fourth grade students in the experimental group received one of three kinds of instruction: learning definitions for words, rich instruction, and extended rich instruction. The extended rich instruction encouraged

children to be aware of and use the taught words outside of class. Frequency of input was manipulated by providing either 4 or 12 encounters with each word. Dependent variables were measures of definition knowledge, fluency of access to word meanings, context interpretation, and story comprehension. Results indicated that while the three instructional groups' performances were superior to the control group on definitional knowledge, they did not differ from each other. Extended rich instruction was superior to rich instruction in fluency of access and story comprehension, and rich instruction was superior to definition instruction in context interpretation and story comprehension. High frequency encounters resulted in better performance on all measures. The authors concluded that even as few as four encounters with a word will produce results in vocabulary learning. Although only rich instruction, and only in the high encounter condition, was powerful enough to affect comprehension.

Beck and colleagues (2002) suggest that because direct instruction in word meanings for all words is not feasible, instruction should focus on only those words found in a mature literate individual's vocabulary. Beck and McKeown (1985) reported that a mature language user's vocabulary comprises three tiers. The first tier consists of the most basic words like *happy, sun,* and *jump*. These words rarely require instruction as to their meaning. The second tier contains words that are of high frequency for mature language users and are found across a variety of domains (e.g., *precarious, obstinate,* and *jovial*). The third tier, made up of words whose frequency of use is low, is often related to specific domains, and whose rich understanding would not be of high utility for most learners (e.g., *mollusk, cirrus,* and *quark*). The authors suggest that instruction directed towards Tier Two words is most productive because a rich knowledge of these words can have a powerful impact on verbal functioning. See Table 2.1 for criteria of Tier Two words. They also recommend that for children in the early elementary grades, sources of words for vocabulary development should come from storybooks.

Role of Storybooks in Vocabulary Development

An effective way to expose children to vocabulary used by mature language users is reading aloud from storybooks. Beck, McKeown, and Kucan (2002) suggest that developing vocabulary in the earliest grades should focus on developing vocabulary from books that are read aloud to children rather than read by children. They posit that storybooks that are read aloud are excellent sources for identifying ideas in the story that can be characterized by Tier 2 words. The research demonstrates that engaging children in early book reading experiences provides

comprehensible input that enhances children's abilities and understanding about vocabulary (Tomlinson & Lynch-Brown, 1996) because it provides exposure to new words regardless of reading ability or language and literacy materials in the home and community (Brabham & Lynch-Brown, 2002). Descriptive, correlational, experimental, and intervention studies have demonstrated that both younger and older children benefit from read-aloud activities (Bus, Van Ijzendoorn, & Pellegrini, 1995; Dale, 1996; Hargrave & Sénéchal, 2000; Sénéchal, 1997; Sénéchal & Cornell, 1993; Sulzby, 1985; Whitehurst et al., 1988). Collectively these studies show that children from middle-class backgrounds who likely experience book reading interactions at home, as well as those whose language skills and home experiences are relatively impoverished, benefit from storybooks read aloud. In some cases book reading has been incorporated into intervention programs, which also have shown effects on children's development (Whitehurst et al., 1994).

Experimental studies clearly show that not only do children learn new vocabulary from exposures to storybooks, but vocabulary acquisition varies depending on the nature of the interaction during the book reading event (Bus et al., 1995; Weizman & Snow, 2001; Whitehurst et al., 1994; Whitehurst et al., 1988). The various findings of these investigations converge in showing that several interactive features or aspects of conversations around book reading can more efficiently facilitate vocabulary development. In an investigation examining the effect of adult-interactive behaviors during repeated readings, Mautte (1990) found significant differences between a treatment group receiving storybook reading with adult-interactive behaviors (e.g., asking questions and explaining words in the story) and a control group receiving book reading without adult-interactive behaviors. At-risk prekindergarten children in the treatment group scored significantly higher than children in the control group on the language development dependent variable. The researcher noted that the treatment appeared to be effective in terms of eliciting children's responses and in generating their participatory behaviors during storybook readings. Classroom teachers reported generalized participatory and reading related behaviors within the classroom setting.

A similar type of program, *Text Talk,* was developed by Beck and McKeown (2001) as a means of capturing the benefits of read-alouds. The goals of Text Talk are to enhance vocabulary development and comprehension through interspersed open questions. Children are asked to consider the ideas in the story, talk about them, and make connections among them.

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This type of active participation during storybook reading has been found to improve learning of novel words, regardless of prior vocabulary knowledge (Ewers & Brownson, 1999; Sénéchal, 1997; Sénéchal, Thomas, & Monker, 1995). Consequently, researchers suggest it is particularly important for children who are at a disadvantage in acquiring new vocabulary to receive multiple repetitions (Elley, 1989; Robbins & Ehri, 1994), explanation of unfamiliar words (Brett, Rothlein, & Hurley, 1996; Elley, 1989) and meanings of novel words in salient, contextualized methods (Beck et al., 2002; Wasik, 2001). Since children at a disadvantage in acquiring vocabulary often come from culturally, and linguistically diverse groups, Valdez (1999) suggests that using literature that shows sensitivity to a broad range of cultural experiences and that activates prior knowledge is critical.

   Multicultural literature. During book reading interactions, adult readers make the world accessible to young children and convey intrinsic values about how the world operates based on the types of literature books used in shared reading activities. Researchers and professionals seem to agree about the need for children's literature to better reflect the reality of children's lived experiences (Gay, 2000; Higgins, 2005; Ladson-Billings, 1995). Rochman (1993) explains the importance and purpose of multicultural literature indicating that,

>   A good book can help to break down [barriers]. Books can make a difference in dispelling prejudice and building community: not with role models and literal recipes, not with noble messages about the human family, but with enthralling stories that make us imagine the lives of others. A good story lets you know people as individuals in all their particularity and conflict; and once you see someone as a person – flawed, complex, striving – then you've reached beyond stereotype. Stories, writing them, telling them, sharing them, transforming them, enrich us and connect us and help us know each other. (p. 19).

   Typically, however, children are exposed to a single perspective, a single group experience, or a single outlook – and that outlook is often Euro-American in nature (Zeece, 1997). The experiences of children from culturally and linguistically diverse groups are not usually represented in conventional storybooks. Attention to such things as language, clothing, use of living space, or customs and social relations may be overlooked or misrepresented (van Keulen, Weddington, & DeBose, 1998). Therefore, interactions with text may be different because these children may bring diverse assumptions about the world to the printed page (Delpit, 1995; Gay, 2000; Ladson-Billings, 1995). These differences are often caused by not having meaning correspondence between the spoken and written word (i.e., vocabulary

knowledge) resulting from variations in social, cultural, and linguistic experiences. Multicultural literature offers more than cultural familiarity, rather the context serves to lend a perspective to the story reading event which signals value within a group's cultural domain (Tharp et al., 1984). Consequently, acknowledging children's home culture through literature is pertinent in using their experiences to develop literacy skills at school (Sleeter & Grant, 1991).

If a text either contradicts children's factual knowledge or is contrary to their world perceptions, difficulties can arise (Conrad, Gong, Sipp, & Wright, 2004). Researchers suggest that a mismatch between intellectual, cultural, and experiential schemata of students and those represented in topics and texts of instructional materials is likely to impede comprehension (Crawford, 1995; Diamond & Moore, 1995). Thus, literature should be selected on the basis of enabling students to make connections to real-life experiences and activating their background knowledge (van Keulen et al., 1998). Since background knowledge supports the construction of a plausible interpretation for the information being encountered, researchers suggest that utilizing literacy materials that do not activate students' prior knowledge can mean literally excluding them from understanding information (Reynolds, Taylor, Steffense, Shirley, & Anderson, 1982).

To illustrate this point, Grice and Vaughn (1992) asked African American and rural White children to read a passage about a sounding episode – an African American speech event involving ritual insults. The reading was clearly culturally biased in favor of the African American readers and as anticipated, the African American students scored considerably higher in comprehension than the rural students. Relatedly Crawford (1995) investigated the responses of African American and Caucasian American third-grade studentss to African American culturally conscious literature (i.e., picture books, novels, biographies, and poetry). Twenty-one of the twenty-four books used were categorized as "culturally-conscious" and three were "melting pot" (i.e., characters were middle-class and no explicit references were made to their racial identity). The author found that the contextual knowledge, prior experiences, and cultural background of students either facilitated or interfered with their ability to receive the messages from the books. Investigators in both studies concluded that the differences between the groups of readers were due to contextual orientations and cultural differences in background knowledge. Hence, to increase students' connections to and comprehension of text, care should be taken in selecting literacy materials that are relevant to children's cultural and linguistic backgrounds.

While a number of studies have investigated the effects of multicultural literature on reader response groups, the number of empirical investigations on the effect of multicultural literature on literacy achievement is rather small. Most of the evidence of successful use of multicultural literature to improve literacy achievement of students is provided by a number of "special programs" implemented by school districts. One of these programs is the Multicultural Literacy Program (MLP) (Diamond & Moore, 1995). The program was implemented in two Michigan school districts with children in grades K-8 over a four-year period. The program included multiethnic literature, with whole-language approaches and a socioculturally sensitive learning environment. While no quantifiable data are available on how the MLP affected student achievement, creators and facilitators cite classroom observations and analysis of samples of students' work as evidence of the program's success. They reported that across groups of students who differed by ethnicity, cultural background, and intellectual ability, students exhibited:

- More interest and enjoyment in reading multicultural books
- More positive attitudes toward reading and writing in general
- Increased knowledge about various forms, structures, functions, and uses of written language
- Expanded vocabularies, sentences patterns, and decoding abilities
- Better reading comprehension and writing performance
- Longer written stories that reflect more clarity and cohesiveness
- Enhanced reading rate and fluency
- Improved self-confidence and self-esteem
- Greater appreciated of their own and others' cultures.

Another such program designed to improve Navajo students' language, literacy, and biliteracy skills was developed in 1987. The Rough-Rock English-Navajo Language Arts Program (RRENLAP) (Dick, Estell, & McCarty, 1994) used cultural content to increase the academic achievement of its students. On locally developed criterion-referenced measures of reading comprehension, K-3 students showed a gain of 12-percentage points, and their median percentile rank scores on a reading vocabulary test doubled. Teachers' qualitative assessments for students who spent four years in the program indicated consistent improvement and control of vocabulary, grammar, social uses of writing, and content area knowledge (Bishop, 1992).

In an empirical investigation examining the effects of racial imagery and cultural themes, Bell and Clark (1998) studied African American children's responses to three story conditions featuring: (a) black characters and African American themes, (b) White characters and Euro-American themes, and (c) Black characters and Euro-American themes. The authors found that the children recalled more story events for stories depicting Black characters and themes than those consisting of Black characters and Euro-American themes or White characters and Euro-American themes. They also found that children's comprehension of stories depicting both Black imagery and culturally related themes was significantly different than for stories depicting White imagery and culturally distant themes (i.e., the theme of the book was incongruent with sociocultural experiences of African Americans) and Black characters and traditional/Euro-American themes. The authors suggested that when reading content is culturally relevant, it is more stimulating and engaging than it would be otherwise, thus facilitating recall.

Relevant content includes information about the histories, cultures, contributions, experiences, perspectives, and issues representative of children's respective cultural/ethnic group (Gay, 2000). Other researchers conclude that exposing children to literature that includes characters, settings, and events similar to their lived experiences produces positive academic, personal, and social results (Kawakami & Au, 1986; Norton, 1992). When teachers use culturally diverse materials, the cultural heritage of students from diverse backgrounds becomes the sources and centers of educational programs because the content is chosen and delivered in ways that are directly meaningful to students to improve their learning (Wallach & Butler, 1994). Anderson, Anderson, Lynch, and Shapiro (2003) suggest that most educators have a strong sense of social justice and want to support all children's literacy development, particularly those from disadvantaged homes; thus, literacy and learning should be built on the foundational knowledge that children already have, beginning with the use of multicultural children's literature (Higgins, 2005).

Summary

The vocabulary we possess enables us to gain a deeper understanding of the world in which we live, understand oral and written texts, and acquire new word meanings. Word meanings are implicitly or explicitly culturally coded and are learned in highly referential context sensitive interactions (Bennett, 2003; Gay, 2000) in different conditions, to different levels of completeness and with different outcomes with regard to SES, ethnicity, and linguistic

variation. Because a child's ability to assign meaning to the events of his environment arises out of his interaction within a particular sociocultural framework of participation, children from diverse social, cultural, and linguistic backgrounds may be at a disadvantage because of divergence in spoken and written word meanings. Thus, it has been suggested that for children who lack the vocabulary upon which test and teacher expectations are built, systematic vocabulary instruction should be developed and embedded in activities that build world knowledge. Some have suggested that curriculum sources and content that provide accurate presentations of ethnic and cultural diversity offer several benefits for improving the academic achievement of children from diverse groups. Unfortunately, while the theory about the potential of multicultural curriculum content and the effectiveness of comprehensive vocabulary instruction programs for improving student's achievement is rich, the supportive empirical research that addresses the needs of the diverse learner is sparse. Thus the purpose of this study is to add to the literature base by examining the effectiveness of the *robust vocabulary instruction* for children with diagnosed vocabulary deficits. While the instruction has proven successful for typically developing children and children considered at-risk for later academic achievement (e.g., low SES) to date there is no empirical data for its efficacy for children with clinically depressed vocabulary skills (i.e., children with standard scores $\geq$ -1 *SD*) as measured by standardized assessments of vocabulary. A secondary aim of this investigation concerns the impact of using a multicultural storybook in the context of robust vocabulary training on learning and retention of novel words among young African American children. Thus, this investigation will seek to answer the following research questions:

1.   What are the effects of a systematic vocabulary instructional technique for children with vocabulary deficits?

2.   What is the role of book type in acquisition and retention of vocabulary among African American children? More specifically, to what degree do African American children acquire and retain knowledge of novel words from a storybook that depicts images and experiences similar to their cultural background?

Table 2.1

Criteria for Identification of Tier Two Words

	Criteria	*Example (for "collect")*
Conceptual understanding	It is a word for which students understand the general concept but lack precision and specificity in describing the concept.	2nd grade children understand the concepts of *bringing things together in a group* (e.g., Students often *collect* can goods for school/community food drives) and *receiving payment* for something (e.g., Students often *collect* money for fundraising events).
Importance and utility	The word is found in the written and oral language of mature language users and appears frequently across a variety of texts.	*Collect* is a useful word that young children can use to describe their everyday experiences. The word is found in books, print media, and spoken language in most environments.
Instructional potential	The word can be worked within a variety of ways so that students can build rich representations of them and of their connections to other words and concepts.	The word *collect* can be used to add to children's network of related words (e.g., gather; take up) through game play (e.g., treasure hunt); social activities/hobbies (e.g., leaf collection); and academic tasks (e.g., points for book reading/assignments).

Note. From "Bringing Words to Life: Robust Vocabulary Instruction," by I.L. Beck, M. G. McKeown, and L. Kucan, 2002, p. 19.

CHAPTER III

METHODOLOGY

Research Design

An Adapted Alternating Treatments Design (AATD) was used to investigate the role of book type in the acquisition and retention of novel vocabulary words. In an Alternating Treatments Design (ATD), a single baseline of behavior is followed by an experimental condition in which two or more interventions are rapidly alternated (Barlow & Hayes, 1979). In applied research, rapid means that each time the client is seen he or she would receive an alternate treatment. The AATD differs from the standard ATD in that each intervention is associated with a unique set of instructional items (Sindelar, Rosenberg, & Wilson, 1985). For this investigation, vocabulary words from each book served as unique instructional items. An initial baseline, (i.e. the pretest) was completed in which equivalence of performance on the two sets of words was demonstrated, which was followed by the experimental condition. Acquisition of one set of words was compared to acquisition of another set of words (i.e., instructional vs. control and Book A vs. Book B). In this design, experimental control is demonstrated when acquisition of one set of words is more rapid than acquisition of the other and the effect is consistent across participants.

Independent variable. The independent variable (IV) or alternating treatment for this investigation was book type; Book A featured illustrations of African American characters and Book B featured illustrations of Caucasian characters.

Dependent variable. Because it has been suggested that examining children's productive definition of words focuses less on their general sense of words and more on decontextualized word knowledge (Beck et al., 2002), participants' word knowledge was measured by a test of production vocabulary. The assessment, located in Appendix A, is comprised of 18, Tier 2 words from the two books. Words were not defined in the story and not easily comprehended from clues in the surrounding texts. All words are verbs and none of the words from one story appeared in the other. Participants' responses to each item were transcribed verbatim on a score sheet and subsequently scored by a trained research assistant using the scoring criteria. Participant scores on the production vocabulary test are based on Dale's (1965) level of word knowledge using the scoring criteria identified in Table 3.1 and scoring examples in Table 3.2. Three points were awarded for Stage 4, two points for Stage 3, and one point for Stage 2. A

score of 0 was awarded for no knowledge or incorrect use of the word (i.e., Stage 1). Raw scores for individual items were summed to derive a total score at each probe point.

Instrumentation

Eligibility assessments included administration of the following:

- A bilateral hearing screening to determine that hearing acuity was within normal limits was completed at 20dB at 500, 1000, 2000, and 4000 Hz. Children were required to respond correctly at all frequencies as demonstrated by hand raise.

- Because a major component of this investigation deals visual images represented in the two storybooks, the *Motor-Free Visual Perception Test – 3rd Edition* (MVPT-3, Colarusso & Hammill, 2003) was administered to assess participants' visual perceptual ability. Visual perception enables a person to understand what he or she sees and to make accurate judgments on the size, configuration, and spatial relationship of objects. The test is appropriate for ages 4.0 to 94.0+ years. It assesses the following perceptual tasks: spatial relationships, visual discrimination, visual closure, and visual memory. It employs simple black and white line drawings for stimulus and answer choices. Each item was presented in a multiple-choice format with primarily matching tasks. Participants verbalized the letter of the answer or pointed to a picture to indicate answer choices. A total raw score was obtained by subtracting the number of errors from the last item administered. Raw scores were used to obtain derived scores (i.e., standard scores, percentile ranks, and age-equivalents) located in the norms tables. The standard score represents general visual ability. Administration time was approximately15 minutes. The mean standard score is 100, standard deviation 15. The median reliability coefficient for ages 4 through 10 is .80. The correct test-retest reliability coefficient for the same age group is .87.

- The *Test of Nonverbal Intelligence – 3rd Edition* (TONI-3, Brown, Sherbenou, & Johnsen, 1997) was given to assess the participants' general intellectual functioning. This assessment is a language-free, motor-reduced, and culture-reduced measure of cognitive ability in individuals ages 6-0 through 89-11. The test contains 45 items that require abstract/figural problem solving. The examiner pantomimed instructions and the participant responded by pointing or other

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meaningful gestures. Responses were given a score of 1 or 0 points according to their appropriateness. Testing was discontinued at item 45 or at a ceiling defined as three incorrect responses within five consecutive items. The total raw score was the number of correct responses made by the examinee between item 1 and the test ceiling. Raw scores were converted to deviation quotients and percentile ranks using norms tables located in the test's appendices. Administration time was approximately 15 minutes. The mean standard score is 100, standard deviation 15. Coefficient alphas for African American children are .94 for both forms of the test. The test-retest reliability coefficient is .91 for Form A, and .92 for Form B.

- The *Word Test-2nd Edition-Elementary* (WORD-2, Bowers, Huisingh, LoGiudice, & Orman, 2004) was administered to assess participants' expressive vocabulary and semantics knowledge. The test consisted of six subtests given orally and is appropriate for ages 6.0 to 11.11 years. The six subtests assess the following skills: associations, synonyms, semantic absurdities, antonyms, definitions, and flexible word usage. Responses for each of the 15 items in the subtests were given a score of 1 or 0 points according to their appropriateness. There are no basals or ceilings. Raw scores for each subtest were calculated as the number of items answered correctly. A total test raw score was obtained by adding the raw scores for each subtest. The total test raw score was converted to derived scores using the test's norms tables. Administration time was approximately 20 minutes. The mean standard score is 100, standard deviation 15. The test-retest reliability coefficients for ages 7.0 to 8.0 are provided: ages 7.0-7.5 ($r = .99$), 7.6 – 7.11 ($r = .96$), 8.0 – 8.5 ($r = .96$).

- The *Expressive One-Word Picture Vocabulary Test – 3rd Edition* (EOWPVT-3, Brownell, 2000a) was administered to assess participants' expressive vocabulary. The EOWPVT-3 consists of a set of 170-color test plates ordered in respect to difficulty that depict an object, action, or concept and is normed for ages 2.0 to 18.11 years. Responses were elicited by asking, "What is this?" Eight consecutive correct responses were required to establish the basal. Testing continued until a ceiling of six incorrect out of eight consecutive items was

obtained. A participant's raw score was the number of correct responses up to the last item in the ceiling with all responses below the basal considered correct. Derived scores were obtained by converting the raw scores using the test's norms tables. Administration time was approximately 15 minutes. The mean standard score is 100, standard deviation 15. Internal consistency of the test is .96 with a corrected split-half coefficient of .98. The corrected test-retest reliability is .90.

- The *Receptive One-Word Picture Vocabulary Test – 3rd Edition* (EOWPVT-3, Brownell, 2000b) was given to assess participants' receptive vocabulary.   The ROWPVT-3 consists of a series of test plates that show four illustrations and is appropriate for ages 2.0 to 18.11 years. Responses were elicited by saying, "I am going to show you some pictures, and I want you to point to (or tell me the number of) the picture that is the same as the word I say". Eight consecutive correct responses were required to establish the basal. Testing continued until a ceiling of six incorrect out of eight consecutive items was obtained. A participant's raw score was the number of correct responses up to the last item in the ceiling with all responses below the basal considered correct. Derived scores were obtained by converting the raw scores using the test's norms tables. Administration time was approximately 15 minutes. The mean standard score is 100, standard deviation 15. Internal consistency of the test is .96 with a corrected split-half coefficient of .98. The corrected test-retest reliability is .84.

Participants

Because one of the purposes of this investigation was to examine the role of book type in the acquisition and retention of vocabulary among culturally and linguistically diverse children, only African American children were recruited to participate in the study through child-find (i.e., speech-language screenings, announcements, teacher/parent referrals). Seventeen children completed eligibility assessments outlined in the instrumentation section. Criteria for participation required children to: (a) be second grade children, ages 7.0 to 8.0 years, (b) have the ability to appropriately attend (i.e., by looking at the investigator and materials for approximately 30 minutes, as judged by participation during eligibility assessments), (c) have hearing abilities within normal limits as measured by a bilateral hearing screening, (d) have visual perceptual abilities within normal limits as measured by the MVPT-3, (e) have cognitive

skills within normal limits as measured by the TONI-3, (f) have vocabulary skills that were clinically depressed as measured by performance of $\geq$ -1 *SD* on two standardized tests of vocabulary or $\geq$ -2 *SD* on one standardized test of vocabulary, and (e) have no knowledge or a general sense (i.e., Stage 1 or 2) of target words as measured by performance on the dependent measure.

Eligibility assessments were completed two weeks prior to implementation of the study. Hearing screenings, vocabulary assessments, and the dependent measure were completed by graduate students in speech-language pathology and supervised by the investigator. The investigator completed all remaining assessments. Seventeen children completed eligibility assessments. Nine children did not meet criteria of having clinically depressed vocabulary skills while two children did not have motor-visual perceptual abilities that were within normal limits. The remaining six children qualified for participation in the study. Parental consent was obtained for a final sample of five children.

Participant description. Participants included 3 males (two were twins) and 2 females ranging in age from 7.2 years to 8.0 years. All children were African American and were from four different elementary schools in the city. No participant was enrolled in or referred for special education services and none have repeated a grade. All participants were of low SES as judged by parental report of the child's eligibility for free or reduced lunch in public school. Parents of participating children received gas cards in the amount of $15 weekly to assist with the expense of bringing children to the speech and hearing center. At the conclusion of the study, all participants received a $5 gift certificate for their choice of Wendy's, Wal-mart, or Blockbuster Video.

The mean standard score on the MVPT-3, assessment of visual-perceptual abilities, was 96.4 (*SD* = 8.44, range 90-110). The mean standard score on the TONI-3, language free test of cognitive abilities, was 104 (*SD* = 7.55, range 95-115). The mean standard score on the WORD-2, expressive vocabulary and semantics assessment, was 78.4 (*SD* = 3.50, range 73-82). The mean standard score on the EOWPVT-3, measure of single word expressive vocabulary, was 78.2 (*SD* = 5.12, range 70-84). The mean standard score on the ROWPVT-3, measure of single word receptive vocabulary, was 91.6 (*SD* = 4.03, range 86-96). The mean word knowledge score on the dependent variable was 3.2 (*SD* =1.96, range 0-7). Participant eligibility assessment scores are shown in Table 3.3.

Materials

       Storybook selection. Two storybooks were chosen for use and were rotated each session based on a scheduled of ABBABAAB. Each book was read once each week for a total of 4 times over the course of the intervention. The books were chosen based on the following criteria: (a) non-stereotyped portrayals, (b) positive images, (c) lack of derogatory language, (d) accurate historical information and cultural details, and (e) realistic illustrations of Caucasian and African American ethnic groups. To determine equivalence of the books, analysis of genre, narrative structure, and visual content was completed in accordance with procedures delineated by Donovan and Smolkin (2001). Genre and narrative structure were analyzed to ensure similarity of vocabulary within the books. See Table 3.4 for a description of the lexical density and number of informational ideas for each book. Because visual images were salient factors in this investigation, the visual content analysis focusing on the artwork, scenery, number of character illustrations, and the number of pages with illustrations was used to determine primary equivalence of book type. See Table 3.5 for visual content analyses.

       Target word selection. A preliminary set of 24 words was chosen from the two storybooks. The basis for selecting the initial set of words was that they would not be too difficult to explain to young children. Using Beck et al.'s (2002) criteria for tier two words discussed in Chapter II, the following questions guided the selection of the words:

   a.   How generally useful is the word?

   b.   Is it a word that children are likely to encounter in other texts?

   c.   Will it be of use to children in describing their own experiences?

       Six teachers of children in the 2nd grade were asked to review the preliminary set for children's likely knowledge of the words. Teachers were requested to indicate if children would have: (a) a general sense of the word (i.e., could provide an appropriate sentence using the word), (b) would know the word (i.e., could provide a correct definition without using the word), or (c) would not likely know the word. If teachers indicated that children would likely know the word, they were asked to provide possible definitions that typically developing children may produce. Six words were judged as unlikely to be known by typically developing children. Ten words were judged by teachers as children having a general sense of the word. Teachers judged the remaining eight words as those for which children would likely know. The definitions

provided by teachers and the investigator, using the *Macmillan Dictionary for Children* (Chumbley, 1989), were used to construct the pilot test.

Pilot testing for consistency of definitions and confirmation that a deep knowledge of the words was unknown to young children was completed with 155 typically developing children ages 6.0 to 8.0 years. Children from 17 schools in Northeast Arkansas were individually administered the pilot test by clinical students in speech-language pathology. The sample consisted of 51 six-year old, 64 seven-year old, and 40 eight-year old children divided among the following ethnic/racial groups: 115 (74%) Caucasian, 35 (23%) African American, and 5 (3%) Hispanic/Latino. Of the 24 words, a final set of 18 words was selected based on pilot test results, opinions of teachers that 2nd grade children are unlikely to have a deep knowledge of the target words, their importance and utility across domains, instructional potential, and conceptual understanding. Six words were deleted to maintain an equal number of words from each book and an equal number in the word sets. The instructional word set consisted of six words for which typically developing children had a general sense (i.e., words were used in seemingly appropriate sentences). The non-instructional set of words consisted of twelve words, six foils (i.e., words readily familiar to young children), and six in which children demonstrated no knowledge (i.e., an incorrect definition or sentence was provided). The latter six words served as control words in the investigation. A list of words from each book is located in Appendix B.

Setting

A group session was conducted twice weekly for approximately 30 minutes in a large 20 x 25 therapy room at the speech and hearing center on the campus of Arkansas State University. The room was arranged with a child-sized table and chairs with an activity area, sink, counter spaces, and two computers. During each storybook reading, the investigator was seated in a chair or on the floor in front of the participants. All instructional sessions occurred in the designated group therapy room. Baseline and probe sessions occurred in a smaller, individual therapy room in the speech and hearing center. All sessions were videotaped using a *Sony 8 mm Handycam* video camera recorder.

Procedures

General procedures. Children participated in a small group session for 30-minutes twice weekly, over 4 weeks, for a total of eight sessions. Instructional sessions took place on Mondays and Wednesdays with each treatment condition occurring once a week. A book reading occurred

each session followed by a vocabulary lesson on targeted instructional words. Weekly probes were administered to each participant on Fridays with a posttest probe two weeks following the conclusion of the investigation. See Table 3.6 for order of instructional sessions and probes.

Pretest/posttests and probe procedures. Participants were individually administered all probe sessions in a small therapy room in the Arkansas State University Speech and Hearing Center. Seated to the right of the participant at a table, the investigator initiated the dependent variable with a demonstration of the task and two trial items. Word knowledge was probed by beginning with the following demonstration item: "Sometimes in school you may be asked to give the definition of a word or to tell what a word means." The best way to give a definition is to tell what it is and something about it." For example, "If I am asked to define *skip*, I can say 'hop,' but that isn't a complete definition. A better way to tell about *skip* is, 'It is hopping lightly on one foot and then another.' That tells what skip is and something about it." Two trial items were then completed followed by the assessment. Each item in the assessment began with a simple carrier phrase, "Tell me all you can about what the word _____ means". The investigator waited 5 seconds for an initiation of a response before proceeding to the next word. If an incomplete response was given or the word was only provided in a sentence, the participant was prompted to provide more information by the investigator stating, "tell me more" or "what does the word mean" that was given in the sentence. For example if a participant responded, "I collect toys", the investigator responded, "What does that mean when you say I _collect_ toys?" A non-contingent verbal praise was delivered on the average of every third response (VR3) for participation and attention to task. Participant responses were written verbatim and scored according to Dale's stages of word knowledge. All probes were conducted in the same manner with the exception of order of presentation of words on the pre/posttest and weekly probe. See Appendix C for weekly probe.

Instructional/experimental procedures. Each session began with a 6 – 12 minute storybook reading activity. The storybook was read in accordance with the protocol specific to the book-reading event (i.e., first, second, third, or fourth). The investigator read one book each session using a modified version of Mautte's (1990) protocol for adult interactive behaviors during storybook reading. Each book reading session was followed by a vocabulary lesson targeting instructional words from the story. Oral and hands-on, experiential activities, that encouraged children's interactions with words, were completed in a sequenced set of activities

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based on Beck and McKeown's (2001) Text Talk and Beck et al.'s (2002) robust vocabulary program. See Appendix D for week 1, Appendix E for week 2, Appendix F for week 3, and Appendix G for week 4 activities.

     Book reading procedures. Each book reading session began with preparing children for listening with questions and discussions. The story was introduced with background information about the title and author. During the initial reading of each book, children were encouraged to predict what the story would be about as the investigator flipped slowly through the pages of the book. On subsequent readings, children were asked to recall what the story was about. Following predictions and/or recall, the investigator provided a brief description of the story. To build additional background knowledge and a purpose for listening, children were asked pre-questions related to events in the story. The book was then read with enthusiasm, using suitable speed, volume, and intonation. During each reading, the investigator pointed to and made comments about illustrations in the books. Book A was read an average of 10.25 minutes ($SD =$ 1.70, range = 8-12 minutes). Book B was read an average of 7.75 minutes ($SD =$ 1.70, range = 6-10 minutes).

     Vocabulary instruction procedures. Following each book reading activity, a vocabulary lesson targeting the instructional word set was implemented. Each word was contextualized for its role in the story, one at a time, by turning to the page in the book and reading the sentence in which the target word appeared. A child friendly definition was provided, followed by the creation of a phonological representation in which participants repeated the word. For example, the target word *notice* was introduced in the following manner, "*In the story, Uncle Ed Lee asked Bradley did he ever <u>notice</u> how bright Miss Viola's smile was. Here, the word notice means to see or observe. Say the word after me, notice*". After each target word was presented in this manner, an example was provided in a context different from the story. Again, *notice* was presented in the following manner, "*Sometimes people do things because they want you to <u>notice</u> them or something they have. For example, if your friend just got new shoes, he might walk back and forth in front of you so that you <u>notice</u> them*". Four to five activities in which children interacted with and said the target words were completed. These activities consisted of using inferential and evaluative questions, comments about the words, choices between words, relating words to known concepts, and participant provision of examples of targeted words. Each lesson concluded with a reinforcement of the phonological representation by repeating the name of each

word. Average instructional time for words from Book A was 16.75 minutes (SD = 2.75, range = 14-20 minutes). Average instructional time for words from Book B was 18 minutes (SD = 2.44, range = 15-20 minutes).

Reliability

Pre-experimental. Two independent judges completed pre-experimental reliability of the dependent measure. Judges were provided with a random selection 26% of responses by children in the pilot test to analyze the consistency with which children's responses were rated according to the scoring criteria. Reliability was calculated by dividing the total number of agreements by the number agreements plus disagreements and multiplying the total by 100 (McReynolds & Kearns, 1983). Point-by-point agreement was 47% suggesting that the method of scoring was not sufficiently clear to produce consistent agreement of children's level of word knowledge. Therefore, the written scoring criteria were modified to include an example of each stage of word development and the expected definitions for each word. Judges were trained in the modified scoring criteria using one response sheet from each age group. Inter-rater reliability, established by point-by-point agreement among the three judges for a random selection of 20% of the remaining response sheets, increased to 87%. Modified scoring criteria is located in Table 3.2

Experimental. To evaluate the consistency with which the investigator scored a participant's response (e.g., Stage 1, 2, 3, or 4) during the experimental stage, trained research assistants re-scored all participants' responses from the videotape, for each of the six probes based on the original markings by the investigator. The item scores were then compared to the original item scores to determine agreement. Inter-rater agreement for participants' stage of word knowledge was calculated by dividing the total number of agreements for each item by the number of agreements plus disagreements multiplied by 100.   Inter-rater agreement for the dependent measure during the baseline condition was 100% and 91% during the experimental condition (range = 90-92%).

Reliability data for probe procedures were obtained for 83% of all probes. Procedures measured included presenting instructions, recording verbatim participant responses, and providing variable reinforcement for attending behaviors. Reliability for probes was calculated at 97% (range = 93-100%) by dividing the total number of agreements between investigator

behaviors, as noted by the observer and items on the assessment by the number of agreements plus disagreements multiplied by 100. See Appendix H.

To ensure consistency between implementation of procedures, two measures of procedural reliability were collected for 100% of sessions. Data collected to ensure an equivalent number of references to images in storybooks yielded an overall $M = 10.625$ for Book A and $M = 10.125$ for Book B. See Table 3.7 for references to images during story reading and Table 3.8 for reference to images during vocabulary lessons. The data recording sheet is located in Appendix I. The second set of behaviors assessed adherence to the set of sequenced activities delineated in the instructional procedures. Reliability data were calculated by dividing the total number of agreements between investigator behaviors and scripted items by the number of agreements plus disagreements and multiplying the total by 100 (Billingsley, White, & Munson, 1980). Reliability for Book A was 96% (range = 92 – 100%) and 98% for Book B (range = 92-100%). The data recording sheet is located in Appendix J.

Data Analysis

Given the use of the six foils (i.e., words that all participants demonstrated recognition by correct use of the words in sentences), data analyses were completed only on instructional and control word sets. Thus, the range of scores for each word set could potentially range from 0 to 24. In a similar manner, analyses for differences between book type were completed only on the instructional word set for each book for a potential range of scores from 0 to 12.

Visual analysis. The visual analysis for this investigation consisted of examination of the characteristics of trend and level changes in the data. The trend indicates the direction that the data are going and refers to the steepness of the slope. It permits a reliable demonstration of experimental control. A change in level refers to the magnitude of change according to the dependent variable. Because one data point existed for the baseline and maintenance conditions, level changes were only examined within the experimental condition. In order to examine visually the experimental effects, two sets of data points were connected. First, all the data points for the instructional word sets were connected, as well as the data points for the control words set. Second, all the data points measuring the effects of Book A were connected, as well as, all the data points measuring the effects of Book B. If, over time these two series of points separated, then two conclusions could be reached: (a) the robust vocabulary instruction was

effective in teaching novel vocabulary words and (b) one book type was more effective in facilitating acquisition/retention of targeted words.

       Statistical analysis*.* The Wilcoxon matched-pairs signed-ranks test was used for statistical analyses of the data. This statistical model has been suggested as an appropriate non-parametric test for analyses of small *n* designs when repeated measures are used (Kratochwill, 1978; Todman & Dugard, 2001). The test takes into account the magnitude of the difference between rankings of scores. If the null hypothesis of no difference between the scores is used, we would expect the sum of the positive differences to equal the sum of the negative differences (Williams & Monge, 2001). A value of probability indicates the probability of obtaining a particular discrepancy between the sums of the positive and negative ranks. To characterize the magnitude of treatment effects, the correlational coefficient, Spearman's rho (r_s) is reported, for which .1 is small, .3 is medium, and .5 is large as indicated by Cohen (1988).

       Process growth analysis. In order to capture the process by which participants acquired understanding of the target words, analyses tracing children's stage of word knowledge at each probe were made to determine vocabulary growth more specifically. The process analyses used for this investigation represent a modified version of those identified by Eller, Pappas, and Brown (1988). The four types of patterns identified were *probable, tentative, stable,* and *no apparent* vocabulary growth. *Probable* growth was defined operationally as words that showed no knowledge of the word initially, but with instructional exposure, enough knowledge was acquired to permit its correct use in sentence (i.e., Stage 2). *Tentative* vocabulary growth was defined operationally as words that moved to a higher stage of word knowledge from one probe to another, but then changed to a lower stage on a subsequent probe, or vice versa. *Stable* pattern of growth was defined as words that demonstrated full concept knowledge (i.e., Stage 4) with no regression on subsequent probes. *No apparent* vocabulary growth was defined as words in which no knowledge was demonstrated across probes. It also consisted of words in which a correct sentence was provided on the first probe, but then regression occurred on subsequent probes or the stage of word knowledge did not move beyond Stage 2.

Table 3.1 Scoring

Criteria for Pretest and Probes of Expressive Word Knowledge

Level of word knowledge	Score	Criteria
Stage 1 No knowledge. Never heard the word.	0	Word is unknown or an incorrect definition is given. *(e.g., <u>Ripped</u> means good)*
Stage 2 General sense of word. Heard the word, but does not know the meaning.	1	Child is familiar with the word but <u>cannot</u> define it. Word is only given in a sentence *(e.g., I <u>ripped</u> my dress).*
Stage 3 Partial concept knowledge. Recognizes the word in a specific context.	2	An example based on a specific context is given (*e.g., a piece of paper that is torn)* **or** a synonym is given *(e.g., something cut)*
Stage 4 Full concept knowledge. Knows the word well.	3	A complete definition *(e.g., <u>Ripped</u> means torn apart or not together anymore like a piece of paper).*

Table 3.2

Scoring Examples

Word	Stage 1	Stage 2	Stage3	Stage 4
carry	no response or incorrect answer	I carry my backpack everyday	To take or move something somewhere	To hold something while moving or it is being moved
prune	no response or incorrect answer	I don't like prunes	A fruit you eat. We pruned the tree (something eaten or cut)	A dried plum; to cut off or cut out parts of something
crackle	no response or incorrect answer	Snap, crackle, pop is the name of a cereal	The sound a fire makes (sound heard)	A sharp, snapping sound like the sound a fire makes.
visit	no response or incorrect answer	My mom said it is nice to visit people	When I go to my grandma's house on the weekends (act of doing)	To go or come to see; to stay with as a guest
collect	no response or incorrect answer	I collect rocks	To get a lot of things	To gather together; or to get payment
focus	no response or incorrect answer	You have to focus on your school work	Watch what you're doing	To pay attention to; to make clear like focusing a camera
buzz	no response or incorrect answer	The bee buzzed in my ear	The sound a bee makes (recognition that it is a	A low humming sound, like a bee makes; or to fly an airplane low

			sound)	over something
snuggle	no response or incorrect answer	You are warm and snuggly under a blanket	You hug something or someone	To lie close to; hold closely; to show love
twinkle	no response or incorrect answer	twinkle, twinkle, little star	A shining or flashing star	A flash of light or brightness
listen	no response or incorrect answer	I try to listen in class	To hear something someone is saying	To try to hear or pay attention in order to hear
notice	no response or incorrect answer	I got a detention notice. I noticed the boy.	To look at or see something	See or observe; written announcement
sizzle	no response or incorrect answer	Something is sizzling	The sound you hear when cooking	A hissing or sputtering sound
call	no response or incorrect answer	My friends call me	Something you do on the phone or with the phone; to yell out something or to someone	To telephone; to speak, shout, or say something in a loud voice
flutter	no response or incorrect answer	Flying. A butterfly flutters.	The way a butterfly moves. A feeling when someone is happy	To move or fly with quick, light flapping movements; excitement or confusion
trifle	no response or incorrect answer	That is trifle. My mom said I shouldn't trifle	To mess with causing to break	Small in amount or importance; to treat in a

		with the camera		careless way
sweep	no response or incorrect answer	One of my chores is to sweep	To sweep the floor <u>with</u> a broom	To clean with a broom or brush
combine	no response or incorrect answer	In class we combine numbers. Mix up	To take one thing and <u>add</u> it to another. Put things <u>together</u>.	To join together or unit
skid	no response or incorrect answer	The car went into a skid.	To slide or slip on something	To slide or slip out of control or sideways

Table 3.3

Participants' Assessment Scores

	TONI3			MVPT3			EOWPVT3			ROWPVT3			WORD2			PRE TEST	
	SS	*PR*	*SD*	*SS*	*PR*	*SD*	*SS*	*PR*	*SD*	*SS*	*PR*	*SD*	*SS*	*PR*	*SD*	*M*	*SD*
	100	**50**	**15**	**100**	**50**	**15**	**100**	**50**	**15**	**100**	**50**	**15**	**100**	**50**	**15**	**4**	**2.74**
Roy	90	25	-.66	100	40	0	80	9	-1.33	93	32	-.46	81	10	-1.26	6	+.73
Roger	95	37	-.33	93	25	-.46	84	16	-1.06	86	18	-.93	73	4	-1.80	4	0
Kevin	115	84	+1.00	99	47	-.06	70	2	-2.00	96	39	-.26	78	7	-1.46	0	-2.74
Angela	103	58	+.20	90	23	-.66	79	8	-1.40	89	23	-.73	82	11	-1.20	3	-.36
Cassandra	107	68	+.46	110	75	+.66	78	7	-1.46	94	34	-.40	78	7	-1.46	7	+1.09

Note. TONI3 – *Test of Nonverbal Intelligence – Third Edition,* MVPT3 – *Motor Visual Perceptual Test – Third Edition,*

 EOWPVT3 – *Expressive One-Word Picture Vocabulary Test – Third Edition,* ROWPVT3 – *Receptive One-Word Picture Vocabulary*

Test – Third Edition, WORD2 – *The Word Test – Second Edition (Elementary)*

SS = Standard Score, *PR* = Percentile Rank, *SD* = Standard Deviation, *M* = Mean

Table 3.4

Content Analysis of Storybooks

Title/Characters	Fry Readability	No. of Pages	No. of Words	Pages with Print	Lexical Density	Informational Ideas
Miss Viola and Uncle Lee[a]	3rd grade	28	580	19	3.10	1.23
Sophie's Knapsack[b]	3rd grade	30	480	15	3.60	1.31

[a] African American book. [b] Caucasian book.

Table 3.5

Visual Content Analysis

			Ethnicity		Age		Gender		
Title	Artistic Style	No. of Illustrations	African American	White	Children	Adults	Male	Female	Other Visual Features
Miss Viola and Uncle Ed Lee	Watercolor	27	3	0	1	2	2	1	First page in book depicts main character telling a story to children in classroom setting.
Sophie's Knapsack	Watercolor	22	0	3	2	1	1	2	

Table 3.6

Order of Book Reading and Target Word Presentation

Activity	Book	Target Words
Pretest		
Week 1		
Instructional Session 1	A	combine, focus, notice
Instructional Session 2	B	flutter, collect, snuggle
Probe 1		
Week 2		
Instructional Session 3	B	flutter, collect, snuggle
Instructional Session 4	A	combine, focus, notice
Probe 2		
Week 3		
Instructional Session 5	A	combine, focus, notice
Instructional Session 6	B	flutter, collect, snuggle
Probe 3		
Week 4		
Instructional Session 7	A	combine, focus, notice
Instructional Session 8	B	flutter, collect, snuggle
Probe 4		
Week 6		
Posttest		

Book A – African American images. Book B – Caucasian images.

Table 3.7

Investigator References to Images During Reading

Book	No. of References to Images	Mean	Range
Book A	72	18	12 – 25
Book B	63	15.75	10 – 18

Note. Book A – African American images. Book B – Caucasian images.

Table 3.8

Investigator References to Images During Vocabulary Lesson

Book	No. of References to Images	Mean	Range
Book A	13	3.25	2 – 5
Book B	18	4.5	3 – 9

Note. Book A – African American images. Book B – Caucasian images

CHAPTER IV
RESULTS

The first goal of this investigation was to determine if children with vocabulary deficits learned new words using a robust vocabulary instructional technique. In reporting the results for the impact of robust vocabulary instruction, the data were examined in terms of participant performance on the instructional word set versus the control word set. The second aim was to determine the extent to which African American children learned and retained novel vocabulary words from different book types. To investigate the acquisition and retention of words from each book, only the instructional word set was analyzed. To determine the process of vocabulary growth more specifically, process analyses of the patterns of vocabulary growth are also provided for the instructional word set. Results are delineated by research question with the overall group outcome presented first followed by individual participant findings.

Impact of Robust Vocabulary Instruction

As anticipated, based on the results of the pilot study, participants had a general knowledge of targeted words and minimal or no knowledge of control words. Four of five participants were able to provide a correct sentence for half of the words in the instructional set while only two children were able to provide a correct sentence for at least one control word. At pretest, the mean group score for the instructional word set was 3.20 (SD = 1.92, range = 0 to 5.0) and .80 (SD = 1.30, range = 0 to 3.0) for the control word set.

Following implementation of robust vocabulary instruction, three participants improved their score on the first probe with an overall group mean score increasing to 4.60 (SD = .55), range = 4.0 to 5.0). As a group, participants continued to show an accelerating trend across the experimental condition with a mean score of 12.20 (SD = 2.59, range = 10.0 to 15.0) on the fourth probe. On this final experimental probe, all five participants had increased their instructional word score by at least four points (range = 4 to 15) over the first experimental probe. On the delayed posttest all five participants demonstrated scores above pretest performance with a mean posttest instructional score of 12.20 (SD = 2.68, range = 8.0 to 15.0).

Group performance on the control word set revealed a flat trend with some variability. The mean score at probe 1 was 1.20 (SD = 1.64, range = 0 to 3.0). Two children were able to

provide a correct sentence for one control word and one of these participants demonstrated partial concept knowledge of a second control word. At probe 4, group performance improved slightly with a mean score of 2.20 (SD = 1.92, range = 0 to 5.0). During this probe, four of five participants recognized at least one word in the control set. The group's mean posttest score was 1.60 (SD = 1.52, range = 0 to 4.0). Three of five participants were able to provide a correct sentence for at least one word in the control set, with one of the three showing partial concept knowledge of one control word. See Figure 4.1 for group performance on instructional and control word sets.

Graphed presentation of the group's total scores is presented in Figure 4.2. Wilcoxon signed-rank test analyses revealed significant differences between the group's total scores on the pretest (M = 4.0, SD = 2.74), range = 0 to 7 and the final probe in the experimental condition (M = 13.80, SD = 2.05), range = 12-16 (T = -2.023, p < .01). The results showed a large-sized effect for robust vocabulary instruction, attributable to large post-treatment differences for the instructional word set versus the control word set. Analyses also revealed no significant differences between total scores on probe 4 and the delayed posttest (T = -.18, p = .85), suggesting children retained knowledge of instructional words and demonstrated no knowledge of control words (see Figure 4.3). Table 4.1 presents the differences between the pretest and posttests and interpretation of effect-size estimates.

Participant 1: Roy. Roy earned a total word knowledge score of 6 on the pretest and a score of 12 on the posttest, resulting in a gain of 6 points. On the pretest he demonstrated recognition of 5 words in the instructional set and one word in the control set by using them correctly in a sentence. His performance within the experimental condition increased from a score of 4 to 10 for the instructional word set with improved scores also on the control word set, increasing from 0 to 4. As shown in Figure 4.4 he demonstrated an overall change in level and trend for words in the instructional set, but not the control set.

Examination of Table 4.2 showed that across probes, Roy demonstrated recognition of the instructional word set and no knowledge or minimal knowledge of words in the control set. On the first two experimental probes, his knowledge of words in the instructional set was identical to his pretest performance in which he demonstrated a general sense of words as indicated by their correct use in a sentence. At probe 3, his depth of knowledge for 4 words in the instructional set remained constant at a general recognition, however, he demonstrated partial

concept knowledge (i.e., Stage 3) for a fifth word in the set. On the final experimental probe Roy demonstrated a depth of knowledge beyond that of general recognition for 3 of 6 words in the instructional set, while the remaining words in the set were constant at Stage 2. At posttest, he maintained knowledge of 2 words beyond Stage 2 while 3 words remained at a general recognition stage.

Although Roy demonstrated a general recognition of 1 word in the control set at pretest, his performance on the first two experimental probes showed no knowledge of any words in the control set. At probe 3, he demonstrated Stage 2 knowledge of the same word in which he provided a correct sentence at pretest. On the final experimental probe he appeared to demonstrate an emerging recognition of 3 control words by providing sentences similar to their use in the story. For example, he responded, *"The rabbit skidded in front Sophie"*.   In the story the sentence read, *"A rabbit skidded across the path ahead of them and disappeared into the bushes"*. When prompted to provide more information about the word 'skidded', he shrugged his shoulders, suggesting recognition of the word, but an inability to define it (i.e., Stage 2). Posttest performance showed that Roy demonstrated Stage 3 knowledge of 1 control word and a general recognition of 2 other words in the set.

Participant 2: Roger. Roger's total word knowledge scores on the pre- and posttest were 4 and 13 respectively, resulting in a gain of 9 points. On the pretest, Roger demonstrated a general sense of three words in the instructional set and no knowledge of words in the control set. As shown in Figure 4.5, Roger's score on the instructional word set changed dramatically at probe 3 while his performance on the control word set revealed an atherapeutic (i.e., flat) trend. His scores on the instructional word set increased from 4 to 15 demonstrating an overall change in level and trend while his performance on the control word set remained relatively constant with scores ranging from 0 to 2.

Examination of Table 4.3 showed that across the first two experimental probes, Roger demonstrated recognition of words in the instructional set similar to his performance at pretest. However at probe 3, his depth of word knowledge increased for 4 of 6 instructional words. His performance on this probe showed partial concept knowledge of 3 words and full concept knowledge of one word as he was able to provide definitions for words based on a specific context. On the final experimental probe, Roger demonstrated Stage 4 knowledge of all but one

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word in the instructional set. For these 5 words he was able to provide a correct definition with a novel example demonstrating full concept knowledge. He was able to maintain his performance on the delayed posttest, demonstrating Stage 4 knowledge of 4 of 6 words in the instructional set. It should be noted that although he demonstrated Stage 4 knowledge of the word *focus* on the posttest, this word was at Stage 2 on a majority of the probes.

Analysis of Roger's performance on the control word set showed variable performance across the experimental condition. A probe 1 he demonstrated a general sense of 2 words by their correct use in sentences similar to the context in the story. However, at probe 2, he demonstrated no knowledge of any words in the control set. Examination of the table showed that probe 3, he again demonstrated a general recognition of 1 of the words in which he was able to provide a correct sentence at probe 1. On the final experimental probe he demonstrated partial concept knowledge of 1 word not known on any of the previous probes. Posttest performance showed that Roger demonstrated a general recognition of only 1 word in the control set.

Participant 3: Kevin. On the pretest, Kevin demonstrated no knowledge of words in either the instructional or control word sets yielding a total knowledge score of 0 and a posttest score of 16, resulting in a gain of 16 points. As shown in Figure 4.6, Kevin continued to show a therapeutic change in level and trend for words in the instructional set and a flat/atherapeutic trend for words in the control set. His score in the experimental condition ranged from 4 to 15 for instructional words and 0 to 1 for control words.

Examination of his performance in Table 4.4 showed an immediate change in depth of word knowledge at probe 1. He demonstrated recognition of 4 of 6 instructional words by using them correctly in novel sentences. On the second experimental probe he maintained Stage 2 knowledge of 3 words and demonstrated partial concept knowledge of the fourth. At probe 3, Kevin's word knowledge continued to develop as he demonstrated knowledge beyond a general recognition of 5 of 6 instructional words. On the final probe in the condition, he demonstrated full concept knowledge of 5 of 6 instructional words. Analysis of his performance showed that he was able to not only give a correct definition for all of the words he provided a synonym for 2 of them. His performance on the delayed posttest showed that he maintained knowledge of words beyond a general recognition for 5of 6 words and Stage 2 knowledge of the remaining word in the instructional set. Kevin's scores across probes represent the most consistent performance of all participants.

Examination of Kevin's performance on the control word set showed that he demonstrated no knowledge of any of the control words across the first three experimental probes. At probe 4, he demonstrated recognition of 1 word used in a sentence that was identical to the context of the story. When prompted for more information, he indicated *"You know twinkle like my eyes twinkle* (blinking his eyes)*"*. On the delayed posttest, he demonstrated Stage 2 knowledge of the same word in the control set.

Participant 4: Angela. On the pretest Angela earned a total word knowledge score of 3 and a posttest score of 16, resulting in a gain of 13 points. Her scores on the instructional word set increased from 5 to 10 and from 0 to 3 on the control word set. While an immediate change in score occurred on the first experimental probe, Figure 4.7 shows a degree of bounce in the data suggesting that her performance on the first three probes was variable and did not show an accelerating trend. On the final probe her performance improved to 10.

Analysis of her performance showed that upon implementation the intervention, Angela's word knowledge score improved as she was able to provide a sentence for 5 of 6 words in the instructional set. On the second experimental probe, she demonstrated Stage 2 knowledge of all 6 instructional words. Analysis of her performance on probe 3 showed that while Angela displayed recognition or partial concept knowledge of 3 words in the instructional set, she demonstrated no knowledge of the remaining 3 words, after displaying a general sense of the same words on the first two probes (see Table 4.5). Videotaped review of her performance showed that Angela did not attempt to respond to repeated prompts for at least half of the words this probe. However on the final experimental probe, Angela demonstrated full concept knowledge of 3 of 6 words in the instructional set; all 3 words were either in Stage 1 or 2 on the previous 3 probes. Angela's posttest performance showed a depth of knowledge beyond that of general recognition with full concept knowledge of 4words in the instructional set and partial concept of 1 word. She demonstrated no knowledge of the final word in the instructional set for which she had demonstrated full concept knowledge at probe 4.

Analysis of Angela's performance on the control word set showed that she demonstrated no knowledge control words across the first two experimental probes. At probe 3, she demonstrated a general recognition of 1 word by its correct use in a sentence. On the final experimental probe, Angela displayed a partial, contextual knowledge of the control word *crackle* relating it to a "popping sound from a fire" which was similar to the context in the story

that read, "The warm fire crackled lazily". She continued to demonstrate a partial contextual knowledge of this same word at posttest. No other words from the control word set was known.

Participant 5: Cassandra. On the pretest, Cassandra earned a total word knowledge score of 7 and a score of 12 on the posttest resulting in a mean gain of 5 points. Examination of Figure 4.8 showed a therapeutic change in trend and level for the instructional word set with scores improving from 5 to 11. Concurrently, her scores on the control word set showed a contratherapeutic trend with an initial score of 3 on the first probe and a score of 0 on the final probe in the condition. The divergence between scores on the instructional and control word sets across probes shows a reliable demonstration of experimental control.

Examination of Table 4.6 showed that Cassandra demonstrated a general sense of words in the instructional set across the first two experimental probes. However, she began to demonstrate full concept knowledge of 1 word at probe 2. By probe 3, she demonstrated full concept knowledge of 3 of 6 words in the instructional set while the remaining words regressed from a general recognition to no knowledge. On the final experimental probe, she demonstrated a depth of knowledge beyond a general recognition for 4 of 6 words. She showed full concept knowledge for 3 words and partial concept knowledge for 1 word with no knowledge of the remaining 2 words in the instructional set. On the delayed posttest Cassandra maintained full concept knowledge of 4 of 6 words.

Analysis of Cassandra's performance on the control word set showed an interesting trend. On the pretest and first experimental probe she demonstrated partial concept knowledge of 1 word in the control set as indicated by an example of the word based on a specific context. She also demonstrated general recognition of a second control word by its correct use in a sentence. However, on probes 2 and 3, she demonstrated no knowledge of the word in which she had shown partial concept knowledge, but continued to provide a correct sentence for the second control word. On the fourth experimental probe, Cassandra demonstrated no knowledge of any control words. This trend was also seen on the delayed posttest.

In summary, a reliable demonstration of experimental control was shown as words in the instructional set improved while words in the control set remained relatively stable across probes. Thus, differences between scores on the instructional word set versus the control word set were shown to be attributable to the implementation of robust vocabulary instruction. Using previous research as a guide (Brett et al., 1996; Penno et al., 2002), a meaningful gain in

vocabulary was characterized as an increase of at least four points from pretest to posttest. The data showed that all five participants had gains of this magnitude. Finally, examination of the word sets showed that four of the children demonstrated recognition of at least one control word not known at pretest. Analysis of participant responses showed that children used the control words in sentences that were similar to the context in the story. Only one participant (Angela) demonstrated knowledge of a control word beyond Stage 2.

Impact of Book Type

Participants had comparable word knowledge of words for each book before instruction. Four of five participants demonstrated a general recognition of at least 1 word from Book A and 2 words from Book B. The fifth participant had no knowledge of any words from either book. The mean score for the instructional words from Book A was 1.60 ($SD = 1.14$, range = 0 to 3.0) at pretest and 1.60 ($SD = .89$, range = 0 to 2.0) for words from Book B. Wilcoxon signed-rank test analyses revealed no significant differences in positive and negative mean ranks at pretest ($T = -.18$, $p = .85$). Examination of Figure 4.9 showed that as a group, a slight difference in acquisition of novel vocabulary based on book type existed during the intervention.

Although scores on words from Book B (Caucasian images) show a clear separation from words in Book A (African American images) at probe 3, group scores across the experimental condition were not significantly different statistically. On this probe all participants demonstrated partial concept knowledge of at least one word from Book A while 3 participants demonstrated full concept knowledge of at least one word. Four of 5 participants demonstrated partial concept knowledge of at least one word in Book B while 3 participants demonstrated full concept knowledge of at least one word.

At probe 4 all participants demonstrated full concept knowledge of at least one word in Book A while 3 participants demonstrated full concept knowledge of 2 of the 3 words in the set. The mean score for words from Book A on this probe was 5.60 ($SD = .55$, range = 5.0 to 6.0). Participants mean score for words from Book B was 6.80 ($SD = 2.30$, range = 4.0 to 9.0) with 4 of 5 participants demonstrated full concept knowledge of at least one word in the set. Two of the children demonstrated full concept knowledge of all three words in the set. Statistical analyses revealed no significant differences in positive and negative mean ranks ($T = -1.23$, $p = .22$) for scores at probe 4.

At posttest, analysis showed that while overall group scores on Book A declined

(*M* = 4.0, *SD* = 1.87), range = 2.0 to 7.0, four children maintained full concept knowledge of at least 1 of 3 words in the instructional set. The fifth participant did not demonstrate knowledge beyond a general recognition for any word in the set. In contrast, the overall group mean score for Book B improved (*M* = 8.0, *SD* = 1.22), range = 6.0 to 9.0. Three of five participants demonstrated full concept knowledge of all 3 instructional words in the set while one participant showed full concept knowledge of 2 words. The remaining participant demonstrated full concept knowledge of 1 of 3 words in the set. The differences in mean ranks at follow-up for the two books was statistically significant, *T* = -2.04, *p* < .05. These findings suggest that children demonstrated a greater depth of word knowledge and retention for words from Book B (Caucasian images) than for words from Book A (African American images). See Figure 4.10.

Participant 1: Roy. At pretest, Roy earned a score of 3 on Book A. While his score of 2 on the first probe was lower than his pretest performance, his final probe score improved to 5, demonstrating an overall change in level and trend within the experimental condition. On the delayed posttest his score for words from Book A declined to a score of 2. Roy's pretest and probe 1 scores for words from Book B were constant at a score of 2. His scores improved across the experimental condition with a final probe score of 6 which remained stable on the delayed posttest. Roy's acquisition and retention of target words can be seen in Figure 4.11.

Examination of Roy's depth of word knowledge for words in Book A (African American) showed that across probes, he generally demonstrated Stage 2 level of word knowledge for at least two words. Analysis of his performance showed he demonstrated recognition of words by using them correctly in sentences related to the context of the stories. Inspection of Table 4.2 showed that at probe 3 he displayed full concept knowledge of only one word – *focus*, which remained stable on the final experimental probe. The remaining two words in the set fluctuated between no knowledge and general recognition of the words. On the delayed posttest, he demonstrated Stage 2 knowledge of 2 words and no knowledge of the final word - *notice*.

Examination of his depth of word knowledge for words in Book B (Caucasian images) showed a similar trend as words from Book A. Across probes, Roy generally demonstrated Stage 2 level of word knowledge for at least two words in the set. At probe 4 his depth of knowledge improved to a partial, contextual bound knowledge (i.e., Stage 3) for *snuggle* and

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flutter. Results of the two-week delayed posttest showed partial knowledge of *collect* and full concept knowledge of *flutter*. He demonstrated a general recognition of the final word in the set.

Participant 2: Roger. Roger's scores on the pretest and first two probes in the experimental condition were constant at a score of 2 for words from Book A (African American images), with a score of 6 on the final probe in the experimental condition. Roger's score on the delayed posttest returned to near baseline at a score of 3. He demonstrated similar performance on the pretest and first probe in the experimental condition for words from Book B (Caucasian images) with a score of 2. His score in the experimental condition improved to 9 on probe 4 which remained constant on the delayed posttest. While an overall change in level and trend occurred for both book types, a clear separation existed between word sets, with higher scores shown on words from Book B than Book A. See Figure 4.12.

Examination of Roger's depth of knowledge for words in Book A showed that across the first two probes, his stage of word knowledge fluctuated between no knowledge (i.e., Stage 1) and recognition of words. However, at probe 3, he demonstrated partial concept knowledge of 1 word (*notice)*. On the final experimental probe, Roger demonstrated full concept knowledge of 2 words (*notice, combine)* and no knowledge of the third word in the set. At posttest, he demonstrated full concept knowledge of only 1 word *(focus)* and no knowledge of the remaining two words. His Stage 4 knowledge of the word *focus* at posttest was surprising given that across experimental probes, he either demonstrated no knowledge of the word or was only able to use it in a sentence (i.e., Stage 2).

Examination of his depth of knowledge for words in Book B showed that development of concept understanding was more stable than the trend seen for Book A. On the first experimental probe, Roger's knowledge of words was consistent with his performance on the pretest in which he demonstrated Stage 2 knowledge of 2 words in the set. On the second probe, he demonstrated a general recognition of a 3 words in the set. At probe 3, Roger's depth of knowledge improved for all three words with 1 one, *collect,* showing full concept knowledge, with a partial, context bound knowledge of the remaining two words. On the final experimental probe, he demonstrated full concept knowledge of all 3 words in the set. He maintained Stage 4 depth of knowledge for each word at posttest.

Participant 3: Kevin. On the pretest, Kevin earned a score of 0 for words from Book A. His scores improved from 2 to 6 across the experimental condition and continued to show improvement at follow-up with a delayed posttest score of 7. He also demonstrated no knowledge of words from Book B, yielding a pretest score of 0. His scores across the experimental condition improved 1 to 9 with a slight decline to a score of 8 on the posttest. Examination of Figure 4.13 showed a therapeutic change in level and accelerating trend for words from both books. Further inspection of the figure showed that Kevin's posttest score for words from Book B was slightly higher than his score from Book A with scores from both books remaining well above baseline performance.

Analysis of Kevin's depth of knowledge showed an immediate change for all three words from Book A. At pretest, he had no knowledge of any words in the set; however, at probe 1 he demonstrated Stage 2 depth of knowledge for all three words. Analysis of his performance showed that he used the words in a context similar to their use in the week's vocabulary lesson. For example, he responded, *"I notice something in this room that is black – the mirror!"* During one of the week's activities, participants were asked if they *"noticed anything in the room that was green"*. On the second experimental probe, he continued to demonstrate a general recognition of 2 words in the set; however he showed no knowledge of the third word, *notice*, across subsequent experimental probes. At probe 3 the remaining two words, *combine* and *focus,* progressed to Stage 4 with full concept knowledge also demonstrated on probe 4. On the delayed posttest he maintained full concept knowledge of *combine*, while also demonstrating full concept knowledge of *notice* - which he had demonstrated no knowledge on three experimental probes. He showed Stage 2 knowledge of the final word in the set.

Examination of his depth of knowledge for words from Book B showed that on the first experimental probe, Kevin demonstrated a general recognition of only one word in the set (*collect*) while he showed no knowledge of the remaining two words. At probe 2, he demonstrated partial concept knowledge of *collect* and Stage 2 knowledge of *snuggle*. On the third experimental probe, he demonstrated a partial, context bound knowledge of 2 words while demonstrating full concept knowledge of the *flutter*. At probe 4, Kevin demonstrated full concept knowledge of all three words in the instructional set. Posttest data showed that he maintained Stage 4 knowledge for two words, *collect* and *snuggle* while demonstrating partial concept knowledge for the final word (*flutter*).

Participant 4: Angela. Angela earned a pretest score of 1 for words from Book A (African American images). Her performance across the experimental condition showed an overall change in level and trend with a final probe score of 6. Her performance on the delayed posttest for words from Book A remained constant at a score of 6. Angela's pretest score for words from Book B yielded a score of 2. Her scores ranged from 2 to 5 with a final score of 4 in the experimental condition. Her score at follow-up improved to 8 for words from Book B. As seen in the Figure 4.14, posttest performance for words from each book remained above baseline performance with a higher score seen for words from Book B.

Examination of her depth of knowledge for words from Book A showed an immediate change in knowledge for two words (*combine, notice)* as she was able to use the words correctly in a sentence. She maintained Stage 2 knowledge of all three words in the set on the second experimental probe. The dramatic change in score seen at probe 3 was the result of Angela's display of no knowledge for all three instructional words in this set. As indicated previously, videotaped review of her performance showed that she did not attempt to respond to any of the instructional words from this book. Repeated prompts to elicit information about the words met with a shoulder shrug or verbal "I don't know that one". On the final experimental probe, Angela demonstrated full concept knowledge of 2 of the 3 words *(combine, notice)*, which was a considerable change in stage of knowledge over the first three probes in the condition for these two words. No knowledge was demonstrated of the remaining word in the set *(focus)*. Analysis of her posttest performance showed a similar trend, but for different words. She demonstrated full concept knowledge of 2 words *(notice, focus)* and no knowledge of the third word in the set *(combine)*. Only *notice* was consistent with her stage of knowledge demonstrated on the final experimental probe.

Analysis of Angela's depth of knowledge at probe 1 for words from Book B showed that her knowledge of words was consistent with pretest performance in which she demonstrated Stage 2 knowledge of 2 of 3 words. On probe 2, she demonstrated general recognition of all three words in the set. Angela's depth of knowledge improved to partial concept understanding for 2 words, *snuggle* and *flutter* at probe 3. On the final experimental probe, her stage of knowledge for *collect* had progressed to full concept understanding while her knowledge of *flutter* regressed to a partial, contextual bound knowledge. Stage 2 knowledge was demonstrated

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for the final word in the set.   Results of the delayed posttest showed full concept knowledge of 2 words, *snuggle* and *collect* and partial concept knowledge of the third word in the set *(flutter)*.

     Participant 5: Cassandra. On the pretest, Cassandra earned a score of 2 on words from Book A. Her scores across the experimental condition increased from 2 to 5 on the final probe in the condition. Her posttest score on words from Book A declined to near baseline performance to a score of 3. Cassandra's pretest score for words from Book B was 2. In the experimental condition her scores improved from 3 to 6. Examination of Figure 4.15 showed her score of 9 on the delayed posttest was well above her final probe score in experimental condition.

     Examination of Cassandra's depth of knowledge for words from Book A showed performance that was consistent with her pretest knowledge in which she demonstrated recognition of words 2 of 3 words. At probe 2, she demonstrated Stage 2 knowledge of all three words in the instructional set. On the third experimental probe, she demonstrated no knowledge of 2 words, while showing full concept knowledge of the third word (*focus*). Analysis of her performance on this probe showed that she did not respond to prompts for 2 of the words in this set.   At probe 4, she demonstrated full concept knowledge of *notice* and partial concept knowledge of *focus* and no knowledge of *combine*. On the delayed posttest, she demonstrated full concept understanding of 1 word, *notice* and no knowledge of the remaining two words in the set.

     Examination of Cassandra's depth of knowledge for words from Book B showed a general recognition of words at probe 1. Analysis of her performance showed that she used of both novel sentences and sentences that occurred within the context of the story. At probe 2, she began to demonstrate partial concept knowledge of 1 word (*collect*), while the remaining words in the set were consistent at Stage 2. However, on the third and fourth experimental probes, Cassandra demonstrated full concept knowledge of two words, *snuggle* and *flutter*, and no knowledge of *collect*. On the delayed posttest, she demonstrated full concept knowledge of all three words in the set.

     In summary, with the exception of two participants (Cassandra and Kevin), a depth of knowledge for words beyond general recognition began to emerge for words from each book at probe 3. Examination of the results showed that across probes, participants demonstrated a greater depth of knowledge for words from Book B (Caucasian images) than for words from

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Book A. These findings remained stable at follow-up. It was predicted that given a sound method of vocabulary instruction, African American children would retain a deeper knowledge of words from Book A. The results failed to support this prediction. While posttest results showed that 4 of 5 participants demonstrated knowledge beyond Stage 2 for at least one word from Book A, all five participants demonstrated knowledge beyond Stage 2 for two words from Book B. Two of the participants, Catherine and Roger, demonstrated full concept knowledge of all three words from Book B (Caucasian images) while 4 of 5 participants demonstrated no knowledge of at least on word from Book A at follow-up.

Process Growth Analysis

If no knowledge of a word was exhibited initially, but a general sense of the word was demonstrated by its correct use in a sentence on a subsequent probe, an instance of probable pattern of growth was noted. Probable growth occurred in 6 instances accounting for 20% of the vocabulary development observed. The most predominant sub-pattern was that in which participants showed no knowledge of the word on the first and second probes, but the word was used accurately in a sentence at probe 3.

The second type of growth pattern emerging from the process analysis was tentative vocabulary growth. Total instances of this type were 12 which accounted for 40% of the vocabulary development observed. These patterns occurred when a particular instructional word moved to a higher stage of word knowledge from one probe to another, but then changed to a lower stage on a subsequent probe, or vice versa. Thus a tentative, but not consistent, increase in vocabulary growth was seen across the four experimental probes for these instances.

The third pattern that emerged was stable concept understanding. This pattern included instances where full concept knowledge of a word was demonstrated and remained consistent across subsequent probes. Five instances of this pattern were found which accounted for 17% of the vocabulary growth observed.

The fourth pattern displayed involved words where no apparent growth was observed. This pattern included instances where a word was used in a sentence correctly on the first probe, but then regression occurred on subsequent probes. It also consisted of words in which the stage of word knowledge did not move beyond a general recognition of the word across probes. The total instances indicating no apparent vocabulary growth was 7 (23%).

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Participant 1: Roy. Examination of Roy's performance across probes showed that he demonstrated either no apparent growth or probable growth patterns of the instructional words. His process of growth was relatively constant. Three words: *notice, combine,* and *collect* demonstrated no apparent growth across probes in the experimental condition. The remaining three words: *focus, flutter*, and *snuggle* demonstrated a probable growth pattern. Further inspection of his performance showed that overall his process of growth did not move beyond a general recognition of the instructional word set.

Participant 2: Roger. Examination of Roger's performance showed that a 4 of 6 instructional words demonstrated a tentative growth pattern. Only one word, *focus,* showed evidence of no apparent growth. The remaining word, *combine*, demonstrated a probable growth pattern. On this word, he demonstrated either no knowledge or recognition across the first three probes, with full concept knowledge at probe 4. Overall, his performance showed an increased, but growing understanding of words across the experimental condition. However, with posttest performance considered, he demonstrated stable concept understanding of half of the words in the instructional set.

Participant 3: Kevin. Examination of Kevin's performance revealed a pattern of stable concept understanding for 3 of 6 words. He demonstrated a tentative growth pattern for two words *(collect* and *snuggle)* and no apparent growth for one word – *notice*. Examination of his performance showed that he demonstrated no knowledge of *notice* on the final 3 probes in the experimental condition. Overall, Kevin demonstrated the most consistent pattern of growth in novel word learning among the participants.

Participant 4: Angela. Though dissimilar in the specific words for each pattern, Angela's process of growth was the same as Roger's. Angela demonstrated a tentative growth pattern of 4 of 6 words in the instructional set. Only one word, *focus,* showed evidence of no apparent growth. The remaining word, *collect*, showed a probable growth pattern. On this word, she demonstrated a general recognition of the word across the first three probes, with full concept knowledge at probe 4. Considering her posttest performance, she demonstrated a pattern of stable concept understanding for 2 of 6 words.

Participant 5: Cassandra. Examination of Cassandra's performance revealed a pattern of stable concept understanding for 2 of 6 words. She demonstrated a tentative growth pattern for two words *(collect* and *focus)*. She also demonstrated a probable growth pattern for the word

notice and no apparent growth for the word *combine*. Examination of her performance showed that across the first two probes, she displayed recognition of the word *combine* but showed regression on subsequent probes.

In summary, the results showed that the principal type of vocabulary development was a tentative growth pattern. On the first two probes in the experimental condition participants did not demonstrate knowledge of instructional words beyond Stage 2, however, by probe 3 most participants demonstrated a partial context bound knowledge of instructional words indicative of a probable pattern of growth. The results showed that children began to develop more complete, but inconsistent, knowledge of word meanings between probes 3 and 4, demonstrating a tentative pattern of growth. Overall, these findings suggest that vocabulary development is a constructive process whereby instructional exposure to novel words improves learning.

Table 4.1

Group comparison of pretest and posttest differences

	Pretest	Posttest	Posttest Difference	Interpretation
N = 5			(r_s)	
Total Word Knowledge Score	M = 4.00 (SD = 2.74)	M = 13.80 (SD = 2.05)	-.94	Large effect
Instructional Word Set	M = 3.20 (SD = 1.92)	M = 12.20 (SD = 2.68)	-1.00	Large effect
Control Word Set	M = .80 (SD = 1.30)	M = 1.60 (SD = 1.51)	-.22*	No effect

* $p > .05$

Table 4.2

Roy's Stage of Word Knowledge Across Probes

	Pretest		Probe 1		Probe 2		Probe 3		Probe 4		Posttest	
	Book A	**Book B**	**Book A**	**Book B**	**Book A**	**Book B**	**Book A**	**Book B**	**Book A**	**Book B**	**Book A**	**Book B**
Stage 1	prune trifle	**flutter** crackle sizzle skid	prune trifle twinkle	**flutter** crackle sizzle skid	**combine** prune trifle twinkle	**flutter** crackle sizzle skid	**combine** prune trifle	crackle sizzle skid	prune trifle		**combine** prune trifle	
Stage 2	**notice combine focus** twinkle	**snuggle collect**	**notice combine focus**	**snuggle collect**	**notice focus**	**snuggle collect**	**notice** twinkle	**flutter** snuggle collect	**notice combine** twinkle	**collect** crackle sizzle skid	**focus notice** twinkle	**flutter** sizzle skid
Stage 3							**focus**			**snuggle flutter**		**collect** crackle
Stage 4									**focus**			**snuggle**

Note. Bold represents target word. Underline represents control word

Table 4.3

Roger's Stage of Word Knowledge Across Probes

	Pretest		Probe 1		Probe 2		Probe 3		Probe 4		Posttest	
	Book A	Book B	Book A	Book B	Book A	Book B	Book A	Book B	Book A	Book B	Book A	Book B
Stage 1	notice prune trifle twinkle	flutter crackle sizzle skid	combine prune trifle	flutter crackle sizzle	combine focus prune trifle twinkle	crackle sizzle skid	combine prune trifle	crackle sizzle skid	focus prune trifle twinkle	crackle skid	notice combine crackle sizzle skid	prune trifle twinkle
Stage 2	focus combine	snuggle collect	notice focus twinkle	snuggle collect skid	notice	snuggle collect flutter	focus twinkle				twinkle	
Stage 3							notice	snuggle flutter		sizzle		
Stage 4							collect		notice combine	snuggle collect flutter	focus	snuggle collect flutter

Note. Bold represents target word. Underline represents control word

Table 4.4

Kevin's Stage of Word Knowledge Across Probes

	Pretest		Probe 1		Probe 2		Probe 3		Probe 4		Posttest	
	Book A	Book B	Book A	Book B	Book A	Book B	Book A	Book B	Book A	Book B	Book A	Book B
Stage 1	**notice** **combine** **focus** prune twinkle trifle	**collect** **snuggle** **flutter** crackle sizzle skid	prune twinkle trifle	**snuggle** **flutter** crackle sizzle skid	**notice** prune twinkle trifle	**flutter** crackle sizzle skid	**notice** prune twinkle trifle	crackle sizzle skid	**notice** prune trifle	crackle sizzle skid	prune trifle	crackle sizzle skid
Stage 2			**notice** **combine** **focus**	**collect**	**combine** **focus**	**snuggle**			twinkle		**focus** twinkle	
Stage 3						**collect**		**collect** **snuggle**				**flutter**
Stage 4							**combine** **focus**	**flutter**	**combine** **focus**	**collect** **snuggle** **flutter**	**combine** **notice**	**collect** **snuggle**

Note. Bold represents target word. Underline represents control word

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Table 4.5

Angela's Stage of Word Knowledge Across Probes

	Pretest		Probe 1		Probe 2		Probe 3		Probe 4		Posttest	
	Book A	**Book B**	**Book A**	**Book B**	**Book A**	**Book B**	**Book A**	**Book B**	**Book A**	**Book B**	**Book A**	**Book B**
Stage 1	**combine** **notice** prune twinkle trifle	**flutter** crackle sizzle skid	prune twinkle trifle	**flutter** crackle sizzle skid	prune twinkle trifle	crackle sizzle skid	**combine** **notice** **focus** prune trifle		**focus** prune trifle	**flutter** skid sizzle	**combine** prune twinkle trifle	sizzle skid
Stage 2	**focus**	**collect** **snuggle**	**combine** **notice** **focus**	**snuggle** **collect**	**combine** **notice** **focus**	**snuggle** **collect** **flutter**	twinkle	**collect**	twinkle	**snuggle**		
Stage 3								**snuggle** **flutter**		crackle		**flutter** crackle
Stage 4									**combine** **notice**	**collect**	**notice** **focus**	**collect** **snuggle**

Note. Bold represents target word. Underline represents control word

Table 4.6

Cassandra's Stage of Word Knowledge Across Probes

	Pretest		Probe 1		Probe 2		Probe 3		Probe 4		Posttest	
	Book A	Book B	Book A	Book B	Book A	Book B	Book A	Book B	Book A	Book B	Book A	Book B
Stage 1	combine prune trifle	flutter crackle sizzle	combine prune trifle	crackle sizzle	prune trifle	crackle sizzle skid	combine notice prune trifle	collect crackle sizzle skid	combine prune twinkle trifle	collect crackle sizzle skid	focus combine prune twinkle trifle	crackle sizzle skid
Stage 2	notice focus twinkle	collect snuggle skid	notice focus twinkle	collect snuggle flutter skid	combine notice focus twinkle	snuggle flutter	twinkle					
Stage 3							focus		focus			
Stage 4						collect		snuggle flutter	notice	snuggle flutter	notice	snuggle collect flutter

Note. Bold represents target word. Underline represents control word.

Figure 4.1

Group Mean Scores Across Probes

Group Performance on Word Sets

Legend: △ Instructional Word Set   ■ Control Word Set
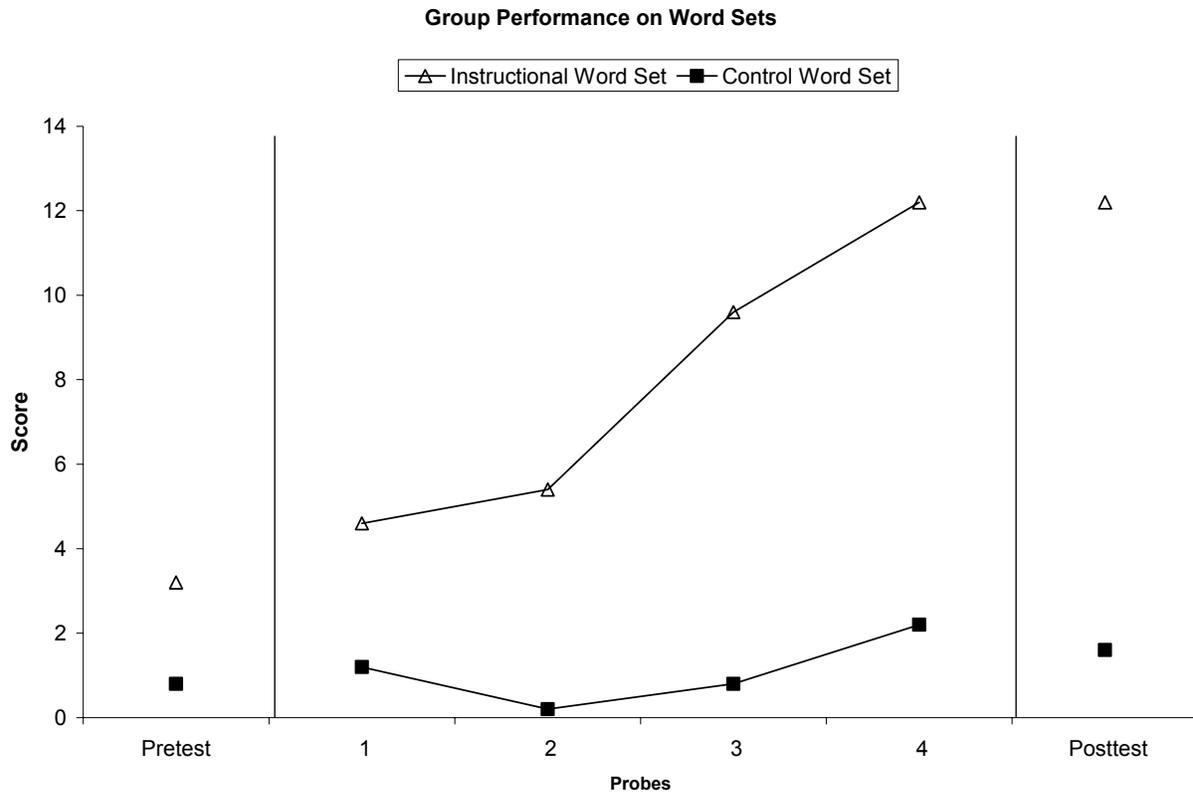
Figure 4.2

Group Total Word Knowledge Scores Across Probes

Group Mean Total Scores
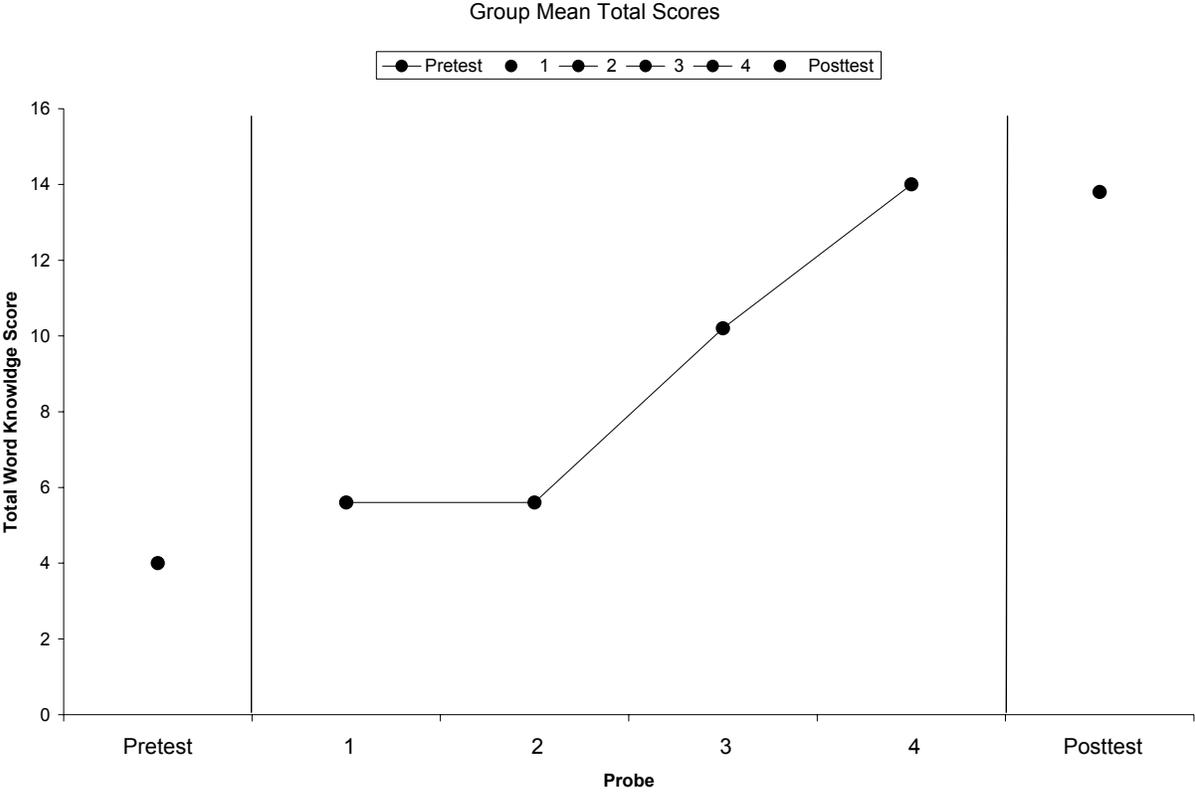
Figure 4.3

Number of Words at Stages Three and Four for Instructional and Control Word Sets

Partial or Full Concept Knowledge
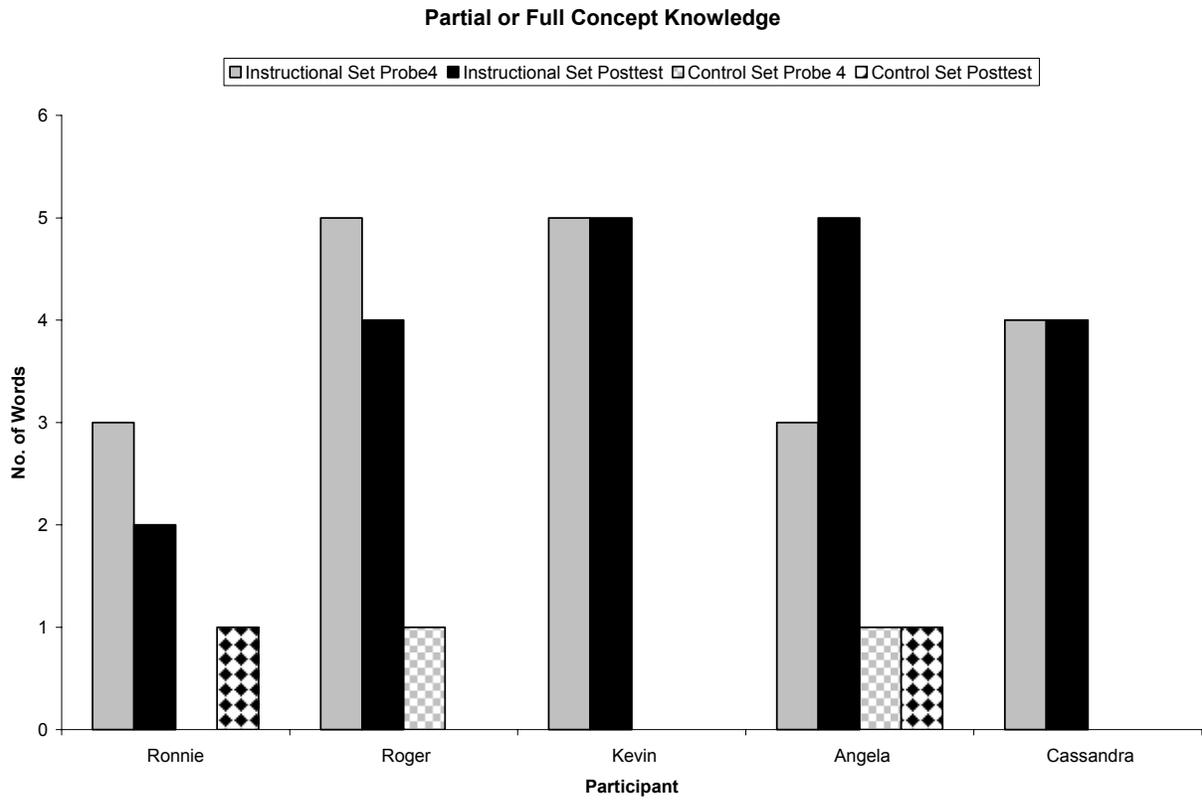
Figure 4.4

Acquisition of Instructional vs. Control Words for Roy.
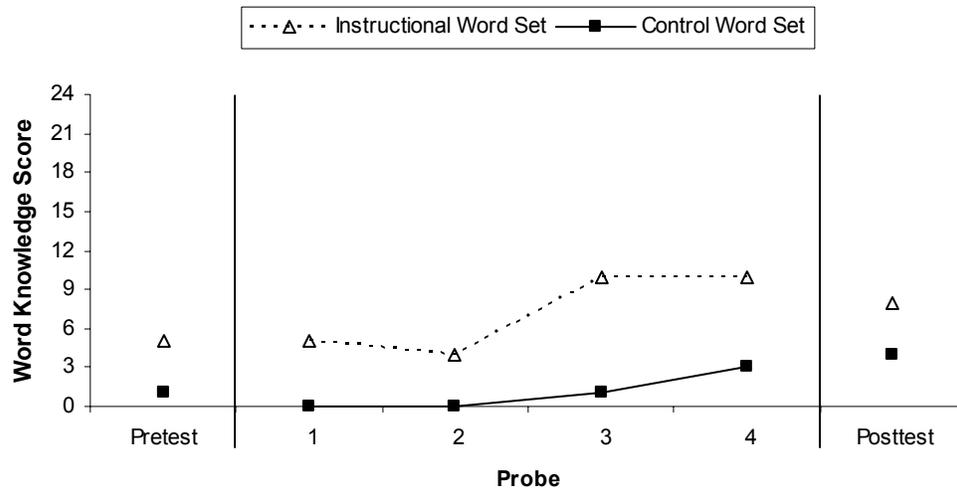
Figure 4.5

Acquisition of Instructional vs. Control Words for Roger.
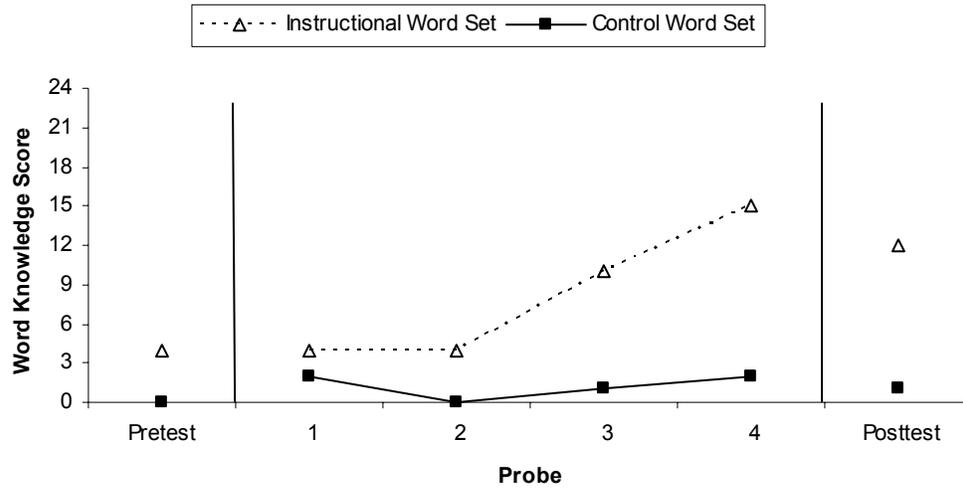
Figure 4.6

Acquisition of Instructional vs. Control Words for Kevin.
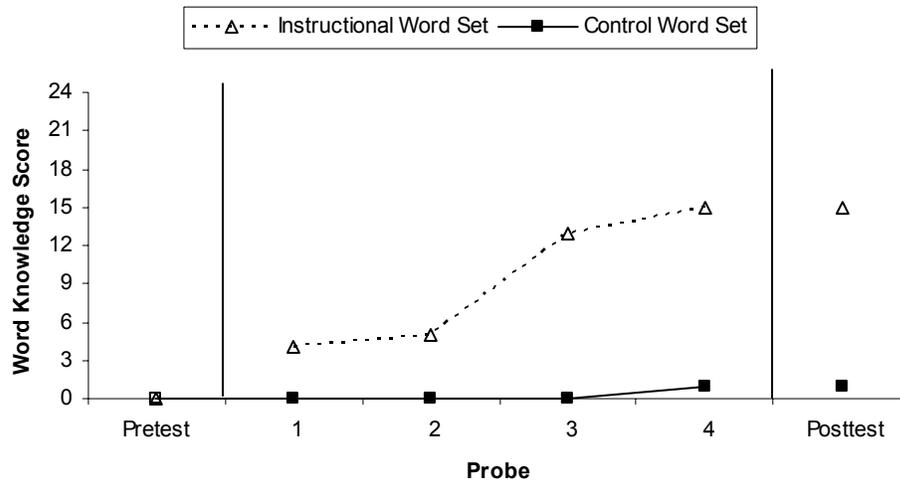
Figure 4.7

Acquisition of Instructional vs. Control Words for Angela.
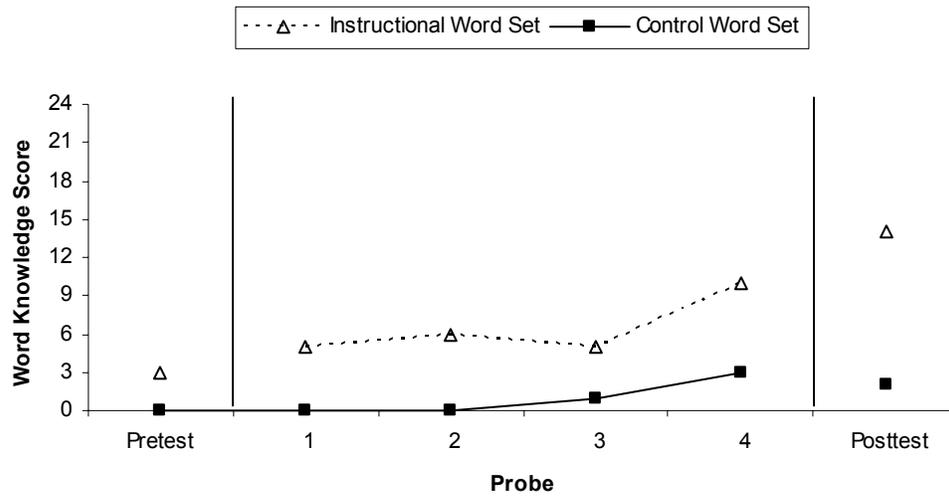
Figure 4.8

Acquisition of Instructional vs. Control Words for Cassandra.
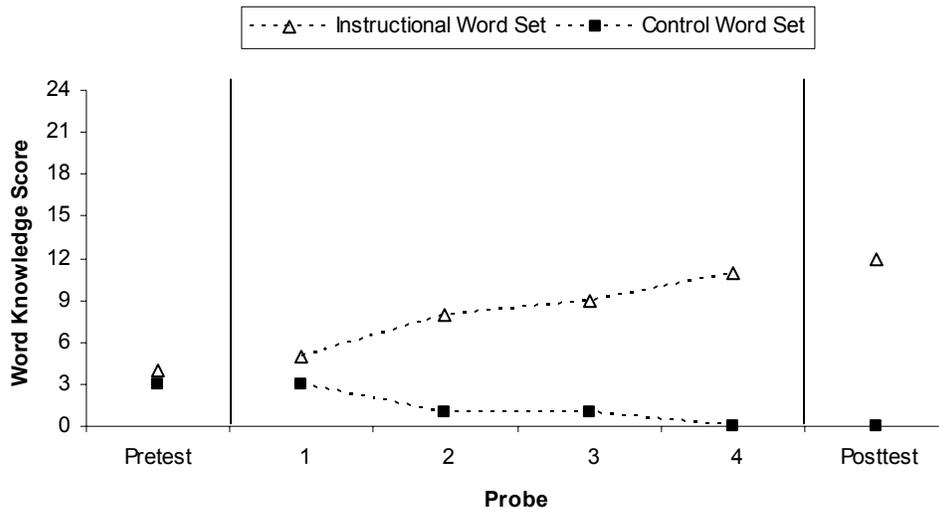
Figure 4.9

Mean Group Scores for Words from Each Book

Group Acquisition of Words for Each Book
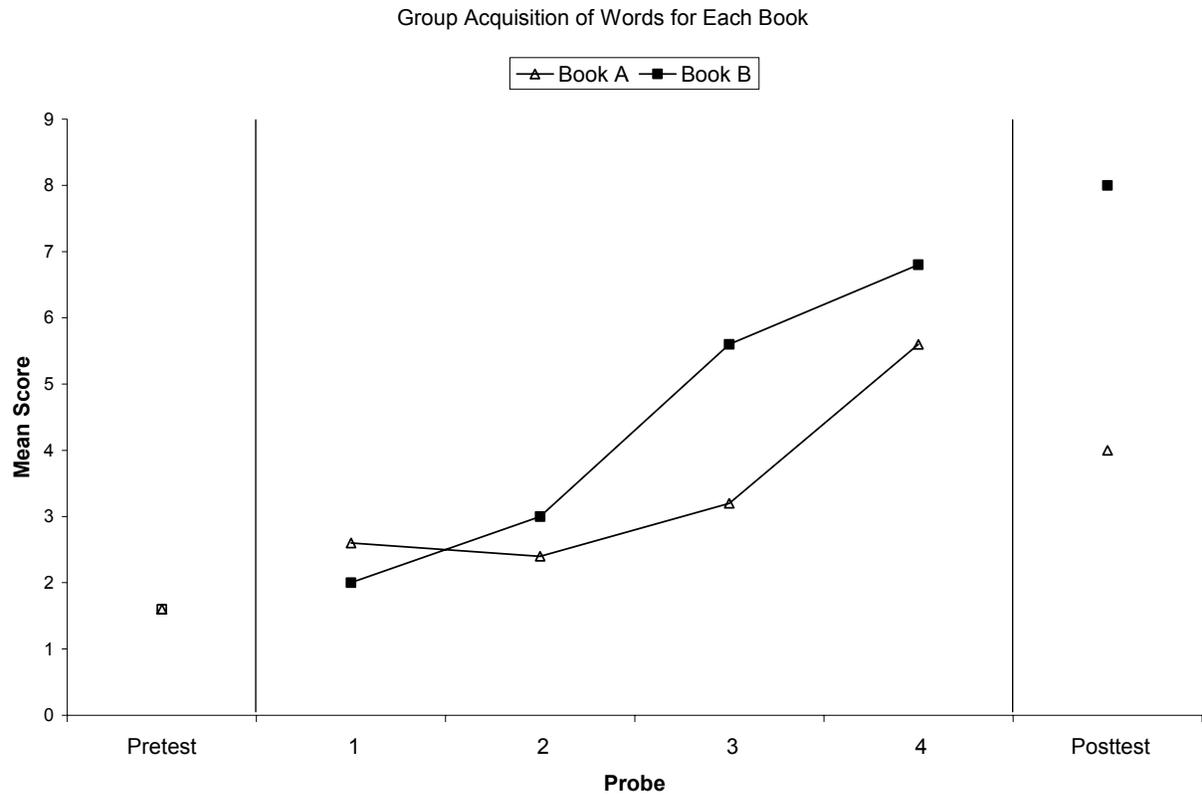
Figure 4.10

Number of Words for Each Book Showing Partial or Full Concept Knowledge at Posttest.

Partial or Full Concept Knowledge at Posttest
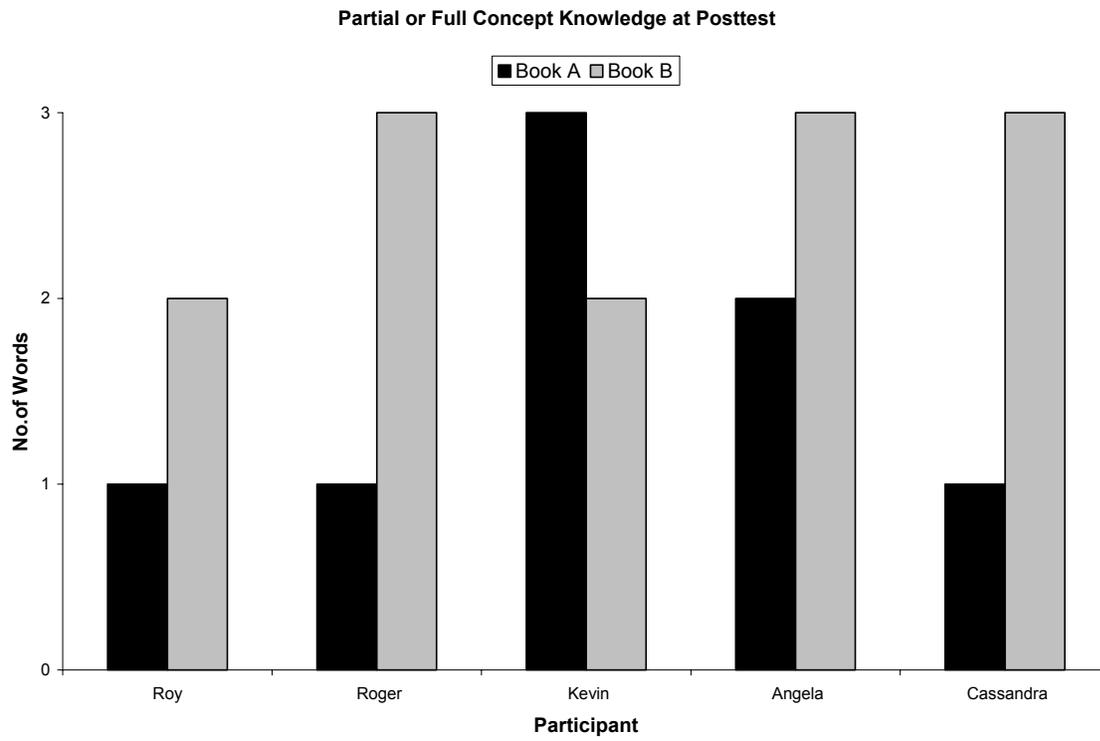
Figure 4.11

Acquisition and Retention of Target Words for Each Book for Roy
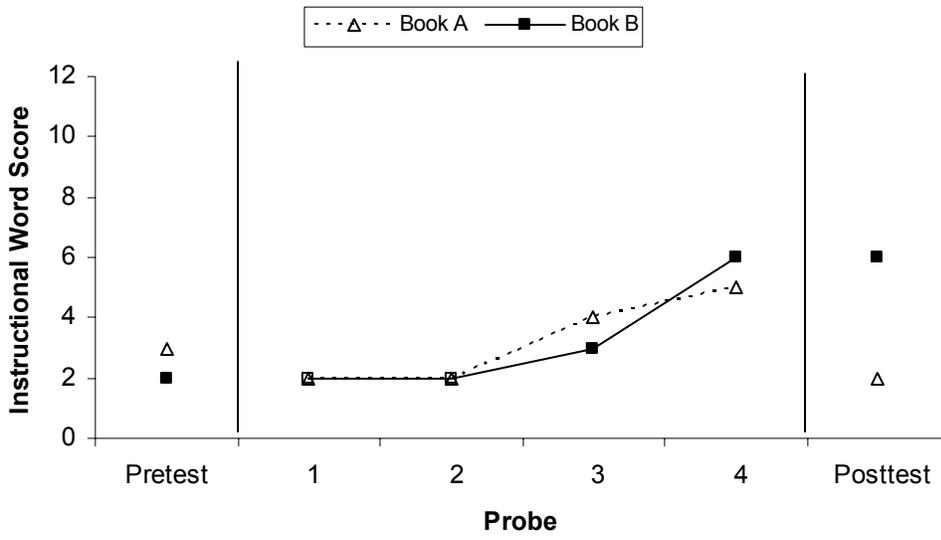
Figure 4.12

Acquisition and Retention of Target Words for Each Book for Roger
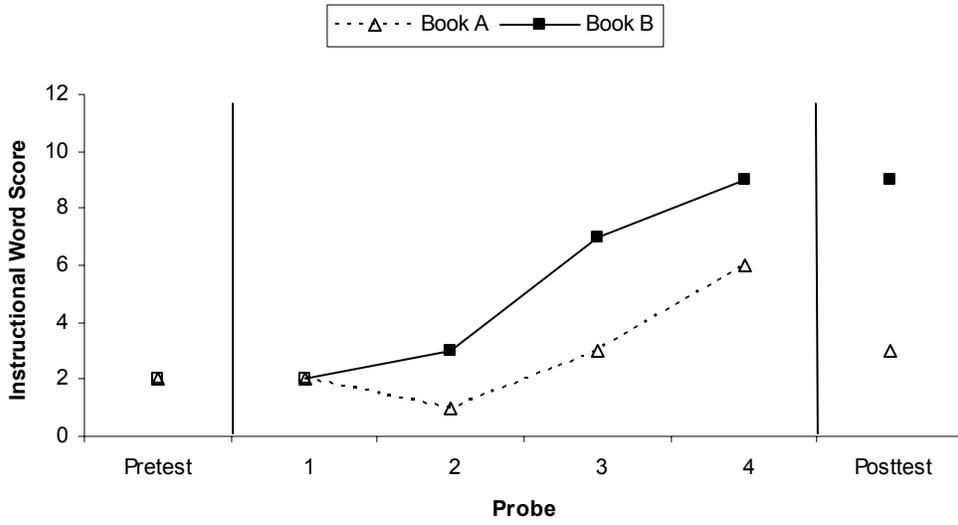
Figure 4.13

Acquisition and Retention of Target Words for Each Book for Kevin.
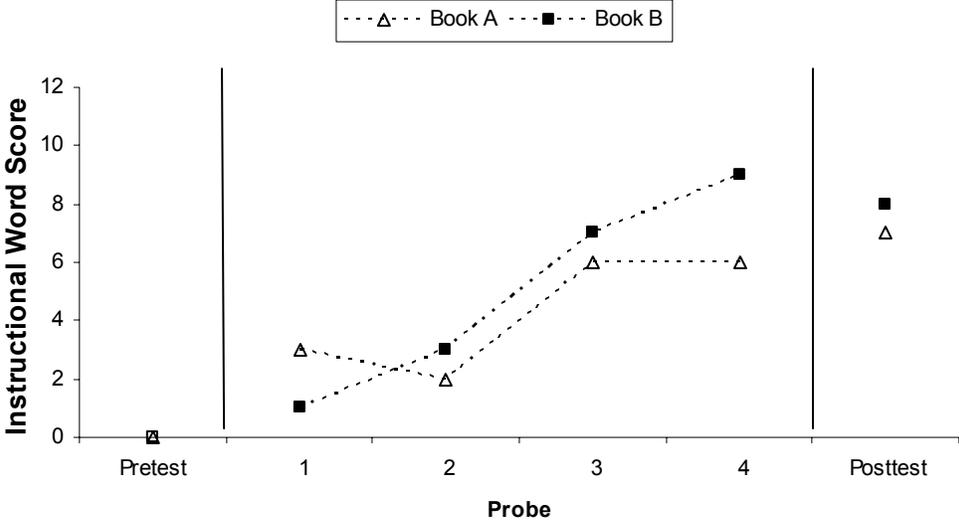
Figure 4.14

Acquisition and Retention of Target Words for Each Book for Angela.

Figure 4.15

Acquisition and Retention of Target Words for Each Book for Cassandra.
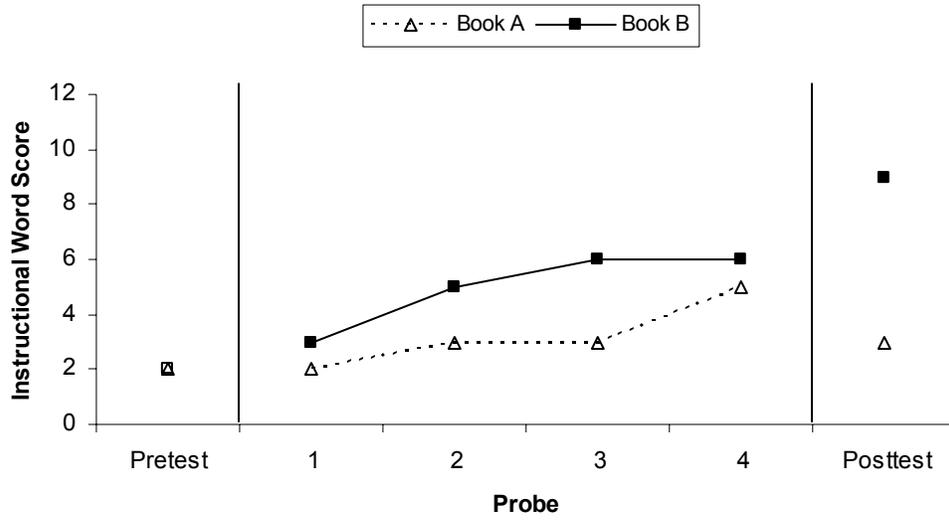
CHAPTER V

DISCUSSION

To summarize the results of this study, the first major finding was that robust vocabulary instruction completed over a 4-week period resulted in significant word learning gains for children with clinically depressed vocabulary skills. The difference at posttest between instructional and control word sets was approximately 10 points, which is a large effect size. This finding suggests that robust vocabulary instruction completed in a relatively short time period encourages word learning among children with expressive vocabulary deficits. The second major finding was that African American children appeared to learn words at a deeper level from a storybook that displayed sociocultural images and experiences different from their own. The implications of these findings will be discussed in terms of: (a) robust vocabulary instruction, (b) book type, and (c) participant observation/variation.

Impact of Robust Vocabulary Instruction

The present findings show support for using an instructional strategy that goes beyond establishing an accurate association between a word and its 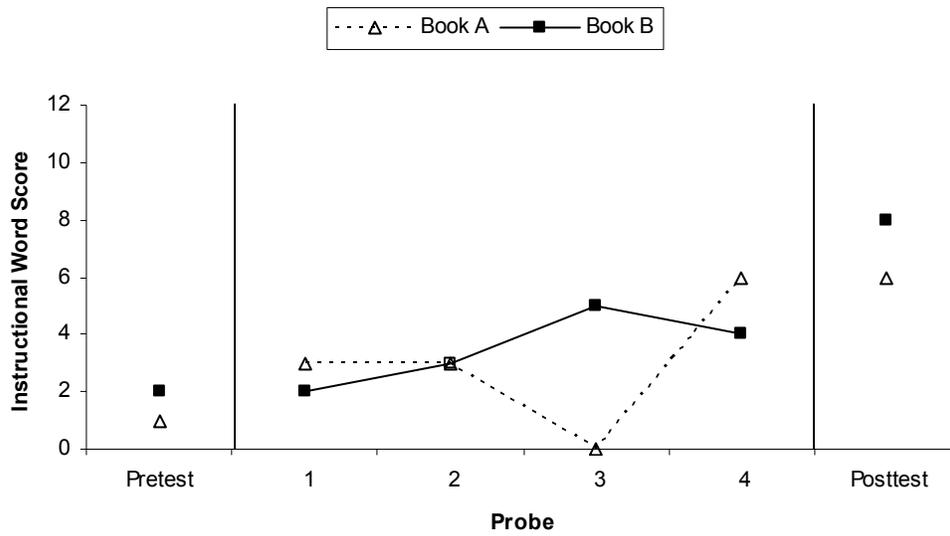definition. Robust vocabulary instruction provides frequent and numerous opportunities for children to think about and use novel words across varied contexts. This type of vocabulary instruction has been suggested as a means for improving word knowledge of children with limited vocabularies (Baker et al., 1995; Graves, 1986). However, to date, the literature has only documented the effects of robust vocabulary instruction with children considered "at-risk" based on attendance at lower SES schools or on the results of reading and vocabulary subtests on standardized achievement tests (e.g., Iowa Test of Basic Skills). Thus, the findings of this investigation extend the current literature in showing that robust vocabulary instruction is effective in developing and maintaining knowledge of novel words in children with clinically depressed vocabulary skills.

It has also been suggested that explicit vocabulary instruction with diverse exposures to novel words may be needed for adequate learning to occur (Carr, 1985; Graves, 1986) and that word learning may be facilitated by more concentrated exposures to words. The findings from this investigation demonstrated that 3 instructional exposures to novel words were effective in developing word knowledge. Specifically, the results showed a significant change in word knowledge scores occurred at probe 3. Examination of participant responses showed that 3 of 5

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participants demonstrated full concept knowledge of novel words on this probe. The remaining two participants demonstrated partial concept knowledge of at least one word that was based on a specific context beyond its correct use in a sentence. These findings suggest that 3 instructional exposures facilitated novel word learning beyond that of general recognition. This outcome converges with that of previous reports in the literature. Specifically, McKeown, Beck, Omanson, and Pople (1985) found that although 12 instructional encounters with words produced greater gains in accuracy of word-definition knowledge, as few as 4 instructional encounters were successful in enhancing knowledge of words using robust vocabulary instruction. Similarly, Jenkins and colleagues (Jenkins et al., 1989) found that 3 to 6 instructional encounters with a word resulted in significant word retention on a multiple choice test. Thus, the findings of the present study extend the existing literature in confirming that a great number of instructional encounters is not a primary factor in vocabulary acquisition, but that word learning was the result of the nature of the intervention.

The findings also showed that incidental learning of at least one word in the control set occurred for 4 of 5 participants. In this investigation, words learned incidentally were known in a general sense, meaning that children were able to use the word in a sentence similar to the context in the story (see results section for example). Two children (Angela and Kevin) demonstrated knowledge of control words beyond a general recognition, but still in a context similar to the book. This finding implies that perhaps the meaning of these words might have been apparent in the context of the author's sentences and/or illustrations. However, the fact that incidental learning of the same word did not occur across participants suggests this to be unlikely. It is possible these two children were able to make inferences about the control words using the story and pictorial context and relating them to already known concepts, thereby facilitating partial concept knowledge of the un-instructed words.

Previous research has shown that children can learn word meanings incidentally through repeated readings (Eller et al., 1988; Elley, 1989; Leung & Pikulski, 1990). Elley (1989) reported vocabulary gains on multiple-choice tests of word knowledge in 7- and 8-year-old children after 3 readings of storybooks. Eller et al. (1988) and Leung and Pikulski (1990) also offered evidence that the repeated reading aloud of storybooks, combined with immediate story retellings, encouraged incidental learning of younger children. In these two studies, vocabulary was measured by the contextually appropriate use of targeted words in retellings after each of

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three readings. Numerous other studies have found similar results of incidental learning with repeated reading of storybooks, however, the differences between stage of word knowledge found for words in the instructional set versus the control set suggest that incidental learning was not responsible for the gains in word knowledge scores for children in this investigation.

Depth of word knowledge and effect of task. The literature indicates that most explanations of differences in vocabulary can be grouped into categories of: generalized linguistic deficiencies, memory deficits, poor word learning strategies, and opportunities to interact with novel words. The results suggest that children in this investigation exhibited the latter two and benefited from an instructional word learning strategy that related novel words to known concepts (i.e., activation of prior knowledge) as a means of building rich semantic networks. The fact that children demonstrated partial (i.e., Stage 3) or full concept (i.e., Stage 4) knowledge of 83% of the instructional words in 4 weeks, contributes to the literature base which suggests students who require help in vocabulary most, need to acquire words at a pace even faster than that of their peers (Baker et al., 1995; Nagy & Scott, 2000). The findings show that robust vocabulary instruction can develop word learning to a partial, context-bound stage, which has been suggested as an initial means to decrease the gap between children with limited vocabularies and their typically achieving peers (Baker et al., 1995; Nash & Donaldson, 2005).

In addition to determining what is known about a word, vocabulary knowledge involves assessing the dimensions of the task environment. Some argue that multiple-choice vocabulary tasks "are useless at best and dangerous at worst" (Kameenui et al., 1987, p. 137) because they are not sensitive to different degrees of word knowledge (Anderson, R. C. & Freebody, 1983; Curtis, 1987). Thus, children's productive definitions were used in the present study as a means of evaluating word learning. It has been suggested that definitions can show the incremental manner in which vocabulary develops (Beck et al., 2002; Curtis, 1987). In fact, use of the definition task was effective in demonstrating what Nagy and Scott (2000) refer to as the incrementality and multidimensionality aspects of word knowledge. Specifically, the nonsystematic and often random changes in stage of word knowledge from one probe to the next demonstrated the qualitatively different degrees in which word learning actually occurred.

One explanation for this finding may be the effect of task. It may be that there is a continuum of difficulty of tasks which assess vocabulary knowledge, so that being able to use a word in a contextually appropriate way in a sentence may require less depth of knowledge or less

expressive language skills than producing a verbal definition (Leung & Pikulski, 1990). It also may be that perhaps children were cognizant of the task requirement - that telling what a word means involves more than using it in a sentence. To illustrate, at probe 3 if full or partial concept knowledge was not demonstrated, analysis showed children chose not to respond to a word rather than provide an incorrect definition or use it in sentence. This was an interesting discovery given that it only occurred on words in which recognition of the word (i.e., used in a seemingly correct sentence) had been demonstrated on a previous probe. Thus, not responding could be evidence of vocabulary growth.

Further analysis of this finding suggests that a majority of children's responses at each probe were demonstrative of a *tentative* growth pattern. That is, although vocabulary growth occurred across the experimental condition, the increase was not consistent. Therefore, it could be argued that, a non-response or incorrect definition on a particular probe is not necessarily evidence of a lack of knowledge of that word. It also means that accurate use of the word is not necessarily an indicator of newly acquired understanding. This finding supports the literature which suggests that vocabulary does not occur in a linear fashion, but in fact that words are known in degrees and that development is a gradual process (Curtis, 1987; Nagy & Scott, 2000) even if children show that they do not know a word.

Impact of Book Type

The general hypothesis undergirding the second research question was that African American children's retention of novel words would be facilitated by sociocultural images and experiences that were similar to their own. Analysis of the results indicated that the use of the African American book was not a potent variable in facilitating retention of novel words. That is, the data did not support the expectation that book type would generate a differential effect on retention of instructional words in the predicted direction. Although there was a non-significant finding between acquisition of words based on book type in the experimental condition, the significant difference that existed in favor of the book featuring Caucasian images and experiences was surprising. This finding is inconsistent with previous research by Smith and Lewis (1985) which suggests that stories depicting African American imagery facilitates more efficient recall than stories depicting Caucasian images among African American children. This discrepancy may be accounted for by the fact that the present study examined word retention, whereas Smith and Lewis (1985) investigated story recall.

In an effort to identify factors which may have contributed to the findings, the following aspects were examined. First, it was considered that children's acquisition of novel vocabulary may be sensitive to the type of narrative. That is, some stories may have specific text features that enhance learning. To account for this possible variation, visual and content analyses were completed prior to implementation of the investigation, which decreased the possibility that books varied significantly from each other beyond depiction of culturally different images. Analyses of genre and narrative structure indicated that books were equivalent in terms of lexical density and informational ideas. Analyses focusing on the artwork, scenery, number of character illustrations, and the number of pages with illustrations showed no difference between the books' visual content. Thus, differences in narrative structure can be reliably ruled out.

Second, changes in stage of word knowledge were compared to book reading and instructional sessions. Specifically, any change in participants' word knowledge was examined with regard to whether better performance was observed with fewer days between the probe and the book reading/instructional session. Number of days between book reading and vocabulary was not found to be a contributing factor in the findings. That is, children did not do better on probes in which a book reading/instructional session occurred two days prior to the probe session versus four days prior to the probe session.

Third, inspection of the investigator's references to images was examined. Eighty-five total references to images in the African American book were provided and 81 total references to images in the Caucasian book were provided. Thus, no significant differences occurred in the number of references provided during the book reading and vocabulary lessons. Given these findings, several tenable explanations for the outcomes related to book type are provided beyond factors related to procedural fidelity and book comparability.

The first plausible explanation is that the findings here could be related to the prevalence of interracial imagery and multicultural themes found in school textbooks and television media, which may create a desensitizing effect in the perception of racial/ethnic imagery (Bell & Clark, 1998). In an effort to respond to the issue of multiculturalism, school textbooks and media have diversified the racial imagery to reflect the distinct social and cultural traditions associated with culturally different groups in general, and African Americans in particular, which may have contributed to the results found.

The second explanation is that storybooks were used primarily as a means of contextualizing novel words. Specifically, the actual importance of the books to the intervention technique was minimal. It is possible that a different intervention explicitly referencing and highlighting the illustrations in the storybooks may have produced different results.

The third explanation is the issue of heterogeneity. Nagy and Scott (2000) suggest that heterogeneity adds to the complexity of word knowledge in that what it means to know a word depends on what kind of word one is talking about (e.g., function vs. content). Examination of the instructional words suggests that although words selected from both book types were verbs (i.e., content words), the more efficient acquisition and retention of words from Book B (Caucasian) may have been related to the metalinguistic sophistication of words from Book A (African American). Research has shown that before children can engage in flexible uses of words, they must have an implicit understanding that words are separable from their referents (Pan, 2005). It is this metalinguistic ability that allows one to reflect on and manipulate the structural features of language (Tunmer, Herriman, & Nesdale, 1988). Thus, while definitions were carefully devised to make them accurate and clear to participants, the words *notice* and *focus* (Book A) may have been more challenging than *collect* and *snuggle* (Book B). It may have been that words from book A were difficult for children to explicitly separate from a contextualized referent. The literature suggests that children are more likely to learn the meanings of words in interactive contexts such as to *notice* something different about two pictures than in structured metalinguistic ones, such as providing a definition for *notice* (Nelson & Van Meter, 2006).

Participant Observation/Variation

The use of the single subject design illustrated a significant degree of variability with participants, which may not have been evident in a group study. This variability may be related to external factors or it may be reflective of the nature of a deficit in vocabulary skills. More specifically, all of the children had standardized vocabulary assessment scores that are considered clinically depressed, but to differing degrees. Thus, it may be possible that the variability seen between participants is indicative of the degree of vocabulary knowledge prior to the intervention. Previous studies have shown that children with low vocabulary knowledge made gains in word learning at least as much as children with higher vocabulary skills (Elley, 1989; Ewers & Brownson, 1999). However, other studies have shown evidence of a Matthew

effect on word learning whereby children with higher vocabulary skills made greater word-learning gains (Penno, Wilinson, & Moore, 2002; Sénéchal, Thomas, & Monker, 1995). First dubbed by Merton (1968), the concept of Matthew effects arises from findings that children who have advantageous early educational experiences are able to utilize new educational experiences more proficiently. Interestingly, both of these findings were evident in this investigation.

Kevin's performance on the standardized measures of vocabulary and the dependent variable were by far the lowest of any participant. However, he demonstrated the greatest gain in word knowledge across probes and ranked as having the highest score on the delayed posttest. He demonstrated an immediate change in depth of word knowledge upon implementation of the intervention and continued to show increased depth of knowledge that reflected a stable and the most consistent pattern of vocabulary growth among participants – a finding that converges with that of Elley (1989) and Ewers and Brownson (1999).

In contrast, Roy's vocabulary skills, though clinically depressed, ranked as the second highest among participants. However, his depth of knowledge for the instructional word set did not move beyond a general recognition of words. That is, he was only able to provide a sentence for the novel words. At times, in the experimental condition Roy demonstrated partial concept knowledge of three words, but on subsequent probes his stage of word knowledge regressed. Overall his process of growth was indicative of either no apparent growth or probable growth patterns which may be evidence of a Matthew effect.

An interesting observation was that of Cassandra's performance on two control words. On the pretest Cassandra displayed a general sense of the word *twinkle* and partial concept knowledge of the word *skid*. Analysis showed that at probes 2 and 3 she continued to demonstrate a general sense of the word *twinkle* through its correct use in a novel sentence, while she demonstrated no knowledge of *skid*. On probe 4 and the subsequent posttest, Cassandra demonstrated no knowledge of either word from the control set. While the reason for this finding is unknown, it could be that saliency of the control words was not evident in instructional sessions which affected her responses. Examination of her performance on these probes showed that she either provided no response or provided a one-word response that was incorrect (e.g., *skate* for the word *skid*).

Finally, it was noted that scores for words from Book A (African American) declined on the delayed posttest for all participants. Only two children (Kevin and Angela) maintained

scores above baseline performance for words from this book type. All other children returned to baseline or near baseline performance. Examination of children's responses showed no apparent growth for two of the words (*notice* and *combine*), meaning that stage of word knowledge for these words remained constant at no knowledge or a general recognition. A possible explanation regarding the metalinguistic sophistication of these words has been offered in a previous section. However, another tenable explanation may be that words from Book B were easier to recall because the sociocultural content presented (i.e., camping) was unique to the experiences of the African American participants in this investigation. While this explanation may seem counter to what is generally agreed upon in the literature, it is offered as a plausible account of differences observed.

Clinical Implications

The fact that gains were made during sessions occurring twice weekly, for 30 minutes speaks to the utility and efficiency of the instructional technique for clinical practice. Speech-language pathologists (SLPs) working in school settings with high case- loads and limited time can easily incorporate robust vocabulary instruction into units that are congruent with educational curriculums. Baker et al's (1995) argument that an individual does not need to know all definitions or contextual meanings of a word to use it successfully suggests that SLPs' should work closely with teachers and special educators to facilitate vocabulary development that parallels teacher expectation of a word's usage in the classroom. The principles of *integration*, *repetition*, and *meaningful use* suggested by Nagy (1988) can be implemented by SLPs in the context of robust vocabulary instruction to bridge the gap between students' knowledge and teachers' expectations for novel word learning.

First, given that novel words are best learned by integrating their meanings with related information, SLPs can use thematic literature that is already a component of educational curriculums to establish relations among novel and existing vocabulary to promote depth of understanding. Specifically, objectives for improving oral language comprehension and expression can be centered on relevant vocabulary needed for effective reading and writing in the classroom. Second, the principle of repetition can be implemented by providing multiple encounters with novel words in a variety of language activities that involve the words' usage (e.g., speaking, listening, reading, and writing). Finally, the principle of meaningful use is best implemented in actual communicative contexts that are not contrived. For example, children

should be encouraged to use novel words when describing their own experiences, such as telling about a trip to the mall.

While the findings regarding retention of vocabulary based on book type were not in the prediction direction, it is recommended that a standard component of speech-language intervention be the inclusion of culturally relevant literacy materials and activities. Teaching children to communicate effectively using oral and written language should not only stress mastery of syntactic and semantic information but also respect the learner's sociocultural background and thus incorporate and reinforce use of these experiences in the clinical process. The literature indicates, as was observed in this investigation, that the use of culturally sensitive literature results in greater responsiveness and motivation when storybooks display cultural images and themes similar to children's backgrounds (Bell & Clark, 1998; Gay, 2000; Ladson-Billings, 1995). Indeed, children in this investigation made a greater number of comments about the story depicting African American images and sociocultural theme during the book reading activity. However, SLPs should be cautioned to use books that are reflective of student's cultural backgrounds and that have positive images of children's heritages. Below are some of the guidelines suggested by Shioshita (1997) when selecting multicultural books:

- General accuracy: Books should contain current and correct information with updated pictures and illustrations.
- Stereotypes: Books should reflect individual people's lives, rather than assigning general personality traits or behaviors to an entire group of people.
- Language: Books should not separate characters into those who speak Standard English and those who don't. The actual language of a specific culture should appear in the text and not nonsense words or an invented language that mimics the authentic one.
- Illustrations: Books should contain illustrations that convey the reality that members of any ethnic group do not all look the same.
- Appealing stories: Books should contain themes that appeal to children within and outside of a given culture.

While this list is not all inclusive, it contains requisite points that must be considered to move beyond having good intentions to actually utilizing appropriate culturally relevant materials in the clinical process.

Limitations and Future Research

The results of this research provide guidance for implementing an instructional strategy to facilitate development of word learning in children with depressed vocabulary skills. However, several salient limitations of this work warrant discussion. The first involves equivalence of the instructional word set. Although all six words were verbs and met the criteria of being Tier 2, the type of verb may have had a differential effect on the efficiency of word learning. That is, verbs express actions, processes, and conditions. Examination of the verbs indicated that 2 of the words from Book A expressed *processes* and the remaining words all expressed *actions*. The extent to which dissimilar verb types vary in levels of metalinguistic complexity is unknown.

Second, although the current investigation showed that the use of productive definitions was effective in demonstrating incremental changes in word knowledge, the inclusion of a receptive task would have further delineated the multidimensionality aspect of novel word learning in an important way. That is, receptive vocabulary knowledge precedes development of expressive knowledge as individuals often understand more than they can express. Therefore inclusion of a receptive task may have explicated degrees of word learning that were not evident when there was no apparent growth in children's productive definitions.

Third, it is not known if the finding of the second research question examining the effect of book type was related to the assessment task or the intervention procedure. Specifically, the use of productive definitions was not a direct measure of whether children attended to one book over another sufficiently enough to influence word retention. Thus, use of an alternate task such as story retelling, examining novel word usage may have provided a more complete picture of the differential effects of book type. Secondly, although the books differed in terms of cultural content and images, the vocabulary intervention procedure did not engender an explicit focus on the subtle cultural differences between the themes. Specifically, the theme of camping (Caucasian book) was not one in which any of the participants had experienced, while wanting to become friends with someone (African American book) was. In this vein, the intervention procedure did not allow for exploitation of the differences between the books which may have impacted the results.

Finally, the small sample of words involved makes these results somewhat tentative. It is the investigator's experience that at least 10 novel words are encountered on a weekly basis in

reading, spelling, and literature activities. Consequently, it is not known if a larger number of words that are more representative of the number of words children are exposed to during curricular activities may have provided different results.

The present findings demonstrate the potential impact of robust vocabulary instruction for facilitating vocabulary development in children with clinically depressed vocabulary skills. It is the type of balanced approach using highly contextualized encounters in association with definitional information for novel words that has been suggested as a means for developing word learning in young children (Carlisle & Katz, 2005; Nelson & Van Meter, 2006). Future studies should implement the instructional strategy over an extended time period to determine its long-term effect on academic achievement of children with vocabulary deficits. In particular, it is of interest to explore how robust vocabulary instruction facilitates oral and written language development and use.   Finally, it may be necessary to modify the research question regarding the role of book type to include story recall, rather than retention of novel vocabulary words. Such an expansion would permit an examination of the relative effects of cultural factors on usage of newly acquired vocabulary in a contextualized story retelling task. In addition, it may be useful to examine the effects of cultural factors in novel word usage in written language tasks.

APPENDIX A

PROBE INSTRUCTIONS

Demonstration: "Sometimes in school you may be asked to give the definition of a word or to tell what a word means." The best way to give a definition is to tell what it is and something about it." For example, "If I am asked to define *skip*, I can say 'hop,' but that isn't a complete definition. A better way to tell about *skip* is, 'It is hopping lightly on one foot and then another.' That tells what skip is and something about it."

Trial 1: "Now I will ask you to tell me what a word means. Listen and then tell me as much as you can about this word. Remember to tell me what it is <u>and </u>something about it." The word is *rip.* Wait for 5 seconds and supply correct response if student is unable to answer or provides partial definition. Correct response: *Rip* means to tear apart like a piece of paper. Proceed to trial 2.

Trial 2: "Let's try another word. Remember to tell me *what it is* and *something about it*." The word is *drag.* Wait for 5 seconds and supply correct response if student is unable to answer or provides partial definition. *Drag* means to move or pull along slowly like a heavy box. Proceed to Assessment.

PRE/POSTTEST

Instructions: Present prompt, pause for response, write responses verbatim. If an incomplete definition is given or word is only used in a sentence, prompt to provide more information.   If response is not initiated within 5 seconds move to next word.

Prompt: *"Tell me all you can about what the word _____ means."*

Place an **X** under the stage of word knowledge.		*Stage 1*	*Stage 2*	*Stage 3*	*Stage 4*
Word	Response	0	1	2	3
carry[b]					
prune[a]					
crackle[b]					
visit[a]					
collect[b]					
focus[a]					
buzz[b]					
snuggle[b]					
twinkle[a]					
listen[a]					
notice[a]					
sizzle[b]					
call[b]					
flutter[b]					
trifle[a]					
sweep[a]					
combine[a]					
skid [b]					

Note. Italics represent a target word. Underline represents a control word.

[a] African American book. [b] Caucasian book.

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STORYBOOK TITLES AND SELECTED WORDS

Title (author, year)	Instructional Words	Non-Instructional Foil Words	Non-Instructional Control Words
Miss Viola and Uncle Ed Le (Duncan, 1999)	focus notice combine	visit listen sweep	prune twinkle trifle
Sophie's Knapsack (Stock, 1988)	collect flutter snuggle	carry buzz call	crackle sizzle skid

APPENDIX C

WEEKLY PROBE

Instructions: Present prompt, pause for response, write responses verbatim. If an incomplete definition is given or word is only used in a sentence, prompt to provide more information. If response is not initiated within 5 seconds move to next word.

Prompt: *"Tell me all you can about what the word _____ means."*

Place an **X** under the stage of word knowledge.		*Stage 1*	*Stage 2*	*Stage 3*	*Stage 4*
Word	Response	0	1	2	3
collect[b]					
notice[a]					
crackle[b]					
carry[b]					
combine[a]					
visit[a]					
sizzle[b]					
focus[a]					
prune[a]					
skid [b]					
listen[a]					
call[b]					
flutter[b]					
trifle[a]					
snuggle[b]					
twinkle[a]					
sweep[a]					
buzz [b]					

Note. Italics represent a target word. Underline represents a control word.

[a] African American book. [b] Caucasian book.

APPENDIX D

Book Reading and Vocabulary Instruction – Week 1

Task	Instructions Book A
Prepare for listening with questions and discussion	
Introduce story with background information	The title of the story I'm going to read is _Miss Viola and Uncle Ed Lee_
Encourage students to predict what story will be about	• Let's look at the pictures to see if you can tell me what the story will be about. (flip through pages showing illustrations) • After predictions, say: "The story is about two people who are opposites as can be, but Uncle Ed Lee tells Bradley he wants to become friends with Miss Viola. We'll see how that's going to happen."
Ask pre-questions that that build additional background and establishes a purpose for listening	• Have you ever wanted to become friends with someone? What did you do?
Read book	
Vocabulary Instruction	
Word 1	notice
Contextualize word for its role in the story.	In the story Uncle Ed Lee asked Bradley did he _notice_ Miss Viola's bright smile.
Provide definition	_Notice_ means to see or observe
Create phonological representation	Say the word after me, "_notice_".
Provide an example	Sometimes people do things because they want you to _notice_ them or something they have. For example, if your friend just got new shoes, he might walk back and forth in front of you so that you can _notice_ them.
Interactions with word	• Do you notice anything green in this room? • Can you notice something if your eyes are closed? Why? • Without turning around, did anybody notice how many

	computers are in this room?
	• Let's look at these two pictures, tell me something you <u>notice</u> that is different.
	• What would be easier to *notice* in a forest, a yellow lizard or a green lizard?
Reinforce phonological representation	What word have we been talking about? Scaffold by saying, "Repeat after me" notice
Word 2	**combine**
Contextualize word for its role in the story.	In the story, Bradley wondered how you could *combine* messy and neat.
Provide definition	*Combine* means to join together
Create phonological representation	Say the word after me, *"combine"*
Provide an example	If you wanted to color a picture of grass and you didn't have a green crayon, you could *combine* yellow and blue to make green.
Interactions with word	• What are two numbers that you can *combine* to make 4?
	• What drink would I get if I were to *combine* lemons, water, and sugar?
	• Can you *combine* numbers and letters on a page and read it? (e.g. fre3lsit3sl;6)
	• If I were to *combine* two cups of milk, would I need a bigger cup or a smaller cup? Why?
	• Which would taste better, if you were to *combine* milk and chocolate syrup or milk and maple syrup? Why?
Reinforce phonological representation	What word have we been talking about? Scaffold by saying, "Repeat after me" - combine
Word 3	**focus**
Contextualize word for its role in the story.	In the story, Bradley heard Uncle Ed Lee talking about Miss Viola, but he didn't answer because he was trying to *focus* on the game.
Provide definition	*Focus* means to pay attention to.
Create phonological representation	Say the word after me, *"focus"*

Provide an example	When driving, if you don't focus on the road, you can have an accident.
Interactions with word	• Is it easy to *focus* or hard to *focus* on your school work when people are talking loudly? • Is it easy to <u>focus</u> or hard to <u>focus</u> when reading in a quiet library? • If I were watching TV while doing my homework, I am focused or not *focused* on my work? • Which takes more *focus* to do riding a bike or singing along with the radio? Why?
Reinforce phonological representation	What is the word we have been learning? Scaffold by saying "Repeat after me" *focus*
Concluding the Lesson	
	We've talked about 3 words today: *notice, combine*, and *focus*. Let's think about them some more.
Interactions with all 3 words	• What would I get if I were to *combine* dirt and water? • Would it be easy or difficult to *notice* a brown bug in the mud? Why? • Would it be easy to *focus* on driving if mud splashed on your windshield? Why?

Prepare for listening with questions and discussion	**Book B**
Introduce story with background information	The title of the story I'm going to read is *Sophie's Knapsack*
Encourage students to predict what story will be about	• Let's look at the pictures to see if you can tell me what the story will be about. (flip through pages showing illustrations) • After predictions, say: "The story is about a girl who goes hiking up a mountain for the first time with her family."
Ask pre-questions that that build additional background and establishes a purpose for listening	• Have you ever been hiking? Or Tell me about a place that you went for the first time with your family?
Read book	
Vocabulary Instruction	
Word 1	**collect**
Contextualize word for its role in the story.	In the story, Sophie took her sweater out of her knapsack so that she could *collect* pinecones for a campfire.
Provide definition	*Collect* means to gather together
Create phonological representation	Say the word after me, *collect*
Provide an example	During the holidays, students often *collect* can goods to feed people that are hungry.
Interactions with word	• If you are making a book for Mother's Day, would you *collect* pictures of your family or pictures of cars? Why? • If you were starting a new garden, would you *collect* doors or flowers? Why? • If you invited 25 people to your birthday party, and you only had room for 20, would you need to *collect* more chairs or more balloons? Why? • If you had a lot of money, what is something you would *collect*? • Would a person who likes to read *collect* books or rocks?

	Why?
Reinforce phonological representation	What word have we been talking about? Scaffold by saying, *collect*
Word 2	**snuggle**
Contextualize word for its role in the story.	In the story, Sophie *snuggled* next to her parents in her sleeping bag.
Provide definition	*Snuggle* means to lie close to or to hold closely
Create phonological representation	Say the word after me, *snuggle*
Interactions with word	- Show me how you would *snuggle* with this bear? - Sometimes when it's cold, people like to *snuggle* together to stay warm. Which one could you also snuggle with to stay warm, a blanket or a towel? Why? - Look at these pictures, which shows an example of *snuggle*? How do you know? - Would it be safe to *snuggle* with puppy or a lion? Why?
Word 3	**flutter**
Contextualize word for its role in the story.	In the story, a blue dragonfly *fluttered* over Sophie's head.
Provide definition	*Flutter* means to move or fly with quick, light flapping movements
Create phonological representation	Say the word after me, *flutter*
Provide an example	Children sometimes *flutter* their arms when running around on the playground.
Interactions with word	If any of the things I say might be examples of something *fluttering*, say "fluttering". If not say nothing. - A dolphin flapping its fins - A kitten licking its fur - An elephant walking - A bee buzzing around your head - A humming bird moving among flowers
Reinforce phonological representation	What is the word we have been learning? Scaffold by saying, Repeat after me, *flutter*
Concluding the Lesson	

	We've talked about 3 words today: *collect, snuggle,* and *flutter*. Let's think about them some more.
Interactions with all 3 words	- Would it be easier for two bears to *snuggle* or two porcupines? Why? - Would it be easier to *collect* spoons or trees? Why? - Would it be easier to see a butterfly *flutter* its wings or a house fly? Why?

Book Reading and Vocabulary Instruction - Week 2

Task	Instructions Book B
Elicit Recall	Point to title of book and ask children if they remember the title of the story. Scaffold by reading title. *Sophie's Knapsack*
Ask children if they remember content of story	Does anyone remember what the story was about? Scaffold by saying "The story is about a girl who goes hiking up a mountain for the first time with her family."
Read book.	
Vocabulary Instruction	
Elicit recall and phonological representation of words	The last time we read this book we learned three new words. Say them after me, *collect, snuggle, flutter*
Reinforce definitions by re-contextualizing the word for its role in the story	Turn to page in book. • In the story Sophie took her sweater out of her knapsack so that she could *collect* pinecones for a campfire. Who remembers what *collect* means? Scaffold by saying *collect* means to gather together. • In the story, Sophie *snuggled* next to her parents in her sleeping bag. Who remembers what *snuggle* means. Scaffold by saying *snuggle* means to lie close to or hold closely. • In the story, a blue dragonfly *fluttered* over Sophie's head. Who remembers what *flutter* means? Scaffold by saying *flutter* means to move or fly with quick, light flapping movements.
Relate words to life experiences	• When I go on a trip I like to collect spoons from each state. Do you know anyone who likes to *collect* things? • Can you think of a time when you *snuggled* with

	something or someone?
Interactions with all three words through use of game play and experiential activities	• Treasure hunt game with sand. Each student will have different items to *collect*. If they come across one that not theirs, they have to leave it. • Students will sort pictures by things you can *snuggle* with or can't snuggle with • Students will identify picture of things that can *flutter*.
Reinforce phonological representation	Who can tell me the words we've talking about this session? Scaffold by saying repeat after me, *collect, snuggle, flutter*

Task	Instructions Book A
Elicit Recall	Point to title of book and ask children if they remember the title of the story. Scaffold by reading title. *Miss Viola and Uncle Ed Lee*
Ask children if they remember content of story	Does anyone remember what the story was about? Scaffold by saying, "The story is about two people who are opposites as can be, but Uncle Ed Lee tells Bradley he wants to become friends with Miss Viola."
Read book.	
Vocabulary Instruction	
Elicit recall and phonological representation of words	The last time we read this book we learned three new words. Say them after me, *notice, combine, focus*
Reinforce definitions by re-contextualizing the word for its role in the story	Turn to page in book. - In the story Uncle Ed Lee asked Bradley did he <u>*notice*</u> Miss Viola's bright smile. Who remembers what *notice* means. Scaffold by saying, notice means to see or observe - In the story, Bradley wondered how you could <u>*combine* </u> messy with neat. Who remembers what combine means. Scaffold by saying, *combine* means to join together - In the story, Bradley heard Uncle Ed Lee talking about Miss Viola, but he didn't answer because he was trying to <u>*focus*</u> on the game. Scaffold by saying, *focus* means to pay attention to.
Relate words to life experiences	- Did anybody *notice* what color their teacher was wearing today? - Did anything happen today at school that made you lose *focus* while doing your school work? What 2 things can you *combine* to make bubbles?

Interactions with all three words through use of game play and experiential activities	• Make instant pudding. We will have to *combine* 2 ingredients: pudding and milk. • We will have to *focus* on measuring the correct amount so that it will taste good. • Play "I SPY, changing the spy to *notice*.
Reinforce phonological representation	Who can tell me the words we've talking about this session? Scaffold by saying repeat after me, *combine, focus, notice*

Book Reading and Vocabulary Instruction - Week 3

Task	Instructions Book A
Elicit Recall	Point to title of book and ask children if they remember the title of the story. Scaffold by reading title. *Miss Viola and Uncle Ed Lee.*
Ask children if they remember content of story	Does anyone remember what the story was about? Scaffold by saying, "The story is about two people who are opposites as can be, but Uncle Ed Lee tells Bradley he wants to become friends with Miss Viola." • What do we know about Uncle Ed Lee? Scaffold by saying, "he messy or not very neat" • What do we know about Miss Viola? Scaffold by saying, "she is neat and very clean" • When Bradley told Miss Viola that Uncle Ed Lee wanted to make friends with her, why did she say "he's gotta do something about that messy yard"? Scaffold by saying, "perhaps it was because she was so neat, that she didn't want to be friends with anyone so messy."
Read book.	
	Vocabulary Instruction
Elicit recall and phonological representation of words	Who can remember the three words we learned from this story? Scaffold by saying, *notice, combine, focus*
Reinforce definitions by re-contextualizing the word for its role in the story Elicit recall of word meaning	Turn to page in book. • In the story Uncle Ed Lee asked Bradley did he <u>*notice*</u> Miss Viola's bright smile. Who remembers what *notice* means. Scaffold by saying, notice means to see or observe • In the story, Bradley wondered how you could <u>*combine*</u> messy with neat. Who remembers what combine means. Scaffold by saying, *combine* means to join together • In the story, Bradley heard Uncle Ed Lee talking about

	Miss Viola, but he didn't answer because he was trying to *focus* on the game. Scaffold by saying, *focus* means to pay attention to.
Reinforce connections between words and meanings by asking questions and expanding upon children's responses during experiential activities	• "Tell me the ingredients we *combined* last week to make our pudding." • Using a Venn diagram, children will identify items that are better when *combined* or separated and explain rationale. • Using the overhead, students will have to *focus* to *notice*, hidden pictures. • When an object is seen, say, "I notice (object) and give location."
Interactions with all three words	"I'm going to say a sentence that has a word missing, *notice, combine, or focus* will fit in each sentence." Repeat the three possible words at the end of each sentence. • The coach needed 10 players to have a basketball team, he had four 2nd graders and six 3rd graders, so he decided to ____ both grades to make one team. (combine) • The thief robbed the house at night so he wouldn't be ____. (notice) • Because Mary didn't _____ on the knife while cutting the apple, she cut her finger instead. (focus)
Reinforce phonological representation	• Who can tell me the word we've been learning that means *to see or observe?* (notice) Scaffold by saying, "the word that means to see or observe is notice." • Who can tell me the word we've been learning about that means *to pay attention to?* (focus) Scaffold by saying, "the word that means to pay attention to is focus." • Who can tell me the word we've been learning that means *to join together?* (combine)

	Scaffold by saying, "the word that means to join together is combine."

Task	Instructions Book B
Elicit Recall	Point to title of book and ask children if they remember the title of the story. Scaffold by reading title. *Sophie's Knapsack*
Ask children if they remember content of story	Does anyone remember what the story was about? Scaffold by saying, "the story is about a girl who goes hiking up a mountain for the first time with her family." - What do we know about how Sophie's family got to the mountain? They drove to park, and then they had to hike to the mountain. - Sophie's mom bought her a new knapsack for the camping trip. Why didn't the family take suitcases on their trip? Because they were hiking up a mountain and it hard to carry suitcases through the mud and rocks. - What do we know about the kinds of food the family ate during their hiking trip?
Read book.	
	Vocabulary Instruction
Elicit recall and phonological representation of words	Who can remember the three words we learned from this story? Scaffold by saying: *notice, combine, focus*
Reinforce definitions by re-contextualizing the word for its role in the story Elicit recall of word meanings	Turn to page in book. - In the story Sophie took her sweater out of her knapsack so that she could *collect* pinecones for a campfire. Who remembers what *collect* means? Scaffold by saying *collect* means to gather together. - In the story, Sophie *snuggled* next to her parents in her sleeping bag. Who remembers what *snuggle* means. Scaffold by saying *snuggle* means to lie close to or hold closely. - In the story, a blue dragonfly *fluttered* over Sophie's head. Who remembers what *flutter* means? Scaffold by saying *flutter* means to move or fly with quick, light flapping movements.

Reinforce connections between words and meanings by asking questions and expanding upon children's responses during experiential activities	• Tell me the things you at home that you *snuggle* with. • *Elephun Game* – children will *collect fluttering* butterflies from as they come from the elephant's trunk
Interactions with all three words	• Is an example of *snuggle* two people fighting or two people holding each to stay warm? • Which of our words describes the way a bird might move to get out of a storm? (flutter) • The PE teacher tells you to run as fast you can to get all of the flags from a bucket, are you *collecting* or *fluttering*.
Reinforce phonological representation	• Who can tell me the words we've been learning that means *to move or fly with quick, light flapping movements?* Scaffold by saying the word that means to move or fly with quick, light flapping movements is flutter. • Who can tell me the word we've been learning that means *to gather together?* Scaffold by saying the word that means to gather together is collect. • Who can tell me the word we've been learning that means *to hold or lie closely?* Scaffold by saying the word that means to hold or lie closely is snuggle.

Book Reading and Vocabulary Instruction - Week 4

Task	Instructions Book A
Elicit Recall	Point to title of book and ask children if they remember the title of the story. Scaffold by reading title. *Miss Viola and Uncle Ed Lee*
Ask children if they remember content of story	Does anyone remember what the story was about? Scaffold by saying, "The story is about two people who are opposites as can be, but Uncle Ed Lee tells Bradley he wants to become friends with Miss Viola." • What do we know about the person telling the story? Scaffold by saying, "His name is Bradley, he used to live on the same street and he's telling the story to his classmates" • What do we know about how Miss Viola and Uncle Ed Lee became friends? Scaffold by saying, "Uncle Ed Lee was messy and he cleaned his yard to become friend with Miss Viola who was neat"
Read book.	
	Vocabulary Instruction
Elicit recall and phonological representation of words	Who can remember the three words we learned from this story? Scaffold by saying, *notice, combine, focus*
Reinforce definitions by re-contextualizing the word for its role in the story Elicit recall of word meaning	Turn to page in book. • In the story Uncle Ed Lee asked Bradley did he <u>*notice*</u> Miss Viola's bright smile. Who remembers what *notice* means. Scaffold by saying, notice means to see or observe • In the story, Bradley wondered how you could <u>*combine*</u> messy with neat. Who remembers what combine means. Scaffold by saying, *combine* means to join together • In the story, Bradley heard Uncle Ed Lee talking about Miss Viola, but he didn't answer because he was trying to <u>*focus*</u> on the game.

	Scaffold by saying, *focus* means to pay attention to.
Add to network of related words by asking how a target word relates to other known words	• Using a word line, children will place a given word/phrase on the line based on a continuum of mot to least *focus* and explain reason. • Students will make choices between sentences that are examples and non-examples of *notice* • Students will identify word sand phrases that are examples of *combine*
Interactions with all three words	"I'm going to say a sentence that has a word missing, *notice, combine, or focus* will fit in each sentence." Repeat the three possible words at the end of each sentence. • Kameron needed to ____ on breaking the board with his foot to pass his test for karate. (focus) • We have to ____ eggs, sugar, and flour to make pancakes. (combine) • Casey didn't ____ that he had on one green sock and one brown sock until his friend said something about it. (notice)
Reinforce phonological representation	• Who can tell me the word we've been learning that means *to join together?* (combine) Scaffold by saying, "the word that means to join together is combine." • Who can tell me the word we've been learning that means *to see or observe?* (notice) Scaffold by saying, "the word that means to see or observe is notice." • Who can tell me the word we've been learning about that means *to pay attention to?* (focus) Scaffold by saying, "the word that means to pay attention to is focus."

Task	Instructions Book B
Elicit Recall	Point to title of book and ask children if they remember the title of the story. Scaffold by reading title. *Sophie's Knapsack*
Ask children if they remember content of story	Does anyone remember what the story was about? Scaffold by saying, "the story is about a girl who goes hiking up a mountain for the first time with her family." • What do we know about the weather conditions during the Sophie's hiking trip? The first day was sunny and hot. It rained during the night after they got to the mountain, and there were sploshy puddles on the trail back to the car. • How do we know that this was Sophie's first hiking trip? At the beginning of the story, her dad told her they were going to see real sky. Her mom bought her a new knapsack.
Read book.	
	Vocabulary Instruction
Elicit recall and phonological representation of words	Who can remember the three words we learned from this story? Scaffold by saying: *snuggle, combine, focus*
Reinforce definitions by re-contextualizing the word for its role in the story Elicit recall of word meanings	Turn to page in book. • In the story Sophie took her sweater out of her knapsack so that she could *collect* pinecones for a campfire. Who remembers what *collect* means? Scaffold by saying *collect* means to gather together. • In the story, Sophie *snuggled* next to her parents in her sleeping bag. Who remembers what *snuggle* means. Scaffold by saying *snuggle* means to lie close to or hold closely. • In the story, a blue dragonfly *fluttered* over Sophie's head. Who remembers what *flutter* means? Scaffold by saying *flutter* means to move or fly with quick, light flapping movements.
Add to network of related words by	• Using a word line, children will place a given

asking how a target word relates to other known words	word/phrase on the line based on a continuum of things they would most to least like to *collect* and explain reason. • Students will make choices between items they would or would not want to *snuggle* with and explain why. • Students will identify words and phrases that are examples of *combine*.
Interactions with all three words	"I'm going to say a sentence that has a word missing, *snuggle, collect, and flutter* will fit in each sentence." Repeat the three possible words at the end of each sentence. • John delivers newspapers before school every morning and once a month he has to _____ the money from his customers. (collect) • I knew that all of the birds that were in my yard were going because I heard the _____ of their wings. (flutter) • It is better to ___ with a teddy bear than a grizzly bear. (snuggle)
Reinforce phonological representation	• Who can tell me the words we've been learning that means *to move or fly with quick, light flapping movements?* Scaffold by saying the word that means to move or fly with quick, light flapping movements is flutter. • Who can tell me the word we've been learning that means *to gather together?* Scaffold by saying the word that means to gather together is collect. • Who can tell me the word we've been learning that means *to hold or lie closely?* Scaffold by saying the word that means to hold or lie closely is snuggle.

DEPENDENT VARIABLE RELIABILITY

Probe Administration

Probe: Pretest   1   2   3   4   Posttest   (circle one)

Observer: _____   Date: _____

Observer Instructions: Indicate occurrence of behavior with (+), nonoccurrence with (-).

Word	Prompt provided	Pause for response 5 sec.	Verbatim response	VR3
collect				
notice				
crackle				
carry				
combine				
visit				
sizzle				
focus				
prune				
skid				
listen				
call				
flutter				
trifle				
snuggle				
twinkle				
sweep				

APPENDIX I

INDEPENDENT VARIABLE RELIABILITY

References to Images in Books

Book Type: African American or Caucasian   (circle one)

Session: 1   2   3   4   5   6   7   8

Observer: _____   Date: _____

Instructions: Indicate number of occurrences of behavior with hash marks.

Task	Instructions	# of occurrences	Total
Identify the following behavior during story reading			
References images	Identify main character(s) in story by pointing to picture(s), not print.		
Approximate story reading time (indicate # of minutes)			
Identify the following behaviors during vocabulary instruction activities			
Contextualize word for its role in the story	Opens book to page on which target word appears		
References images	Points to image to which the word refers		
Approximate intervention time (indicate # of minutes)			

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INDEPENDENT VARIABLE RELIABILITY

First Book Reading

Miss Viola and Uncle Ed Lee _____   Sophie's Knapsack _____

Task	+, -	Instructions	+, -
Introduce task by showing book to children		"The title of the story I'm going to read is _____".	
Flip through pages of book showing illustrations		"Let's look at the pix to see if you can tell me what the story will be about."	
Point to cover and title		"The story is about _____."	
Ask pre-questions to build additional background information and establish purpose of listening		"Have you ever ____" or "Tell me about _____"	
Read book with enthusiasm		Use suitable speed, proper enunciation, volume, and intonation	
Point to pix		Make comment about illustrations	
████████████████████████			
Contextualize word for its role in the story by turning to page on which target word appears		" In the story _____"	
Provide definition		"_____ means _____"	
Create phonological representation		"Say the word after me, _____"	
Provide an example that is different from story		Provide appropriate example	
Interaction with word(s)		Provide 4-5 activities and/or examples in which children interact with and say the target word(s). √ all that apply _____ use of inferential questions _____ use of evaluative questions _____ comments about word(s) _____ choices between word(s) _____ relating word(s)	

		_____ child provided examples	
Reinforce phonological representation		"What word(s) have we been talking about?" Scaffold/expanded responses when needed? _____ yes _____ no	

INDEPENDENT VARIABLE RELIABILITY

Second Book Reading ___   Third Book Reading ___   Fourth Book Reading ___

Miss Viola and Uncle Ed Lee _____   Sophie's Knapsack _____

Task	+, -	Instructions	+, -
Introduce task by pointing to title		"Who remembers the title of this book _____?" Scaffold/expanded responses when needed? _____ yes _____ no	
Flip through pages of book showing illustrations		"Does anyone remember what the story is about?" Scaffold/expanded responses when needed? _____ yes _____ no	
Point to cover and title		"The story is about _____."	
Ask pre-questions to build additional background information and establish purpose of listening		"Have you ever ____" or "Tell me about _____"	
Read book with enthusiasm		Use suitable speed, proper enunciation, volume, and intonation	
Point to pix		Make comment about illustrations	
Elicit recall and phonological representation of word(s):		"The last time we read this story we learned 3 new words." "Say them after me." Say words.	
Turn to target word page		" In the story _____"	
Reinforce definition(s)		"Who remembers what _____ means?" Scaffold/expanded responses by providing definition? _____ yes _____ no	
Relate target word(s) to real life experiences		Provide examples and/or asks questions based children's lived experiences	
Interaction with word(s)		Provides 4-5 activities and/or examples in which children interact with and say the target word(s). √ all that apply _____ use of inferential questions	

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		_____ use of evaluative questions	
		_____ comments about word(s)	
		_____ choices between word(s)	
		_____ relating word(s)	
		_____ child provided examples	
Reinforce phonological representation		"What word(s) have we been talking about?" Scaffold/expanded responses when needed? _____ yes _____ no	

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Professional Publications:
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