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A Review of the Current Research on Vocabulary Instruction

NATIONAL READING TECHNICAL ASSISTANCE CENTER

NRTAC

A RESEARCH SYNTHESIS

A Review of the Current Research on Vocabulary Instruction

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Introduction

The National Reading Panel (NICHD, 2000) identified vocabulary as one of five major components of reading. Its importance to overall school success and more specifically to reading comprehension is widely documented (Baker, Simmons, & Kame'enui, 1998; Anderson & Nagy, 1991). The National Reading Panel (NRP) stated that vocabulary plays an important role both in learning to read and in comprehending text: readers cannot understand text without knowing what most of the words mean. "Teaching vocabulary will not guarantee success in reading, just as learning to read words will not guarantee success in reading. However, lacking either adequate word identification skills or adequate vocabulary will ensure failure" (Biemiller, 2005).

Vocabulary is generically defined as the knowledge of words and word meanings. More specifically, we use vocabulary to refer to the kind of words that students must know to read increasingly demanding text with comprehension (Kamil & Hiebert, 2005). It is something that expands and deepens over time.

The NRP's synthesis of vocabulary research identified eight findings that provide a scientifically based foundation for the design of rich, multifaceted vocabulary instruction. The findings are:

- **Provide direct instruction of vocabulary words for a specific text.** Anderson and Nagy (1991) pointed out "there are precise words children may need to know in order to comprehend particular lessons or subject matter."
- **Repetition and multiple exposures to vocabulary items are important.** Stahl (2005) cautioned against "mere repetition or drill of the word," emphasizing that vocabulary instruction should provide students with opportunities to encounter words repeatedly and in a variety of contexts.
- **Vocabulary words should be those that the learner will find useful in many contexts.** Instruction of high-frequency words known and used by mature language users can add productively to an individual's language ability (Beck, McKeown, & Kucan, 2002). Research suggests that vocabulary learning follows a developmental trajectory (Biemiller, 2001).
- **Vocabulary tasks should be restructured as necessary.** "Once students know what is expected of them in a vocabulary task, they often learn rapidly" (Kamil, 2004).
- **Vocabulary learning is effective when it entails active engagement that goes beyond definitional knowledge.** Stahl and Kapinus (2001) stated, "When children 'know' a word, they not only know the word's definition and its logical relationship with other words, they also know how the word functions in different contexts."
- **Computer technology can be used effectively to help teach vocabulary.** Encouragement exists but relatively few specific instructional applications can be gleaned from the research (NICHD, 2000).

- **Vocabulary can be acquired through incidental learning.** Reading volume is very important in terms of long-term vocabulary development (Cunningham & Stanovich, 1998). In later work, Cunningham (2005) further recommended structured read-alouds, discussion sessions and independent reading experiences at school and home to encourage vocabulary growth in students.

- **Dependence on a single vocabulary instruction method will not result in optimal learning (NICHD, 2000).**

Stahl (2005) stated, "Vocabulary knowledge is knowledge; the knowledge of a word not only implies a definition, but also implies how that word fits into the world." Consequently, researchers and practitioners alike seek to identify, clarify, and understand what it means for students "to know what a word means." The sheer complexity of vocabulary acquisition, as evidenced by reviewing critical components such as receptive vocabulary versus productive vocabulary, oral vocabulary versus print vocabulary, and breadth of vocabulary versus depth of vocabulary (Kamil & Hiebert, 2005) raise questions worthy of further research. Other factors such as variations in students' vocabulary size (Anderson & Freebody, 1981; Nagy, 2005), levels of word knowledge (Dale, 1965; Graves & Watts-Taffe, 2002), as well as which words are taught (Beck et al., 2002; Biemiller, 2005) and how word knowledge is measured (Biemiller, 2005) must all be considered in shaping our understanding of vocabulary acquisition.

The studies examined in the NRP Report (NICHD, 2000) suggested that vocabulary instruction does lead to gains in comprehension, but methods must be appropriate to the reader's age and ability. The importance of vocabulary to success in reading is well known, but there continues to be little research that conclusively identifies the best methods or combinations of methods of vocabulary instruction.

This publication reviews the most recent research on vocabulary acquisition and instructional practices since the release of the National Reading Panel's report.

Methodology

Database

In order to review the research since the NRP's review, we used procedures defined by Cooper (1994) to identify the body of studies included in this synthesis. These procedures included searching subject indices and citations, browsing, and footnote chasing (White, 1994). Computer searches of PsycINFO and ERIC databases from 2002–2009 were conducted to locate appropriate studies. Descriptors for the computer search included "reading" and "vocabulary," "vocabulary development," or "oral language development." The ERIC search yielded 342 results and PsycINFO yielded 297 results. Removing duplicates between the two databases generated a total of 324 results. Studies were selected through a two-step process that began as a broad search to locate all potentially relevant research articles and became more restrictive as selection criteria were applied.

Analysis

Because this review builds on the work of the NRP, we adopted its criteria for including studies:

1. The study must have been relevant to instruction of vocabulary and/or oral language development.
2. The study must have been published in a scientific journal.
3. The study's experimental design had to involve at least one treatment and an appropriate control group or needed to have one or more quasi-experimental variables with variations that served as comparisons between treatments (NRP, 2000).

Beyond the NRP's criteria, this review added:

4. The study must have been published between 2001 and 2009.
5. The study must have included student participants in pre–K, K, 1, 2, or 3, or any combination thereof.

Applying these criteria reduced the number of applicable studies to 14. Using a code sheet based on two published syntheses (Klingner & Vaughn, 1999), extensive coding was conducted to organize pertinent information from each study. The code sheet allowed reviewers to record information on the coder, participants (e.g., participants' ages) and their setting; the study's purpose, research design, and methodologies; and descriptions of the intervention, the measure, observations, and findings. When a study presented multiple purposes, sets of participants, and results, only those purposes, etc. that pertained to this synthesis were coded and analyzed.

Results

See the appendix for an overview of the research findings. Examination of the 14 studies included in this synthesis indicates convergence on the following research themes: (a) frequency of exposure to targeted vocabulary augments children's understanding of word meanings and their use of targeted words, (b) explicit instruction increases word learning, and (c) language engagement through dialogue and/or questioning strategies during a read-aloud enhances word knowledge.

Frequency of exposure to targeted vocabulary words

Higher frequency of exposure to targeted vocabulary words will increase the likelihood that young children will understand and remember the meanings of new words and use them more frequently.

In a multiple study research design, Biemiller and Boote (2006) found that repeated reading of a storybook resulted in greater average gains in word knowledge by young children. The researchers found that students made an average gain of 12% compared with the control group (children who only heard the story read once), as measured by a vocabulary test that assessed the meaning of words within context.

These results duplicate findings by Coyne, Simmons, Kame`enui, and Stoolmiller (2004), who researched how instructional time should be allocated to meet the intensive needs of children at-risk for reading difficulties. Although rereading stories and text demand additional instructional time, the increase in word learning for at-risk children makes rereading an effective use of time. A study by Justice, Meier, and Walpole (2005) that investigated the effectiveness of rereading text to enhance word learning also provided evidence of the positive impact of exposure to targeted words through repeated readings.

Another study, of third graders, found that semantic and lexical knowledge accrues over time. Greater gains were made in semantic (meaning-based) knowledge when students had greater frequency of exposure to the targeted words. The authors found a more gradual effect on lexical knowledge (McGregor, Sheng, & Ball, 2007).

Nation, Snowling, and Clarke (2006) studied a group of eight- and nine-year-olds to determine individual differences in vocabulary acquisition in children who have impaired reading comprehension. The findings indicate that poor comprehenders needed as many trials as the control group (children without comprehension deficits) to learn the phonological form of four nonsense words. It was learning the meaning, or definitions, of the "words" that clearly separated the children who struggled with comprehending text from those who did not have comprehension difficulties. The findings indicate that the source of poor comprehenders' difficulties with lexical learning may be rooted in semantic, rather than phonological, learning differences.

Explicit instruction of targeted vocabulary words

Explicit instruction of words and their meanings increases the likelihood that young children will understand and remember the meanings of new words.

Biemiller and Boote (2006) found that while rereading stories improved students' understanding of word meanings by 12%, an additional 10% gain occurred when word explanations were taught directly during the reading of the storybook. Biemiller and Boote suggest that teachers introduce *more* rather than *fewer* word meanings during read-alouds, stating that increasing the oral vocabulary of K–2 students by 400 word meanings per year is a reasonable goal. A similar study in Ipswich, England (Cain, 2007), with third grade students, investigated whether or not the use of word explanations (definitions) facilitated students' word learning. The investigator found that although students made gains when explanations were provided for unfamiliar words, they made the greatest increases when they explained their own definitions of the targeted words.

Although there is strong evidence supporting explicit instruction of vocabulary, a question remains regarding which aspect or model of instruction is best. Investigating approaches to explicit vocabulary instruction, Nash and Snowling (2006) found that using a contextual approach to instruction provided greater vocabulary gains compared with lessons that emphasized learning word definitions. Their findings also indicated that recalling the pronunciation of the unfamiliar words proved more difficult than learning their definitions.

Silverman and Hines (2009) also focused on which instructional methods work best in building word knowledge for pre-school to second-grade students. They investigated the use of multimedia to enhance read-alouds and vocabulary instruction for English language learners (ELL) and English speaking students. This study had two interventions: one with multimedia, the other without. In both conditions, the teachers used a scripted lesson on habitats using both narrative and informational texts. The intervention took place over four three-week cycles, one cycle for each habitat studied. Students were introduced to the books in the same order and eight words per book were chosen as the target words. The multimedia condition included four videos, one for each habitat. Students were shown video clips after reading to facilitate their review of all of the words taught. Findings indicated that the use of multimedia provided no statistically significant difference for English speaking students. The use of multimedia for English language learners, however, was significant. Data indicate that the gap between English learning and English speaking students was narrowed not only for the targeted vocabulary words but for general vocabulary knowledge as well.

Questioning and language engagement

Questioning and language engagement enhance students' word knowledge. Children are more likely to learn the meaning of the new words when teachers highlight targeted vocabulary through questioning or comments. To eliminate the possibility of prior learning, Ard and Beverly (2004) used researcher-developed "storybooks" to introduce nonsense words to children. The researchers found that children's understanding and memory of the "words" increased when teachers asked questions and made comments clarifying the meaning of the new "words."

Also studying the effects of teacher questioning, Blewitt, Rump, Shealy, and Cook (2009) conducted two experiments: one to assess the effect of low- and high-demand questions on word learning during storybook reading; the other to address the value of scaffolding questioning as students become more familiar with words. They found that preschoolers made greater gains in word learning when questions were scaffolded, that is, when teachers initially asked low-demand questions and gradually increased the complexity of the questions to the high-demand level.

Considering language engagement, Connor, Morrison and Slominski (2006) studied the language interaction between teachers and students during typical preschool emergent literacy activities such as alphabet recognition, letter-word association, and vocabulary games. They found a substantial variance in time spent on emergent literacy activities (from four to 90 minutes; from half-day to full day sessions; and from two to five days per week). They also found that classrooms ranged from language-centered environments (where children were immersed in oral language, reading, and writing experiences) to environments where children engaged in predominantly non-literacy learning activities. An interesting related finding was that children experience very different learning opportunities even when they are classmates in the same learning environment. This suggests the importance of considering background knowledge and experience on learning outcomes.

In a multi-focused experimental study, Coyne, McCoach, and Kapp (2007) extended word learning beyond the storybook reading session for kindergarten students. Children were divided into three groups, each receiving a different instructional approach to learning new words. One group was given the opportunity to learn the targeted words through interactive experiences that extended beyond just listening to the oral reading of the text. The investigators found that vocabulary instruction should include teacher-student dialogue and interactive activities that target the new words. The data indicated minimal word learning through incidental exposure of the words (reading the story without direct instruction) and only partial knowledge of the targeted vocabulary when word definitions were embedded during the story reading. Extending word knowledge through dialogue and interactive

experiences produced a statistically significant difference and, based on assessment data, children maintained word knowledge for six to eight weeks after instruction.

Similar findings were reported by Leung (2008), who conducted a study of preschoolers' knowledge of scientific vocabulary. Results indicated the greatest gains in word knowledge were made when an interactive approach was used. First, teachers engaged students in dialogue during an interactive read-aloud of informational picture books. Vocabulary and concepts were reinforced through student retellings and a hands-on activity that related to the targeted words and meanings.

Conclusions

Vocabulary instruction is a crucial component of reading instruction. The goal of vocabulary instruction is to help students learn the meanings of many words so they can communicate effectively and achieve academically. Effective vocabulary instruction requires educators to intentionally provide many rich, robust opportunities for students to learn words, related concepts, and their meanings. Students need strong instructional opportunities to build their personal warehouse of words, to develop deep levels of word knowledge, and acquire a toolbox of strategies that aids their independent word acquisition.

This review of current vocabulary research confirms the benefits of explicit teaching over implicit teaching in promoting vocabulary development. Results from this review suggest that effective and efficient research-based methods are available when selecting a particular instructional approach. The findings also suggest several instructional implications for promoting word knowledge:

- **Frequent exposure to targeted vocabulary words.** Biemiller and Boote (2006) found that repeated reading of a storybook resulted in greater average gains in word knowledge for young children.
- **Explicit instruction of targeted vocabulary words.** Biemiller and Boote (2006) also found that word explanations taught directly during the reading of a storybook enhanced children's understanding of word meanings. Nash and Snowling (2006) found that using a contextual approach to instruction produced greater vocabulary gains than lessons that emphasized learning word definitions.
- **Questioning and language engagement.** Scaffolding questions, that is, moving from low-demand questions to high-demand questions, promotes greater gains in word learning (Blewitt, Rump, Shealy, & Cook, 2009). Vocabulary instruction should include teacher-student activities and interactive activities that target new words (Coyne, McCoach & Kapp, 2007).

In summary, active vocabulary instruction should permeate a classroom and contain rich and interesting information. Vocabulary instruction should cover many words that have been skillfully and carefully chosen to reduce vocabulary gaps and improve students' abilities to apply word knowledge to the task of comprehension.

Appendix

Studies reviewed for this synthesis

Ard & Beverly (2004)

Vocabulary dimension
This experimental study examined the effect of adult questions and comments during joint book reading on pre-K children's acquisition of nonsense words.

Participants
40 preschoolers (divided into four groups of 10)

Description of intervention
Four condition groups:

1. (JBRO) Joint book reading only—3 exposures
2. (JBRQ) Repeated joint book reading with questions—6 exposures
3. (JBRC) Repeated joint book reading with comments—6 exposures
4. (JBRQC) Repeated joint book reading with both questions and comments—9 exposures

Outcome Measures
PPVT-III and Expressive One Word Picture Vocabulary Test (EOWPVT)

Findings
Children who heard scripted questions and comments indentified approximately two more words than children in the control and questions-only groups. Joint book reading with comments appeared more effective than joint book reading with questions.

Biemiller & Boote (2006)

Vocabulary dimension
The effect of direct word meaning instruction during repeated book reading vs. repeated book reading without instruction on the acquisition of word meanings was studied using a pretest-posttest assessment design.

Participants
Kindergarten, first grade, and second grade students in a Catholic school in Toronto, Canada

Description of intervention
Two studies:

In Study 1, K–2 students were read two books twice in one week; a third book was read four times. Students were pre- and post-tested on 24 word meanings with 12 word meanings instructed and 12 word meanings not instructed.

Study 2 was conducted in the same school as Study 1, but during the next school year. A five-day instructional sequence was developed for each story and word meanings taught were increased from 4 to 6 to 7 to 9. Each story was read four times, with a review each day. On Day 5, context sentences were added.

Outcome measure
A general vocabulary test

Findings
Two studies:

In Study 1, an average gain of 12% on word meanings was obtained using repeated readings. Adding word explanation added a 10% gain for a total gain of 22%. Kindergarten students made the greatest gain.

In Study 2, a gain of 41% in word meaning was found. In this study a substantial number of word meanings were taught using repeated oral reading of stories combined with explanations of words. The researchers suggest that teaching 400 word meanings per year is a reasonable goal.

Blewitt, Rump, Shealy, & Cook (2009)

Vocabulary dimension
This two-part experimental study assessed:

(1) whether low- or high-demand questions are more effective for learning new words from stories, and (2) the effect a scaffolding approach to asking questions had on learning new words.

Participants
60 (experiment 1) and 50 (experiment 2) three-year-old children from a suburban preschool

Description of intervention
Three illustrated storybooks were created and used in this experiment to study the impact of repeated reading, comments, and questioning.

Outcome measures
Expressive One Word Picture Vocabulary Test; PPVT-III; New Word Production Test; New Word Comprehension Test

Findings
Initial word learning involving a word-referent association is benefited by both low- and high-demand questions. Deeper understanding of a word's meaning is better supported when adults begin with low-demand questions and add high-demand questions as children become familiar with the word (scaffolding).

Cain (2007)

Vocabulary dimension
This experimental design research study investigated whether or not the use of explanation facilitates children's ability to derive accurate word meanings from story context.

Participants
45 British children aged 7 to 8 years old.

Description of intervention
Students read short stories containing different novel words. Each of the 16 stories contained contextual clues that students could use to infer the meaning of the novel word. Students were asked to define the novel word at the end of each story.

Group assignment based on student scores on British Picture Vocabulary Scales (BPVS) and the Neale Analysis of Reading Ability (NARA-II).

Outcome measure
Ratings of definition correctness

Findings
All students improved in the quality of their word definitions, but the greatest gains were made when children explained their own definitions or the experimenter's correct definition. This study found that explanation is a useful instructional technique that facilitates children's ability to derive word meanings from context.

Connor, Morrison & Slominski (2006)

Vocabulary dimension
This correlation study examined the language engagement of preschoolers with their teachers in relation to emergent literacy learning activities (alphabet, letter-word recognition, and vocabulary growth).

Participants
156 preschool children across six school sites (34 classrooms).

Description of intervention
The researchers examined the content of literacy activities across four dimensions: teacher managed versus teacher-child managed versus child-managed, code focused versus meaning focused, explicit versus implicit, and student versus classroom level instruction.

Teacher and parent questionnaires, as well as video-taped classroom visits were used to obtain data on student background and language skills.

Outcome measures
Alphabet Task (informal assessment); Woodcock-Johnson-II (Letter-Word Recognition, and Vocabulary)

Findings
Although the researchers acknowledge shortcomings in the research design and limitations to the research findings (no causal findings), they note two key findings:

- There is "substantial variability in the amounts and types of language and literacy activities children experienced"
- The learning activities "systematically related to preschoolers' language and emergent literacy skills in a complex, interactive fashion."

Coyne, McCoach & Kapp (2007)

Vocabulary dimension
This experimental research consisted of two studies to evaluate the effectiveness of extended instruction with kindergarten students in a small-group intervention model to examine the amount and quality of word learning that children experience as a result of extended instruction.

Participants
31 kindergarten students who attended a K–4 elementary school in a small Northeastern town.

Description of intervention
Two studies:

Study 1: Children were directly taught the meanings of three target vocabulary words in the context of story reading. Children's understanding of the target words was extended through interactive opportunities as well as increased exposure to the targeted words in various contexts beyond the story reading. The incidental exposure consisted of hearing the three targeted words three times during the story reading.

Study 2: The same procedure was followed for extended instruction as in Study 1; however, rather than incidental exposure, children received embedded instruction: they not only heard the targeted words during story reading, but were provided with simple definitions of the words.

Outcome measures
Three experimenter-developed individual assessments

Findings
Statistically significant findings indicated that in both studies, the kindergarten students learned the meanings of targeted words to a greater extent when an extended method of vocabulary instruction was used. Incidental exposure resulted in almost no word learning and embedded instruction resulted in only partial word learning.

Coyne, Simmons, Kame`enui, & Stoolmiller (2004)

Vocabulary dimension
Using an experimental design, this study focused on determining the critical components of early literacy instruction and how instructional time should be allocated. A secondary analysis questioned the impact of explicit, systematic, and strategic instruction on children at risk for reading difficulty.

Participants
96 kindergarten children from seven schools were divided into three treatment groups:

- Storybook intervention
- Phonologic and alphabetic skills (code-based group)
- Sounds and Letters module (control group)

Description of intervention
Children received 108 30-minute lessons based on 40 storybooks from November to May. Three target vocabulary words were explicitly taught from each storybook. A systematic cycle of instruction provided storybook rereading and student retellings with prompts.

Outcome measure
Experimenter-developed expressive measure of explicitly taught vocabulary

Findings
The group receiving the code-based instruction outperformed the storybook and control group on measures of phonologic and alphabetic skills. The storybook group, however, scored significantly higher than the code-based and control groups on expressive vocabulary.

A second analysis found that students with lower receptive vocabulary skills, as measured by the PPVT, benefited more (learned more vocabulary word meanings) from the storybook intervention compared with students who did not receive the storybook intervention. Teaching word meanings explicitly in the context of storybook reading resulted in the same level of vocabulary growth for students with smaller initial vocabularies as it did for students with larger vocabularies.

Justice, Meier, & Walpole (2005)

Vocabulary dimension
A pretest-posttest comparison group was used to study the influence of small-group storybook reading sessions on the acquisition of vocabulary words for kindergarten students at risk for reading difficulties. Secondary analyses focused on the impact of word elaboration and examined differential responses to treatment for children with high versus low vocabulary skills.

Participants
57 kindergarten students from two elementary schools (six classrooms) in a small urban community in a mid-Atlantic state.

Description of intervention
Children were randomly assigned to the treatment or comparison group. Children in the treatment group were further divided into small groups of three to six children. Students in the treatment group were exposed to 60 novel words from 10 storybooks. The reader provided the meaning and gave examples for 30 of the targeted 60 words. The other 30 words were given incidental exposure.

Outcome measures
PPVT-III; Expressive One Word Picture Vocabulary Test—Revised

Findings
Incidental exposure to novel words over four repeated readings resulted in negligible word learning for kindergarten children at risk for reading difficulties. Using an elaborated approach to learning novel words showed significant, but modest gains. The researchers suggest that due to the modest gains, storybook reading may not provide an efficient route to novel word learning.

Leung (2008)

Vocabulary dimension
An experimental design that explored young children's learning of scientific vocabulary, this study focused on the effectiveness of retelling and hands-on science activities related to concepts presented in a book.

Participants
37 preschool children (ages three to four years) at an urban YWCA Child Development Center in a Southeastern state.

Description of intervention
All children participated in book reading sessions using informational text on the science topic of light and color. Half of the children immediately retold the book. All children were provided with hands-on activities after the retellings. Thirty-two targeted words were selected from the three books used for the study.

Outcome measures
PPVT-III, EVT, and investigator designed assessment

Findings
Children who participated in the book retellings were better able to explain the meanings of the targeted words. Study findings indicate that young children can learn scientific names for complex concepts.

McGregor, Sheng, & Ball (2007)

Vocabulary dimension
Semantic and lexical aspects of word learning over time were studied using an experimental design.

Participants
34 monolingual eight-year-olds were recruited for this study via a newspaper advertisement.

Description of intervention
The children participated in vocabulary lessons for four sessions (three sessions during three consecutive weeks and one session one month later) that focused on 20 words and referents from foreign cultures.

Outcome measures
EVT; Nonword Repetition Test, K-BIT2

Findings
Semantic and lexical knowledge accrued over time and were maintained after a one-month interval. Higher frequency of exposure to the targeted words had an immediate effect on semantic learning and a gradual effect on lexical learning. Frequency of exposure to the targeted words coupled with informative context promoted semantic learning, suggesting that speech-language pathologists should consider the richness of the learning context as well as the redundancy of exposures to enhance word learning.

Nash & Snowling (2006)

Vocabulary dimension
A study of the efficacy of two forms of vocabulary intervention (definition method and the context method).

Participants
24 children aged seven to eight years old, with poor vocabulary knowledge.

Description of intervention
The children were divided into two groups. One group was taught new vocabulary words using definitions; the other group was taught a strategy for obtaining word meaning from written context.

Outcome measures
BPVS-II, ERNNI, Suffolk Reading Test, NARA-II, Experimental Vocabulary Knowledge, investigator-designed assessments

Findings
Both groups showed greater knowledge of the taught vocabulary directly after instruction. Three months later, the context group showed significantly better expressive vocabulary knowledge and comprehension of text containing the targeted vocabulary.

Nation, Snowling, & Clarke (2007)

Vocabulary dimension
An experimental study to investigate the individual differences in vocabulary acquisition in eight- to nine-year old children with impaired reading comprehension.

Participants
24 British fourth graders in one elementary school.

Description of intervention
Twelve children with impaired reading comprehension were matched for decoding skill and chronological age with 12 control children. A battery of screening assessments was administered. There were two sessions. In the first session the children were taught four nonsense words and were provided immediate feedback. After individual instruction, each child was assessed using a systematic procedure to determine his or her knowledge of the nonsense word and the definition. They were assessed again one week later.

Outcome measures
NARA-II; Graded
Non-word Reading Test

Findings
Poor comprehenders needed the same number of trials as the children in the control group to learn the nonsense words, suggesting that these struggling students are well-equipped with the skills needed to learn labels (words) for new objects. However, poor comprehenders had weak knowledge of the meaning of the new words, and poor recall over time. These findings suggest that the source of poor comprehension may be semantic rather than the phonological component of vocabulary learning.

Rosenthal & Ehri (2008)

Vocabulary dimension
An experimental study to determine whether spelling improves students' memory for pronunciation and knowledge of meanings of new vocabulary words.

Participants
20 second graders and 32 fifth graders at an elementary school in New Jersey.

Description of intervention
Students were taught two sets of six (Grade 2) or 10 (Grade 5) unfamiliar words and their meanings. The words were defined, depicted, and embedded in sentences. Students were shown the written form of the words in one set, but not the other.

Outcome measures
Woodcock Reading Mastery Test-Revised; PPVT-III; Boder Test of Word Reading; TOWRE; Test of Phonemic Decoding Efficiency; Ganske Spelling Inventory

Findings
Both second and fifth graders remembered more pronunciations and meanings of new vocabulary words when they were exposed to the written forms of the words during instruction. This study indicated that learning the correct pronunciation was more challenging for the students than learning the definition.

Silverman & Hines (2009)

Vocabulary dimension
An experimental design study to compare the effects of traditional and multimedia enhanced read-aloud vocabulary instruction on word learning for English Language Learners and non-English Language Learners.

Participants
85 students in one public elementary school (seven Pre-K to Grade 2 classrooms) in a "semi-urban" community in the Northeast.

Description of intervention
A parent questionnaire was used to gather information on each student's primary language. English language learning students spoke a wide range of languages (Haitian Creole, Portuguese, Mandarin, and Spanish). There were two intervention conditions, one non-multimedia and one multimedia. The content of learning for both was habitats. One hundred tier-2 words were taught during the 12-week intervention. In the multimedia group, four videos were used.

Outcome measures
Investigator-designed assessments, PPVT-III

Findings
The results of the study indicate there was no effect of the use of multimedia on word knowledge for non-ELLs. There was, however, an effect for ELLs. Among children who experienced the multimedia enhanced vocabulary intervention, the gap between non-ELL and ELLs in knowledge of words targeted during the intervention was closed, and the gap in general vocabulary knowledge narrowed.

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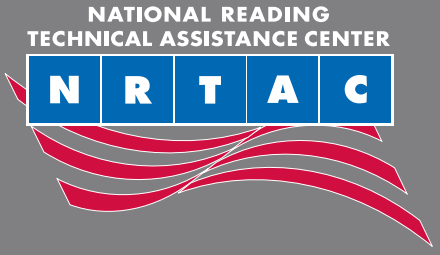
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