

Closing the Achievement Gap
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**Closing the Vocabulary Gap:
Intensifying Vocabulary Instruction
for At-Risk Students**

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1

Organizing Framework

1. Introduction
2. Description of direct, explicit instruction
3. Intensifying explicit instruction
 - Systematic review
 - Tier 2 intervention
4. Questions

2

Importance of Vocabulary


- Importance of vocabulary knowledge to school success, in general, and reading comprehension, in particular, is widely documented.
(e.g., Becker, 1977; Anderson & Nagy, 1991)
- The National Research Council (1998) and National Reading Panel (2000) recently concluded that vocabulary development is a fundamental goal for students in the early grades.

3

Vocabulary Instruction


- Research has shown that students can acquire new vocabulary words through incidental exposure.
(Elley, 1989; Penno, Wilkinson, & Moore, 2002; Senechal & Cornell, 1993; Robbins & Ehri, 1994)
- However, even greater gains can be made by teaching vocabulary directly.
 - Basic Vocabulary Instruction
(Elley, 1989; Justice, Meier, & Walpole, 2005; Walsh & Blewitt, 2006; Penno, Wilkinson, & Moore, 2002)
 - Rich Vocabulary Instruction
(Wasik & Bond, 2001; Senechal, Thomas, & Monker, 1995; Hargrave & Senechal, 2000; Coyne, McCoach, & Kapp, in press)

4



Project VITAL:
Vocabulary Intervention Targeting
At-risk Learners

Funded by:
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- *Project VITAL* Research on Rich Instruction
 - *Rich Instruction > Basic Instruction > Incidental Exposure*
 - Rich vs. Incidental (d = .91 – 2.57)
 - Rich vs. Basic (d = .38 – 1.70)
 - Basic vs. Incidental (d = .24 – .87)
- Rich instruction resulted in:
 - Learning more word meanings
 - Learning more full and complete word meanings
 - Students were able to produce definitions and understand words used in novel contexts

5

Vocabulary Knowledge

What does it mean to know a word?

- No knowledge
- General sense
- Narrow context-bound knowledge
- Having knowledge of a word but not able to recall it readily enough to use it in appropriate situations
- Rich, decontextualized knowledge of a word's meaning, its relationship to other words, and its extension to metaphorical uses (Beck, McKeown, & Kucan, 2002)

**Knowing a vocabulary word is
“not an all-or-nothing proposition.”**

6

Direct Vocabulary Instruction

The Role of Direct Vocabulary Instruction


300 - 400 new word meanings can be taught a year through direct instruction. This is a significant proportion of the words that many students will learn.
(Stahl & Shiel, 1999)

Because children with weaker vocabularies are less likely to learn new words from incidental exposure than children with larger vocabularies, teachers need to provide more explicit vocabulary instruction for children with smaller vocabularies.
(Nicholson & Whyte, 1992; Robbins & Ehri, 1994; Senechal, Thomas, & Monker, 1995)

7

Direct Vocabulary Instruction

IMOGENE'S ANTLERS
By David Small




“Her brother, Norman, consulted the encyclopedia, and then announced that Imogene had turned into a rare form of miniature elk!”

8

Direct Vocabulary Instruction

IMOGENE'S ANTLERS
By David Small



antlers, difficult, prodded, glared, advice, offer, fainted, lovely, decked, several, decorate, wandered, milliner, arrived, assistants, sighed, eventful, overjoyed

9

Direct Vocabulary Instruction

Selecting words to teach

Select vocabulary words to teach from books you are reading aloud, from text that students are reading independently, or that are related to the content of instruction (e.g., science, social studies).

Target vocabulary should include:

- Words that are important for understanding the text or content (and that are not explained within the text).
- Words that students will encounter often, functionally important words.

(Stahl, 1986)

10

Direct Vocabulary Instruction

	Tier 1	Tier 2	Tier 3
Description	Basic words that most children know before entering school	Words that appear frequently in texts and for which students already have conceptual understanding	Uncommon words that are typically associated with a specific domain
Examples	clock, cold, happy	avoid, fortunate, adapt	entomologist, peninsula, bucolic

(Beck, McKeown, Kucan, 2002)

11

Direct Vocabulary Instruction

Tier 2 Words

Example 1
“Jose avoided playing the ukulele.”
Which one word would you choose to teach?

Example 2
Isotope, coincidence, absurd, lathe
Which words are Tier 2 words?

12

The Tightrope

(1978)

By James Marshall



13

One morning when George looked out his window, he could scarcely believe his eyes. Martha was walking on a tightrope.

"My stars!" cried George. "I could *never* do that!"

"Why not?" said Martha. "It's tons of fun."

"But it's so high up," said George.

"Yes," said Martha.

"And it's such a long way down," said George.

"I see what you mean," said Martha.

Suddenly Martha felt uncomfortable. For some reason she had lost all her confidence. She began to wobble.

14

George realized his mistake. Now he had to do some fast talking.

"Of course," he said, "anyone can see you love walking the tightrope."

"Oh, yes?" said Martha.

"Certainly," said George. "And if you love what you do, you'll be very good at it too."

Martha's confidence was restored.

"Watch this!" she said. Martha did some fancy footwork on her tightrope.

15



Direct Vocabulary Instruction

Direct vocabulary instruction is more effective when teachers:

- Provide clear and understandable definitions.
- Use both definitions and context.
- Provide varied and rich opportunities to interact with words.
- Structure ample review and opportunities for learning.

16

Clear & Understandable Definitions

Teachers should present meanings of target words through instruction that is direct and unambiguous. Meanings should be presented using clear, consistent, and understandable wording.

Examples:

sturdy: soundly constructed or constituted
cottage: smallish frame dwelling

sturdy: strong
cottage: a little house

17

Definition & Context

When introducing a new vocabulary word, teachers should provide a simple definition or synonym and then model the definition within the context of a sentence or story.

Example:

(From *Where the Wild Things Are*)

Let the wild rumpus start!

"*Rumpus* means 'wild play'. Now I'll say the sentence with the words that mean the same as *rumpus*. 'Let the wild play start.'"



18


Definition & Context

When introducing a new vocabulary word, teachers should provide examples of the word used in contexts different from the story context.

Example:
(From *Where the Wild Things Are*)

Let the wild rumpus start!

"Other things could also be a rumpus or wild play. 'We were having a pillow fight that got crazy and turned into a rumpus!' or 'The puppies were having a rumpus, rolling around and barking.'"



19

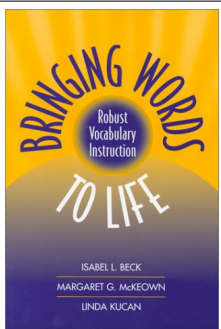
Varied & Rich Interactions

Teachers should provide children with opportunities to discuss words in extended discourse before and after reading. Additionally, teachers should provide children with tasks that challenge them to process word meanings at a deeper and more complex level.

Ways to provide varied and rich opportunities to practice

- Finding a synonym or antonym
- Making up a novel sentence with the word
- Classifying the word with other words (e.g., concept maps, word maps, semantic maps)
- Relating the definition to one's own experience

20



Beck, I.L., McKeown, M.G., & Kucan, L. (2002). *Bringing words to life: Robust vocabulary instruction*. New York: Guilford.

21

Varied & Rich Interactions

Examples that Encourage Deep Processing:

Which word goes with fabulous - o.k. or super? Why does super go with fabulous?

Is fabulous if you fall and scrape your knee? What would it be?

Maria thought her car was fabulous because. . .

The family had a fabulous time at the park. How could a family have a fabulous time? When have you had a fabulous time?

Is a masterpiece fabulous? Why?

The concert was the best he had ever heard. Every note seemed perfect. Am I talking about fabulous or discover?

22

Varied & Rich Interactions

Examples that Encourage Deep Processing:

Let's play a word game. I'll tell you about some things. If you think it is strong, say "That's sturdy!" If you think it is not very strong, say "Uh oh, that's not very sturdy!"

Examples:

- A big jet airplane in the sky.
- A little paper airplane on a windy day.
- A tall tower made of cards.
- This school.
- A big huge rock.
- A snowman on a hot sunny day.

23

Varied & Rich Interactions

Examples that Encourage Deep Processing:

Do you think a cauldron is sturdy? Why?

Would you be approaching a cauldron that was full of snakes? Why?

If a storm was approaching, would you go into a sturdy house? Why?

Would you put a cauldron on a chair that wasn't sturdy? Why?

What would you do if a dog was approaching your cauldron full of food? Why?

24

Varied & Rich Interactions

Examples that Encourage Deep Processing:

What is it?

animal
reptile
snake

What is it like?

long
scaly
legless
slithery
scary

serpent

What are some examples?

cobra
python
king
copperhead
cottonmouth

(Foil & Alber, 2002)

25

Varied & Rich Interactions

Examples that Encourage Deep Processing:

26

Ample Review

Storybooks should be read to children multiple times.

Students should be given the opportunity to discuss words multiple times both within and across lessons.

27

Direct Vocabulary Instruction

Summary:


- Choose Tier 2 words books you are reading aloud (narrative & informational), from text that students are reading independently, or that are related to the content of instruction (e.g., science, social studies).
- Choose words that will enhance the meaning of the text or content and that are important for students to know.
- Teach word meanings directly by providing clear and understandable definitions.
- Model word meanings by using both definitions and context.
- Provide students with the opportunity to process the words "deeply"
- Discuss the words multiple times within and across lessons.

28

An Investigation of Embedded & Semantically-Related Word Review

- Investigated the role of systematic word review in promoting word learning
- Compared two methods of word review
 - **Embedded Review**
 - Definitions of target words appeared during the readings of several storybooks
 - **Semantically-Related Review**
 - Target words were reviewed through extension activities occurring after the readings of several storybooks
 - Emphasis on semantic features & relationships

Methods



- 80 kindergarten students
- 3 urban districts
 - Small group instruction in 1 school
 - Whole class instruction in 2 schools
- 18 storybooks, each read twice

EXAMPLE: Target words introduced in Storybook 6.

	No Review	Embedded Review	Semantically-Related Review
Target Word	<i>regretful</i>	<i>sprinted</i>	<i>slope</i>
Introductory Storybook	Storybook 6	Storybook 6	Storybook 6
Definitions during 2 introductory storybook readings	Yes	Yes	Yes
Extended instruction following 2 introductory storybook readings	Yes	Yes	Yes

EXAMPLE: Systematic review of target words.

	No Review	Embedded Review	Semantically-Related Review
Target Word	<i>regretful</i>	<i>sprinted</i>	<i>slope</i>
Word Review			
Defined during subsequent storybook readings	None	Books 7a, 7b, 9a, & 9b	None
Extended instruction following subsequent storybook readings	None	None	Extension Activities 7a, 7b, 8a, 11a, & 15b

Semantic Features

- *sound/hearing*
- *appearance/seeing*
- *sensation/touch*
- *affect* ("feel")
- *action/use*
- *association* ("makes you think of")
- *location* ("found in")



Semantically-Related Review: Instructional Examples

• **Semantic Features of weeping**



- Sound (or appearance)
"Can you *hear* (or *see*) a person who is weeping?" → "Yes, you might hear a person who is weeping ... make *sniffling* sounds ..."
- Affect/Feeling
"If your friend was weeping, do you think that he would be *feeling* silly ... or *sad*?"
- Association
"Which makes you *think* of the magic word weeping ... a child going outside to play, ... or a child who *lost* her favorite toy?"

Word Associations

- **Synonyms** - e.g., minute-small, little, and tiny
- **Antonyms** - e.g., serene-excited
- **Collocations** - commonly co-occur in spoken or written language (e.g., slope-slippery)
- **Superordinates** - words representing categories (e.g., the target words serene, terrified, and elated were discussed under "feeling/feel")
- **Meronyms** - parts of a whole (e.g., stoplights, sidewalks, and crosswalks were presented as potential parts of a boulevard)
- **Functions** - words representing potential uses of superordinates (e.g., walking, driving, and riding down a boulevard)
- **Subordinates** - members of a category (e.g., plot, cavern, or boulevard were discussed as places that are found outdoors)
- **Coordinates** - subordinates that cluster together (e.g., witches, ghosts, and monsters were presented as things that might make someone feel terrified).

Semantically-Related Review: Instructional Examples

• **Associative Relationships for boulevard**



- Meronyms (parts)
"Which would you see on a boulevard: ... *Stoplights* and *crosswalks*, ... or a sandy beach?"
- Superordinate
"Where would you find boulevards: On the inside of a building, ... or outside in a *city*?"
- Function and Synonym
"The ambulance *drove* quickly down the road. Does this make think of the word boulevard ... or the word *sidewalk*?"

Measures

- **Experimenter-Developed Composite**
 - **Definitions**
"Tell me what the word halt means?"
 - **Neutral Context Questions**
"What would you be doing if you were halting?"
- **General**
 - **PPVT-III** (Dunn & Dunn, 1997)
 - **EOWPVT** (Academic Therapy Publications, 2000)

Results

- **Research Question 1**
 - Systematic Review vs. No Review ?
- **Results**
 - A paired samples t-tests revealed a statistically significant difference ($t(79) = 11.89, p < .001$) favoring **systematic review**
 - A large effect size ($d = 0.88$)

Results

- **Research Question 2**
 - Semantically-Related vs. Embedded Review ?
- **Results**
 - A paired samples t-test revealed a statistically significant difference ($t(79) = 6.54, p < .001$) favoring **Semantically-Related Review**
 - A small to moderate effect size ($d = 0.35$)

Results



- **Additional Analysis**
 - Growth in general vocabulary knowledge ?
- **Results**
 - A paired-samples t test revealed a statistically significant increase ($t(74) = 4.07, p < .001$) in average **PPVT-III** scores from pretest (94.49) to posttest (98.99); ($d = 0.29$, indicating a small effect size)
 - No significant difference on the EOWPVT

Implications

- **Systematic word review** appears to significantly enhance word learning
 - **Embedded definitions** appear to be a time-efficient method of word review
 - Word review with an emphasis on **semantic relationships** during **extension activities** appears to be a particularly effective in optimizing word learning
- Ongoing vocabulary intervention that combines **extended vocabulary instruction & systematic review** may promote generalized word learning

Differential Effects

- Students with higher initial vocabularies tend to benefit more from extended vocabulary instruction than do students with lower initial vocabularies (Coyne et al., in press; Coyne et al., 2004; Penno et al., 2002; Robbins & Ehri, 1994; Senechal, Thomas, & Monker, 1995)
- These findings suggest that students who are at risk for language and literacy difficulties may require additional direct, explicit vocabulary instruction in order to make vocabulary gains comparable to their peers.

Multiple Tiers of Intervention

- Tier 1**
 - Research-based general classroom instruction
 - Designed for all students
- Tier 2**
 - Research-based small group or individual instruction
 - Designed for students at-risk of learning difficulties

43

School-wide Reading Support

44

Effective Components of Tier 2

- Small group format (Swanson, 1999; Vaughn, Gersten, and Chard, 2000)
- Increase in instructional time (Gettinger, 1989; Skinner, Belfiore, & Watson, 2002)
- More explicit, supportive, and intensive instruction (increase scaffolding, corrective feedback) (Foorman and Torgesen, 2001)
- Interactive dialogue between students and teacher (Vaughn, Gersten, and Chard, 2000)

45

Tier 2 Instruction

- Confirm correct response
- Immediate correction of incorrect response
- Additional turns for struggling students
- Demonstrate correct word usage
- Encourage use of target word in responses

46

Outcome Measures

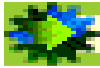
- Lexical Decision** Examiners read a list of words containing both target words and nonsense words. For each word, students were required to indicate whether or not they had heard the word before.
- Target Word Picture Vocabulary** Examiners presented students with four picture choices and asked students to point to the picture corresponding to the target word.
- Context Question** Students responded to questions containing target words (e.g. What is more immense than a horse?).
- Expressive Definition** Students were required to provide definitions of target words (e.g. Tell me what the word drenched means?).

47

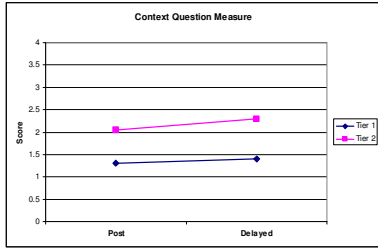
Results

Tier	Post	Delayed
Tier 1	~2.8	~2.7
Tier 2	~3.4	~3.0

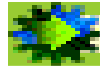
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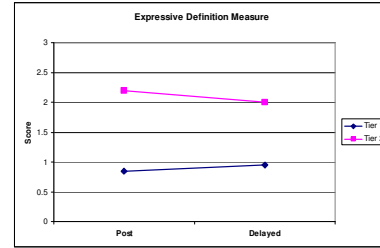
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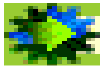
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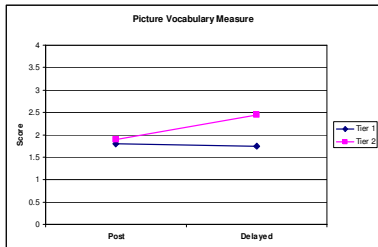
Results



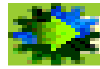
50



Direct Vocabulary Instruction



51



Conclusions

1. Students at risk for language and literacy difficulties learned target vocabulary words taught using additional Tier 2 intervention to a greater extent than words taught using only classroom-based, Tier 1 instruction.
2. At-risk students' vocabulary knowledge on words receiving Tier 2 intervention looked similar to vocabulary knowledge of typically achieving peers.

52