FOSTERING STUDENTS' READING COMPREHENSION THROUGH BUILDING LANGUAGE AND KNOWLEDGE IN K-3 CLASSROOMS

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AGENDA FOR TODAY

• Introduction: How Reading Aloud Helps Students Learn
  • Building Language
  • Building Knowledge
  • Putting it All Together: Core Knowledge Language Arts Program

INTRODUCTION: HOW READING ALOUD HELPS STUDENTS LEARN

OPENING ACTIVITY

• Write down five books (or texts) that you read aloud to your students.
• Share with your neighbors.

WHAT IS READING?

\[ \text{Reading} = \text{Decoding} \times \text{Comprehension} \]

NATIONAL STUDENT ACHIEVEMENT

Figure 1. Percentage of Proficient Students
WHY IS READING ALOUD IMPORTANT FOR STUDENT LEARNING?

• Builds vocabulary skills
• Builds listening comprehension
• Builds knowledge

\[ R = D \times C \]

WHAT MATTERS ABOUT READING ALOUD

• **What** you read is important
• **How often** you read is important
• **How** you read it is important

WHAT YOU READ IS IMPORTANT

• Complexity of texts
• Topics of texts
• Varied text genre, including informational text

WHERE ARE THE RARE WORDS THAT CHILDREN WILL ENCOUNTER IN SCHOOL?

<table>
<thead>
<tr>
<th>Rare words per 1000 (rare-roughly outside the vocabulary of a 4th to 6th grader)</th>
<th>Adult to child (6 mo.)</th>
<th>Adult to child (3 yrs.)</th>
<th>College graduates</th>
<th>Children's book</th>
</tr>
</thead>
<tbody>
<tr>
<td>9</td>
<td>9</td>
<td>17</td>
<td>31</td>
<td></td>
</tr>
</tbody>
</table>

HOW OFTEN YOU READ IS IMPORTANT

How often do you currently read aloud?

A. Daily  
B. 3 times a week  
C. Once per week
HOW OFTEN YOU READ IS IMPORTANT

How long is your typical session?

A. 5 minutes
B. 15 minutes
C. 30 minutes
D. 1 hour

Language and knowledge are not constrained skills and they take time to build!

HOW YOU READ IS IMPORTANT

• Interactive read alouds matter

• Importance of extra-textual talk to build vocabulary and listening comprehension

BUILDING LANGUAGE

ACADEMIC LANGUAGE

• Academic language serves as a bridge between casual language used in speech to the language used in books.

BUILDING ACADEMIC LANGUAGE

• Vocabulary

• Listening Comprehension
VOCABULARY IS...

• how many words you know (breadth).

• how well you know those words (depth).

VOCABULARY IS... RECEPTIVE VS. EXPRESSIVE VOCABULARY

• Receptive vocabulary
  – The words that children can understand when they hear them.

• Expressive vocabulary
  – The words that children use in their own speech.

Children understand much more than they produce.

HOW MANY WORDS DOES THE AVERAGE PERSON KNOW?

Write down your estimates for the number of words known (as exhibited by their expressive vocabulary).

<table>
<thead>
<tr>
<th>Age</th>
<th>Number of Words</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>2</td>
<td>300</td>
</tr>
<tr>
<td>3</td>
<td>2,000</td>
</tr>
<tr>
<td>5</td>
<td>3,000</td>
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<td>7</td>
<td>5,200</td>
</tr>
<tr>
<td>10</td>
<td>8,400</td>
</tr>
<tr>
<td>22</td>
<td>20,000</td>
</tr>
</tbody>
</table>

VOCABULARY SIZE INCREASES AS WE AGE

VOCABULARY DEVELOPS VERY QUICKLY IN EARLY CHILDHOOD

• Many hundreds of words per year during the first seven years
  – About 2.5 words per day
  – 6,000 words by age 7

• Children who fall behind in early childhood tend to stay behind
  – 25% of children learn only 1.6 words/day
  – Only 4,000 words by age 7

HART & RISLEY (1995) "THE 30 MILLION WORD GAP"
STUDENTS LIVING IN POVERTY COME TO SCHOOL:

- Knowing fewer words
- Having less knowledge
- Using less complex syntax

VOCABULARY INSTRUCTION IN KINDERGARTEN BY SCHOOL PERCENT FRL

WHY IS VOCABULARY IMPORTANT?

- Early vocabulary size predicts later reading.
- Children with larger vocabularies will become faster and better readers.
- Children who know more words will understand more of what is read to them and learn more and this cycle repeats itself.

WHY IS VOCABULARY IMPORTANT?

ACTIVITY: THE IMPORTANCE OF VOCABULARY TO READING COMPREHENSION

PASSAGE 1: THE TRAVITY

The Earth is surrounded by an ocean of gases we call the travity. The travity is important because it contains the air most living things breathe. It also absorbs heat from the sun. If it ever recycles water by returning it back to the Earth as rain. Without the travity, life as we know it could not exist on Earth. The travity extends far above the surface of the Earth. Scientists discovered that the travity is divided into layers, just like a layer cake. Each layer varies in thickness and in temperature. Each layer is comprised of a different ratio of gases.

Which is an important function of the travity?
A. Keeping gases close to the Earth.
B. Absorbing the sun’s heat.
C. Evaporating the air living things breathe.
D. Containing water from the Earth.

What does the word travity mean in this passage?
A. A process material that is used again.
B. To keep the air pressure constant.
C. The way the parts of something are arranged.
D. Music notes written on a page

Retrieved from http://www.ncsu.edu/project/lancet/fourth.htm

PASSAGE 2: THE ATMOSPHERE

The Earth is surrounded by an ocean of gases we call the atmosphere. The atmosphere is important because it contains the air most living things breathe. It also absorbs heat from the sun. If it ever recycles water by returning it back to the Earth as rain. Without the atmosphere, life as we know it could not exist on Earth. The atmosphere extends far above the surface of the Earth. Scientists discovered that the atmosphere is divided into layers, just like a layer cake. Each layer varies in thickness and in temperature. Each layer is comprised of a different ratio of gases.

Which is an important function of the atmosphere?
A. Keeping gases close to the Earth.
B. Absorbing the sun’s heat.
C. Evaporating the air living things breathe.
D. Containing water from the Earth.

What does the word composition mean in this passage?
A. Process material that is used again.
B. To keep the air pressure constant.
C. The way the parts of something are arranged.
D. Music notes written on a page

Retrieved from http://www.ncsu.edu/project/lancet/fourth.htm
REFLECTION QUESTIONS FOR PASSAGES 1 AND 2

• Did you find the passage easy or difficult to understand?
• What was it like to read without knowing important words in Passage 1?
• How did your familiarity with the words in Passage 2 affect your comprehension?
• Did you find it easy or difficult to answer the comprehension questions?
• Even if some of the words in the passages were not very familiar to you, how did your background knowledge affect your understanding?

SUMMARY OF ACTIVITY

• Vocabulary knowledge impacts reading comprehension.
• Breadth and depth are important to reading comprehension.

BUILDING STUDENTS’ VOCABULARY

Breadth and Depth

HOW DOES VOCABULARY GROW?

• By increasing breadth:
  • The number of words children know.
• By increasing depth:
  • The ways in which children know these words.

UNDERSTANDING BREADTH AND DEPTH

• Breadth - the number of entries
• Depth - the number of definitions

ACTIVITY: WORD KNOWLEDGE SORT

<table>
<thead>
<tr>
<th>Know it well, can explain it, use it</th>
<th>Know something about it</th>
<th>Have seen or heard the word</th>
<th>Do not know the word</th>
</tr>
</thead>
<tbody>
<tr>
<td>Benevolent</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Emerging</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Violet</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lucky</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Jocund</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Detest</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Scary</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Somnolent</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fortune</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
WORD WEBS: BREADTH AND DEPTH ARE RELATED

• Your brain organizes and connects words in a "web of knowledge."

• The more words you know and the better you know them, the more intricate and tighter the web.

• The better the web, the better the understanding.

• Less information gets through a tighter web.

WORD WEBS CAN BE TIGHT OR LOOSE

• Many words
• Many layers of meaning
• More connections

• Fewer words
• Fewer layers of meaning
• Fewer connections

ACTIVITY: BUILDING WORD WEBS
1. Write down all the words you can think of related to **‘air’**
2. Write down all the words you can think of related to **‘atmosphere’**
3. Turn these into ‘webs’ by drawing lines between any words that are related

EXAMPLE WEB: AIR

EXAMPLE WEB: ATMOSPHERE

ACTIVITY: REFLECT ON BUILDING WORD WEBS
1. Which word (air or atmosphere) was easier to brainstorm around? Why?
2. Which word has a tighter web for you? Why?
3. Can you see how it’s not only the words you know, but how well you know them (the more connecting lines) that affects your understanding?
SUMMARY OF ACTIVITY
• Your brain organizes and connects words in a “web of knowledge”
• The more words you know and the better you know them, the more intricate and tighter the web
• The better the web, the better the understanding
• Less information gets through a tighter web

QUICK KNOWLEDGE CHECK
1. Why is vocabulary important in the early grades?
2. In your own words why is it important to focus on both “breadth” and “depth” when teaching vocabulary?

VOCABULARY: BUILDING BREADTH AND DEPTH
• Selecting words to teach
• Providing child-friendly definitions

SELECTING WORDS TO TEACH
What are factors to consider in word selection?

FACTORS TO CONSIDER IN WORD SELECTION
• Choose difficult and potentially unknown words
• Choose useful words
  • (high mileage)
• Choose key concepts in text

WHAT MAKES A WORD “USEFUL”?
• Would a child encounter the word again?
• Is the word related to other words?
  – Help children make tight “webs”
• Will the child hear or say the word in other contexts?
WORDS FALL INTO 2 CATEGORIES:

- Category 1: Familiar/Everyday
  - Cat
  - Bus
  - Book
- Category 2: Useful/High Mileage
  - Weather
  - Season
  - Measure

ACTIVITY: SORT WORDS INTO CATEGORIES 1 AND 2

<table>
<thead>
<tr>
<th>CATEGORY 1: FAMILIAR/EVERYDAY</th>
<th>CATEGORY 2: USEFUL/HIGH MILEAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Table</td>
<td>Destroy</td>
</tr>
<tr>
<td>Grass</td>
<td>Brave</td>
</tr>
<tr>
<td>Sad</td>
<td>Recycle</td>
</tr>
<tr>
<td>Green</td>
<td>Pleasant</td>
</tr>
</tbody>
</table>

CATEGORY 1 & 2 WORDS SORTED

ACTIVITY: SELECTING WORDS TO TEACH

- Select a passage (K, 1, 2, or 3)
- Read passage
- Circle all words that are difficult or potentially unknown to students.

ACTIVITY: SELECTING WORDS TO TEACH

- Select 5 words that you would teach.
- Share these with a partner who is working with the same passage.

WHICH WORDS DID YOU CHOOSE?

- There is no single “right” answer
- Different words may be useful in different classrooms
- The words you choose depends upon your students and your teaching goals across the curriculum
CHILD-FRIENDLY DEFINITIONS

• Dictionary definition of compliment
  – Compliment: an expression of esteem, respect, affection, or admiration; especially: an admiring remark

• Teacher’s definition of compliment
  – When you say something nice about someone else

• How is the teacher’s definition more child-friendly?

FEATURES OF CHILD-FRIENDLY DEFINITIONS

• Relies on words children already know
• Easy to understand
• Provides synonyms and antonyms
• Provides real-life examples

NOT SO CHILD-FRIENDLY DEFINITIONS

• Steadily: free from change, variation, or interruption; uniform; continuous
• Company: companionship, fellowship, association
• Inspect: to look carefully at or over; view closely or critically
• Bolted: a sudden dash, run, flight, or escape

ACTIVITY: WRITING CHILD-FRIENDLY DEFINITIONS

• Four selected words from our passages:
  • K - Steadily
  • 1 - Company
  • 2 - Inspect
  • 3 - Bolted
• Make a “child-friendly” definition for those words
• Share/compare your definitions with a partner

EXAMPLES: WRITING CHILD-FRIENDLY DEFINITIONS

• Steadily means doing something continuously, at the same speed.
• Company means to have someone to talk to.
• Inspect means to look carefully at something.
• Bolted means moved or ran off suddenly.

DISCUSSION: WRITING CHILD-FRIENDLY DEFINITIONS

• Did you find it easy or difficult to use words children already know in your definition?
• Were you able to make the definitions short and simple?
• How could adding synonyms and antonyms help tighten children’s word webs?
QUICK KNOWLEDGE CHECK

1. What are some factors to consider when selecting words to teach?

2. What are some attributes of “child-friendly” definitions?

LISTENING COMPREHENSION IS....

- Understanding text being read aloud

"For Sale: Baby shoes, never worn."

Some say this short story was written by Hemingway. See link for more information: http://en.wikipedia.org/wiki/For_sale:_baby_shoes,_never_worn

WHAT MAKES A TEXT COMPLEX?

- Increasingly complex content
- Increasingly complex language in terms of:
  - vocabulary
  - grammar
  - syntax
  - sentence structures

DIMENSIONS OF COMPLEXITY

- Knowledge demands:
  - Levels of Meaning
  - Life Experiences
  - Cultural and Content Knowledge

- Language demands:
  - Structure
  - Conventionality and Clarity

(CCSS ELA Appendix A, p. 6)
HOT CROSS BUNS

- Hot cross buns!
- Hot cross buns!
- One a penny, two a penny,
- Hot cross buns!

Meaning:
I have buns for sale!

Explicit ➔ Obscure

Structure:
Sentence has an article, a noun, a verb and an adjective or adverb.

“Hot dogs cost 99 cents.”
One for a penny, two for a penny.
I have buns for sale!

Conventional ➔ Unconventional

Knowledge:
Most students would know the words, “hot,” “cross,” and “buns”.

What are hot cross buns?
- Spiced sweet bun made with raisins and marked with a “frosting” cross on the top
- Traditionally eaten on Good Friday

Everyday Knowledge ➔ Cultural Knowledge

KEEP IN MIND

- Complexity should increase over time.
- Read-alouds in the early grades should be more concrete.
  - Early grades—usually will find one or two elements or dimensions of complexity employed through a single text.
  - Upper grades—usually will find multiple aspects of complexity in a single text.

TEXT-DEPENDENT QUESTIONS

- Text-dependent questions are questions that can only be answered through close analysis of text.
- Encourage student to gather evidence, insight, and knowledge from the text.

Why?
- Focuses questions on what’s important versus on distractors (provided text is appropriate)
- Focuses on and builds habit for textual support of answers (future skills and expectations)
WRITE THREE QUESTION TYPES
Using the passage from the "selecting words" activity, write each kind of question.

**Literal**
- assess students’ recall of content

**Inferential**
- guide students to infer information from the text

**Evaluative**
- guide students to build upon what they have learned from the text to use their creative, analytical, and application skills

BUILDING KNOWLEDGE

A THIRST FOR KNOWLEDGE

- Children are curious about the world
- Children’s questions drive their cognitive development

ACTIVATE PRIOR KNOWLEDGE

How can we activate prior knowledge if there is no prior knowledge to activate?

UNDERSTANDING THE REASON FOR THIS STUDY

PASSAGE #1

“Kallis and Rhodes put on 84 but, with the ball turning, Mark Waugh could not hit with impunity and his eight overs cost only 37. The runs still had to be scored at more than seven an over, with McGrath still to return and Warne having two overs left, when Rhodes pulled Reiffel to Beven at deep square leg.”
STUDENTS NEED KNOWLEDGE TO BUILD A RICH AND COHERENT REPRESENTATION OF THE TOPIC.

PASSAGE #2

“They’re very sound in what they do. Defensively, they are a good tackling team, they have great corners. Obviously, the pass rush is good, their linebacker play goes without being said, they’re outstanding. And then offensively, they control the clock and they pound you into submission…”

REMEMBER OUR WEBS

• Most vocabulary learning happens IMPLICITLY and INCIDENTALLY.

• Web of knowledge is critical for efficient word learning.

KNOWLEDGE HELPS FILL IN GAPS

Simple texts, like those on reading tests, are filled with gaps – presumed domain knowledge – that the writer assumes the reader knows.

Conclusion:
Knowing about the subject matter makes you a reader who is better able to understand what you read.
KNOWLEDGE HELPS RESOLVE AMBIGUITY

HOW DOES KNOWLEDGE HELP?

- Stand up and find a partner
- Discuss:
  - How does knowledge help reading comprehension?
  - How can knowledge support critical thinking?

2012 NATIONAL SURVEY OF SCIENCE AND MATHEMATICS EDUCATION

| Teaching Each Subject in Self-Contained Classes, by Grades Number of Minutes Per Day |
|-------------------------------------------------|-----|-----|
| Grades K–3                                      | 89  | 83  |
| Grades 4–6                                      | 83  | 83  |
| Reading/Lang. Arts                              | 54  | 61  |
| Mathematics                                     | 19  | 24  |
| Science                                         | 16  | 21  |

ARTICLE: WHY THE ABSENCE OF A CONTENT-RICH CURRICULUM CORE HURTS POOR CHILDREN MOST

WHAT WE KNOW

- Knowledge builds on knowledge
- All of our most desirable goals for education are all knowledge dependent:
  - Creativity
  - Problem solving
  - Reading comprehension
  - General achievement
- Knowing things allows us to expend the smallest amount of cognitive capacity on processing lower-order aspects of a problem so that more cognitive capacity is available for higher levels

DR. DAN WILLINGHAM, UVA
STAYING ON A TOPIC

(Excerpt from Core State Standards for English Language Arts & Literacy in History/Social Studies, Science, and Technical Subjects, p. 33)

• Reading a series of text on a topic can grow as much as 4 times more vocabulary as jumping from topic to topic.

• Choose topics not themes.

DISCUSSION

What is the difference between a topic and a theme?

TOPICS VS. THEMES

<table>
<thead>
<tr>
<th>Topics</th>
<th>Themes</th>
</tr>
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<tbody>
<tr>
<td>Sea Mammals</td>
<td>Courage</td>
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<tr>
<td>Explorers</td>
<td>Friendship</td>
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<td>Survival</td>
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<td>Health</td>
<td>Growing Up</td>
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<td>Decisions</td>
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<td>Family</td>
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<td>Respect</td>
</tr>
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<td>“We Help Each Other”</td>
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<tr>
<td>Immigrants</td>
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</table>